DOE/EIS-0161-Vol, 3

Final Programmatic Environmental Impact Statement for Tritium Supply and Recycling

Comment Response Document

Volume III

United States Department of Energy
Office of Reconfiguration

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COVER SHEET

RESPONSIBLE AGENCY: U.S. Department of Energy

COOPERATING AGENCY: U.S. Environmental Protection Agency

TITLE: Final Programmatic Environmental Impact Statement for Tritium Supply and Recycling (DOE/EIS-0161).

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ABSTRACT: Tritium, a radioactive gas used in all of the Nation's nuclear weapons, has a short half-life and must be replaced periodically in order for the weapon to operate as designed. Currently, there is no capability to produce the required amounts of tritium within the Nuclear Weapons Complex.

The PEIS for Tritium Supply and Recycling evaluates the alternatives for the siting, construction, and operation of tritium supply and recycling facilities at each of five candidate sites: the Idaho National Engineering Laboratory, the Nevada Test Site, the Oak Ridge Reservation, the Pantex Plant, and the Savannah River Site. Alternatives for new tritium supply and recycling facilities consist of four different tritium supply technologies: Heavy Water Reactor, Modular High Temperature Gas-Cooled Reactor, Advanced Light Water Reactor, and Accelerator Production of Tritium. The PEIS also evaluates the impacts of the DOE purchase of an existing operating or partially completed commercial light water reactor or the DOE purchase of irradiation services contracted from commercial power reactors. Additionally, the PEIS includes an analysis of multipurpose reactors that would produce tritium, dispose of plutonium, and produce electricity.

Evaluation of impacts on land resources, site infrastructure, air quality and acoustics, water resources, geology and soils, biotic resources, cultural and paleontological resources, socioeconomics, radiological and hazardous chemical impacts during normal operation and accidents to workers and the public, waste management, and intersite transport are included in the assessment.

PUBLIC COMMENTS: In preparing the Final PEIS, DOE considered comments received by mail, fax, handed in at hearings, transcribed from messages recorded by telephone, and those transmitted via Internet. In addition, interactive public hearings were held in April 1995 at the following locations where comments and concerns identified during discussions were summarized by notetakers: Washington, DC; Las Vegas, Nevada; Oak Ridge, Tennessee; Pocatello, Idaho; North Augusta, South Carolina; and Amarillo, Texas.

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CHAPTER 1: ISSUE CATEGORIES

This chapter describes the public comment process for the Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling and the procedure used in responding to those comments. Section 1.1, the introduction, describes the means through which comments were acquired, summarized, and numbered. Section 1.2 discusses the new public hearing format that was used to solicit comments from the public. Section 1.3 describes the organization of this document as well as how the comments were categorized, addressed, and documented. The chapter concludes with a discussion of the major comments and changes from the Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling brought about by the public comment process.

1.1 INTRODUCTION

In February 1995, the Department of Energy published the *Draft Programmatic Environmental Impact Statement (PEIS) for Tritium Supply and Recycling* evaluating the siting, construction, and operation of tritium supply technology alternatives and recycling facilities at five candidate sites within the Nuclear Weapons Complex (Complex). The 60-day public comment period for the Draft PEIS began on March 17, 1995, and ended on May 15, 1995. However, comments were accepted as late as June 23, 1995.

During the comment period, public hearings were held in Las Vegas, NV; Washington, DC; Pocatello, ID; Oak Ridge, TN; North Augusta, SC; and Amarillo, TX. Two hearings were held at each location. In addition, the public was encouraged to provide comments via mail, fax, electronic bulletin board (Internet), and telephone (toll-free 800-number).

Attendance at each hearing, together with the number of comment summaries recorded, is presented in table 1.1–1. Attendance numbers are based on the number of participants who completed and returned registration forms and may not include all of those present at the meetings. In addition to comments received at the public hearings, comments were also received during the public comment period through the other means described above.

All public hearing comment summaries were combined with comments received by other means during the public comment period. Comments received by mail, fax, Internet, or telephone were date stamped and assigned a sequential document number according to origin (i.e., fax, mail, etc.) of the document. Chapter 3 of this volume contains a copy of the documents DOE received. Table 1.1–2 provides an overview of the number of documents and comments submitted by each method. The document number codes that were assigned to each document based on the method of submission are given in parentheses in table 1.1-2. For example, all documents that were handed in at public hearings have document numbers beginning with TSR-H.

TABLE 1.1–1.—*Hearing Attendance and Comment Summaries*

Hearing Location	Total Attendance	Comment Summaries
Las Vegas, NV	150	127
Washington, DC	22	33
Pocatello, ID	39	54
Oak Ridge, TN	38	70
North Augusta, SC	299	119
Amarillo, TX	105	111

TABLE 1.1–2.—*Document and Comment Submission Overview*

Method	Documents Received	Total Comments Received
Hand-in at public hearings (TSR-H)	42	71
Mail-in (TSR-M)	184	550
Petitions/mass mailings (TSR-PC)	7	499
Fax (TSR-F)	48	209
Phone (TSR-P)	90	136
Electronic Bulletin Board (TSR-E)	2	2

1.2 New Public Hearing Format

In response to public comments and feedback critical of the Department's traditional courtroom-style hearing format, the public hearings held for the Draft PEIS were conducted using a new interactive format. The format chosen allowed for a two-way interaction between DOE and the public; increased public awareness and understanding on project-related impacts discussed in the Draft PEIS; and encouraged informed public input and comments on the document. Neutral facilitators were present at the hearings to direct and clarify discussions and comments.

The public hearing format consisted of three parts: an overview session; discussion groups on environmental impacts and project descriptions; and a summary session. At the overview session, officials from the DOE Headquarters' Office of Reconfiguration and a DOE representative from the regional office presented an overview of the Tritium Supply and Recycling Program.

Following the overview, the hearing attendees were asked to break into discussion groups on either environmental impacts or project description depending on their interests and concerns. In instances where there were a small number of attendees, discussion groups were not separated. Each discussion group met for one and one-half hours. Each session began with a brief presentation by a DOE official who summarized the most important aspects of the environmental impacts or project description and alternatives as appropriate for that session. The question and discussion period commenced with a facilitator moderating the session. A notetaker was present in each session for documenting comments for consideration in preparation of the Final PEIS. At the end of the prescribed time for the group discussion, attendees could, if they chose to, switch discussion groups and the sessions were repeated. Following the close of the discussion group, a summary session was held to present the major comments and issues identified in each discussion group and to ask for additional comments or clarification. Following the public hearings, comment summaries were prepared by the notetakers with input from the facilitators who were present in the respective sessions.

1.3 Organization

The Comment Response Document has been organized into the following sections:

- Chapter 1 describes the comment response process and lists the issue categories.
- Chapter 2 contains comments received at the public hearings and documents received during the public comment period.
- Chapter 3 contains comment summaries and DOE responses by category.

Tables are provided at the end of this chapter to assist commentors and other readers in locating individual comments regarding the Draft PEIS. Once comments were received, they were categorized by issue (for example, land resources or water resources), and assigned a category code. Table 1.3–1 in chapter 3 lists the issue categories and corresponding category codes. Similar comments within the same category were then summarized and given a summary code.

Table 1.3–2 identifies the individuals who attended public hearings and how to locate the summaries from those hearings. Commentors interested in locating their comment document and seeing how it was coded can use tables 1.3–3 and 1.3–4. These tables contain a list of all the individuals who submitted comments. Table 1.3–3 consists of a list of the general public who submitted comments. Commentors are listed in last name sequence with their assigned document numbers, and the pages on which their actual comment documents appear. Table 1.3–4 consists of a list of state and local officials and agencies, companies, organizations, or special interest groups that submitted comments. The commentors in table 1.3-4 are listed in alphabetical order with the names of the particular individuals who submitted those documents. For each commentor, the assigned document number and the pages on which their actual comment documents appear are listed.

As discussed in section 1.1, comments were received by mail, fax or telephone. In some instances, multiple duplicate documents were received from a commentor. Footnotes in table 1.3–5 indicate which of those documents submitted are duplicates. As a

result of the multiple submissions, documents were deleted and gaps exist in the numerical sequence for tables 1.3–5 and 1.3–6. In addition, table 1.3–5 lists commentors who submitted documents which were classified as postcards. The postcards were part of mass mailing campaigns conducted by various organizations and special interest groups to express either support or opposition to the Tritium Supply and Recycling Program. Although many postcards were received, only one document scan is shown in chapter 2.

Table 1.3–6 is organized by summary code. Using the appropriate summary code, commentors can use this table to see how many comments were included in each summary. The table also lists the summary page on which the summary and corresponding response appear and the pages on which the actual comment documents appear. Some comment documents presented in chapter 2 consist of multiple pages. The document page number given in tables 1.3–2, 1.3–3, 1.3–4, 1.3–5, and 1.3–6 refers to the first page on which the comment document appears. In some instances, it may be necessary to review the remaining pages of the comment document to view a particular sidebar.

Documents received during the public comment period are shown in chapter 2. A document number code was assigned to each comment document based on the method of submission. Documents that were handed in at public hearings, mailed, or faxed have document numbers beginning with TSR-H, TSR-M, and TSR-F respectively. Some documents were mailed in as part of petitions or mass mailing campaigns and were given document numbers beginning with TSR-PC. Comments that were received over the telephone were transcribed and given document numbers beginning with TSR-P. Other comments received through the electronic bulletin board were downloaded and given document numbers beginning with TSR-E. Finally comments received during the special 21 day comment period (60 FR 44327) were given document numbers beginning with TSR-NM or TSR-NF depending on whether the comment document was mailed or faxed.

1.4 Changes from the Draft Programmatic Environmental Impact Statement

During public review of the Draft PEIS a large number of the comments received regarded concerns that alternatives and/or candidate sites were not given the correct amount of consideration on factors including cost and technical feasibility. Although these concerns made up the majority of the comments, many others involved the resources analyzed, NEPA and regulatory issues, and DOE and Federal policies as they related to the PEIS. The major issues identified by the commentors include the following:

- The electrical requirements of the various alternatives, particularly the APT, and the potential for the ALWR and MHTGR to produce electricity;
- The impacts of the alternatives on groundwater, including the potential for aquifer depletion and contamination and the consideration of the use of treated wastewater for cooling;
- The socioeconomic impacts, both positive and negative, of locating or failing to locate a facility at one of the candidate sites;
- The generation, storage, and disposal of radioactive (including spent nuclear fuel) and hazardous wastes and the associated risks;
- The impacts of the alternatives on human health (both from radiation and hazardous chemicals) and how these risks were determined and evaluated;
- The relationship of this PEIS to other DOE documents and programs, particularly the Waste Management PEIS and the Fissile Materials Disposition Program, and the need to make decisions based on all associated programs and activities concurrently;

- The need for decisions to be based on many different factors, including environmental, cost, and safety concerns;

- The failure of DOE to consider a no tritium or zero stockpile alternative, and the negative national and international implications of building a new tritium supply facility; and

- The need for DOE to consider a commercial reactor alternative in greater detail.

Based upon public comments and a re-evaluation of irradiation services, DOE is now considering both the purchase of a commercial reactor and its conversion for tritium production and the purchase of irradiation services as a reasonable alternative. DOE invited public comments on these issues, in addition to comments on the potential environmental impacts described in section 4.10 of the Draft PEIS in a special 21 day comment period (60 FR 44327). Comments received during this extended comment period are included in this volume. During the extended comment period, there were two major issues of concern raised:

- License and regulatory implications, and

- Non-proliferation concerns.

All of the comments identified above are summarized and responded to in detail in chapter 3 of this volume. Key revisions to the PEIS resulting from public comments are discussed below.

Revisions to the document include additional discussion and analysis in the following areas: severe accidents and design-basis accidents for all tritium supply technologies; site-specific environmental impacts of a dedicated power plant for the Accelerator Production of Tritium (APT); revisions to water resources sections; site-specific analysis of the multipurpose reactor that could produce tritium, burn plutonium as fuel, and produce electricity; and the commercial reactor alternative, specifically the purchase of an existing reactor and the purchase of irradiation services from a commercial reactor, and analysis of producing tritium at an earlier date in order to support a larger stockpile size. Each of these areas will be discussed in more detail below.

Part of the revision to the tritium supply accident analyses addressed a comment requesting that the PEIS determine the impacts to site workers from potential accidents. In response to this comment, sections 4.1.3.9, 4.2.3.9, 4.3.3.9, 4.4.3.9, 4.5.3.9, 4.6.3.9, and appendix E.2 of the Final PEIS have been modified to include a qualitative discussion of impacts to involved workers (workers assigned to the facility and located in close proximity to the facility as a result of the proposed action) and quantitative impacts to noninvolved workers (workers collocated at the site independent of the proposed action). For involved workers, impacts were addressed qualitatively, explaining the significant risk for exposure and fatality and that mitigative features would be provided in the design and operation to minimize worker impacts from accidents.

For the noninvolved worker, the impacts were represented by the exposure of a hypothetical worker at several prescribed distances from the accident (but within the site boundary). These impacts were described in terms of dose (rems), increases in the likelihood of cancer fatalities, and risk of cancer for the maximally exposed noninvolved worker.

Analysis of an Advanced Light Water Reactor (ALWR) design-basis accident was also re-evaluated as a result of public comments questioning the apparent severity and frequency of the accident consequences shown in the Draft PEIS. The apparent severity and frequency of the design-basis accident presented in the Draft PEIS resulted from the selection of a beyond design-basis accident, rather than a design-basis accident, due to a lack of information. The beyond design-basis accident used in the Draft PEIS analysis represented a low-probability event that was not representative of a design-basis accident. Additional analyses were performed to accurately estimate the impacts from a more reasonable design-basis accident and these results have been included in the Final PEIS in sections 4.1.3.9, 4.2.3.9, 4.3.3.9, 4.4.3.9, 4.5.3.9, 4.6.3.9, and appendix F.2.2.3.

The analyses of impacts of severe reactor accidents, located in the Final PEIS sections 4.1.3.9, 4.2.3.9, 4.3.3.9, 4.4.3.9, 4.5.3.9, 4.6.3.9, and appendix F.2.1.3, were revised. Since accident consequences vary greatly depending on the selected accident frequency value, a spectrum of severe accidents with

a range of frequencies was used to perform a more representative analysis for each technology. The resulting impacts presented in this section reflect the probable effects of a set of accidents for each reactor rather than the single accident scenario.

Public comments also suggested that a disparity existed between the reactor and APT accident analyses, thereby creating a bias in favor of the APT. A new accident analysis presented in sections 4.1.3.9, 4.2.3.9, 4.3.3.9, 4.4.3.9, 4.5.3.9, 4.6.3.9, and appendix F.2.1.4 for the APT has a more severe initiating event, a lower frequency, and a higher consequence than the analysis presented in the Draft PEIS. PEIS sections 4.1.3.9, 4.2.3.9, 4.3.3.9, 4.4.3.9, 4.5.3.9, 4.6.3.9, and appendix E.2 have been modified to include a qualitative discussion of impacts to involved workers (workers assigned to the facility and located in close proximity to the facility as a result of the proposed action) and quantitative impacts to noninvolved workers (workers collocated at the site independent of the proposed action).

Another change in the document is a more detailed description of potential impacts of a dedicated power plant for the APT, located in section 4.8.2. The section has been modified to indicate that site-specific impacts for the gas-fired power plant have been included for each site in sections 4.2 through 4.6. The discussion of the site-specific cumulative impacts on land use, air quality, water resources, biotics, socioeconomics, human health, and rail transport, is presented within sections 4.2 through 4.6.

Based on public comments received at the hearings, two revisions were incorporated in the water resources sections for NTS and Pantex. For NTS, section 4.3.2.4 incorporated more accurate recharge rates and information regarding the potential project use of the NTS aquifer to present a more accurate impact on groundwater resources. The new data were utilized to revise section 4.3.3.4 and provide more accurate potential environmental impacts to the NTS aquifer.

For Pantex, section 4.5.2.4 has been modified to include additional information on reclaimed sanitary wastewater sources, the Hollywood Road Wastewater Treatment Plant and the Pantex Plant Wastewater Treatment Plant. Section 4.5.3.4 now includes the projected amount and availability of reclaimed water from each source and the impacts of using reclaimed sanitary wastewater as a source of tritium supply cooling water.

To present a more detailed analysis of the multipurpose reactor option, section 4.8.3 has been revised. Since the multipurpose reactor would use plutonium fuel, an analysis of the construction impacts of a pit disassembly/conversion/mixed-oxide fuel fabrication facility to support a multipurpose ALWR has been incorporated in the site-specific analysis for each of the five candidate sites for the following resources: land use, air emissions, water, and socioeconomics. Impacts of just the pit disassembly/conversion part of the facility is included for the multipurpose Modular High Temperature Gas-Cooled Reactor (MHTGR) since this technology already includes a fuel fabrication component. For the operation of a multipurpose reactor, additional detail regarding the impacts on atmospheric emissions, liquid emissions, water requirements, socioeconomics, human health (for both normal operations and accidents), waste management, and intersite transportation has been included in the site-specific analysis. Construction and operation impacts discussed in section 4.8.3.1 have been incorporated as additional discussion in the site-specific sections (sections 4.2 through 4.6) at the end of each respective resource section for a multipurpose ALWR and MHTGR.

Revisions have also been made in sections 3.4 and 4.10 of the PEIS to provide additional information and analysis on the commercial reactor alternative. Analysis and a discussion of potential impacts has been expanded and included in this PEIS on the alternative of DOE purchasing an existing operating commercial reactor or an incomplete reactor and converting it to production of tritium for defense purposes.

A new section has also been added to the Final PEIS (section 4.11 "Providing Tritium at an Earlier Date"). The new section evaluates the potential impacts of providing tritium at an earlier date, to support a higher stockpile level. The new section was added because a START II treaty has not been ratified.

TABLE 1.3–1.—*Issue Categories*

Category Code	Issue Category
01	Land Resources
02	Site Infrastructure
03	Air Quality and Acoustics
04	Water Resources
04.01	Surface Water
04.02	Groundwater
05	Geology and Soils
06	Biotic Resources
07	Cultural and Paleontological Resources
08	Socioeconomics
09	Intersite Transportation
10	Waste Management
11	Human Health
11.01	Human Health Normal Operations
11.02	Human Health Facility Accidents
12	General/Miscellaneous Environmental
13	Tritium Supply and Recycling Proposal and Alternatives
13.01	Heavy Water Reactor Technology
13.02	Modular High Temperature Gas-Cooled Reactor Technology
13.03	Advanced Light Water Reactor Technology
13.04	Accelerator Production of Tritium Technology
13.05	Idaho National Engineering Laboratories
13.06	Nevada Test Site
13.07	Oak Ridge Reservation
13.08	Pantex Plant
13.09	Savannah River Site
14	Relationship To Other Department of Energy Programs and Activities
15	Public Involvement and Community Relations
16	NEPA Process
17	Regulatory Compliance
18	National Nuclear Weapons Policies
19	Allocation of Federal Funds
20	Support of or Opposition to Department of Energy Policy
21	Storage of Special Nuclear Materials
22	Commercial Reactor Alternative
23	Commercial Irradiation Services

TABLE 1.3–2.—*Index of Attendance at Public Hearings* [Page 1 of 15]

Public Hearing Attendees	Document Page No.
April 5, 1995—Las Vegas, Nevada	
Morning Session	2-1 to 2-6
Aquilina, Nick C., Las Vegas, NV	
Bastian, Thomas, Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Black, Elbert C., Tetra Tech, Inc., Albuquerque, NM	
Begley, Harold, Raytheon Services Nevada, Boulder City, NV	
Brown, John, Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Brown, Mary Lou, International Technology Corporation, Las Vegas, NV	
Buntjer, Roger L., IBEW 357, Las Vegas, NV	
Cates, Glenda, EG&G Energy Measurements, Inc., Las Vegas, NV	
Claborn, Jerry D., International Union of Operating Engineers, Las Vegas, NV	
Clark, Juanita M., Independent American Party, Las Vegas, NV	
Dailey, Charles L., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Davis, Stephen D., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Dix, George D., RSN, Las Vegas, NV	
Douglas, A.C., City of Las Vegas, Las Vegas, NV	
Edwards, Thomas O., EG&G Energy Measurements, Inc., Las Vegas, NV	
Gawthrop, Malu, Jacobs Engineering, Albuquerque, NM	
Hagen, Edward C., EG&G Energy Measurements, Inc., Las Vegas, NV	
Hall, Nancy A., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Hammargren, Lonnie, Lt. Governor, Las Vegas, NV	
Haws, Stephen P., Las Vegas, NV	
Hecht, Charles, Citizen Alert, Las Vegas, NV	
Henning, Robert A., Las Vegas, NV	
Herbst, Emmet L., Holmes & Narver, Las Vegas, NV	
Hofrichter, Peter B., Nye County Nuclear Project Office, Pahrump, NV	
Hughes, George F., EG&G Energy Measurements, Inc., Las Vegas, NV	
Jenisins, Glenn, EG&G Energy Measurements, Inc., Las Vegas, NV	
Jenkins, Glenn T., EG&G Energy Measurements, Inc., Las Vegas, NV	
Keller, Dale, Nevtech Services, Las Vegas, NV	
Kimball, Roy A., Las Vegas, NV	
Lawless, Kevin L., Raytheon Services Nevada, Mercury, NV	
Leedon, Steve, U.S. Department of Energy Operations Office, Las Vegas, NV	
Marelli, Michael A., U.S. Department of Energy, Las Vegas, NV	
Marrs-Smith, Gayle E., Bureau of Land Management, Las Vegas, NV	
McGowan, Thomas J., Las Vegas, NV	
McNeill, Nancy, City of North Las Vegas, North Las Vegas, NV	
McSpadoen, William K., Raytheon, Las Vegas, NV	
Mendenhall, Robin L., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Meyers, Calvin, Moapa Band of Paiutes, Moapa, NV	
Mithyug, Allan D., EG&G Energy Measurements, Inc., North Las Vegas, NV	
Moore, Billy C., PAI, Las Vegas, NV	
Morris, Jeannie, Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Nielsen, Richard A., Citizen Alert, Las Vegas, NV	

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Possidente, William, Las Vegas, NV	
Raines, Kevin T., IUOE Local 12, Las Vegas, NV	
Ramos, Esther M., The Study Committee, Logandale, NV	
Rigg, James L., Las Vegas, NV	
Rogers, Keith A., Las Vegas Review Journal, Las Vegas, NV	
Savage, George D., Las Vegas, NV	
Seidler, Paul E., Rogison/Seidler, Las Vegas, NV	
Silver, Rosa, IT Corp., Las Vegas, NV	
Sims, Stanley H., Nye County Nuclear Waste Project Office, Pahrump, NV	
Smith, Robert A., Raytheon, Las Vegas, NV	
Stewart, Reginald L., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Turturro, Colleen Y., Office of Congressman John Ensign, Las Vegas, NV	
Tussing, Frank, Nevada Test Site Contractors Association, Las Vegas, NV	
Vasconi, William, IBEW Local Union #357, Las Vegas, NV	
Von Winterfeldt, Deltof, OSG, Laguna Beach, CA	
Ward, Bridget G., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Wohletz, Lori A., City of Las Vegas, Las Vegas, NV	
Evening Sessions	2-6 to 2-11
Bailey, Charles S., RSN, Las Vegas, NV	
Barre, Richard, Las Vegas, NV	
Beck, Thelma I., Las Vegas, NV	
Bell, Ezra A., Jr., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Brandon, Regina R., Las Vegas, NV	
Brown, Chris, Campaign for Nevada's Future, Las Vegas, NV	
Brown, John E., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Cardenas, Linda A., IT Corporation, Las Vegas, NV	
Chavez, Gerald E., Las Vegas, NV	
De Leo, Michael A., Plasterers Cement Masons #797, Las Vegas, NV	
DeBerry, Robert D., EG&G Energy Measurements, Inc., Henderson, NV	
Eliason, Glenda, Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Enger, Belinda, Las Vegas, NV	
Enger, Terry, Raytheon Services, Las Vegas, NV	
Evered, I. Erich, Nevada Test Site Contractors Association, Las Vegas, NV	
Fine, Valerie G., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Fisher, John S., SAIC, Las Vegas, NV	
Flangas, William G., Las Vegas, NV	
Fletcher, Donald R., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Fogg, Darreld, Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Formato, Michaelina D., Las Vegas, NV	
Formato, Ralph B., Las Vegas, NV	
Garhardt, Charles H., Las Vegas, NV	
Gelormine, Brian T., Local #135 Insulators, Las Vegas, NV	
Gertz, Carl P., U.S. Department of Energy, Nevada Operations Office, Henderson, NV	

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Gillespie, Glenn, Las Vegas, NV	
Gillespie, Lynnae, Las Vegas, NV	
Giordano, Joseph D., Reynolds Electrical & Engineering Company, Inc., Henderson, NV	
Gonzales, Daniel, Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Goodnough, Gene A., IBEW #357, Las Vegas, NV	
Guymon, Ronald H., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Haygood, Robert F., Las Vegas, NV	
Hickey, Thomas J., Las Vegas, NV	
Hollins, A.C., Raytheon Services, Las Vegas, NV	
Holmes, Terry S., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Ivey, Francis K., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Jewett, William S., Asbestos Workers Local 135, Las Vegas, NV	
Jones, Leslie L., North Las Vegas, NV	
Kerschner, Harrison F., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Kramer, John, Gaithersburg, MD	
Kronsbein, George W., RSN, Boulder City, NV	
Leon, Steve, Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Lindler, Herbert B., Las Vegas, NV	
Lyman, James E., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Lyman, Rhea, Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Maddox, Jackson P., EG&G Energy Measurements, Inc., Las Vegas, NV	
Maul, Norman J., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
McCaffery, Robert, Lt. Governor's Office, Las Vegas, NV	
McCoy, Nira J., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
McEwan, Chad D., Heat & Frost Insulators & Asbestos, Henderson, NV	
McKinney, Paul D., Amargosa Valley, NV	
Metta, Stephen, Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Metzger, Charles G., YMP PMO, Littleton, CO	
Miller, Robert, Raytheon Services Nevada, Mercury, NV	
Molnar, Edward T., Bechtel National Inc., San Francisco, CA	
Myers, Jochen B., Asbestos Workers Local #135, Las Vegas, NV	
Nelums, Jerry C., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Niemirow, Ernest J., Reynolds Electrical & Engineering Company, Inc., North Las Vegas, NV	
Ortego, Paul K., Raytheon Services Nevada, Las Vegas, NV	
Owens, Ronald, Insulators Local #135, Las Vegas, NV	
Phillips, Charles R., Las Vegas, NV	
Phillips, Walter, Raytheon Services, Las Vegas, NV	
Pinter, Rick G., Las Vegas, NV	
Quiroz, George L., Asbestos Workers Local #135, Henderson, NV	
Qureshi, Asad A., RSW, Las Vegas, NV	
Reese, Gary L., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Sandquist, Harold D., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	

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Evening Sessions	2-6 to 2-11
Sasso, Barbara, EG&G Energy Measurements, Inc., Las Vegas, NV	
Sasso, Louis G., EG&G Energy Measurements RSL, Las Vegas, NV	
Schultz, George L., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Skarda, Bill, EG&G Energy Measurements, Inc., Las Vegas, NV	
Skarda, Carey, EG&G Energy Measurements, Inc., Las Vegas, NV	
Sphar, Randal D., Local #135 Insulators and Asbestos Workers, Las Vegas, NV	
Swogger, Tristan I., Asbestos Heat & Frost Local #135, Las Vegas, NV	
Taylor, Maxwell H., North Las Vegas, NV	
Thomas, Coy D., Las Vegas, NV	
Tiesenhausen, Engelbrecht, Clark County, Las Vegas, NV	
Titus, Robert, Las Vegas, NV	
Tuthill, Harry, Raytheon Services, Las Vegas, NV	
Walker, John B., State of Nevada, Carson, NV	
Walker, Larry A., RSN, Las Vegas, NV	
Watson, Edward L., Africans In Favor Yucca Mountain, Las Vegas, NV	
Wegst, Walt, RSN, Las Vegas, NV	
Welums, Jerry C., Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV	
Wildmon, Sean A., Local #135, Las Vegas, NV	
Williams, Danny B., Reynolds Electrical & Engineering Company, Inc., Henderson, NV	
Williams, Lorraine M., Henderson, NV	
Willis, Edwin H., IBEW Local 357, North Las Vegas, NV	
Wojcik, Jeffrey T., Las Vegas, NV	
Wolfley, Roger C., Las Vegas, NV	
Woolslayer, Dodd, IBEW, Las Vegas, NV	
Yowell, Ronald H., Local 12, Henderson, NV	
April 5, 1995—Washington, DC	
Morning Session	2-11 to 2-13
Airozo, Dave, McGraw-Hill, Washington, DC	
Alberstein, David, General Atomics, San Diego, CA	
Clements, Tom, Greenpeace, Washington, DC	
Collina, Tom, ISIS, Washington, DC	
Gilbert, John L., Silver Spring, MD	
Hardwick, Nancy E., VECTRA, Sterling, VA	
Hopkins, Laura J., National Congress of American Indians, Washington, DC	
Marantis, Demetrios J., Akin Gump, Washington, DC	
Monroe, Rober R., Bechtel, Washington, DC	
Roth, David R., Jupiter Corporation, Wheaton, MD	
Stephen, Walter P., Raytheon Engineers & Construction, New York, NY	
Afternoon Session	2-13
Adler, Robert E., Arlington, VA	
Kulynych, George E., Babcock & Wilcox, Lynchburg, VA	
Raivel, Mary S., Argonne National Laboratory, Washington, DC	

TABLE 1.3–2.—*Index of Attendance at Public Hearings* [Page 5 of 15]

Public Hearing Attendees	Document Page No.
April 12, 1995—Pocatello, Idaho	
Morning Session	2-13 to 2-15
Angle, Bruce M., Lockheed Idaho Technologies Corporation, Idaho Falls, ID	
Angstadt, Peter J., City of Pocatello, Pocatello, ID	
Hammond, Chad, Diversified Metal Products, Idaho Falls, ID	
Jahshan, Salim N., Idaho Falls, ID	
Loomis, Brandon D., Post Register, Idaho Falls, ID	
Milan, Georgia A., Pocatello, ID	
Olsen, Kathleen A., Pocatello, ID	
Smith, Terry W., U.S. Department of Energy, Pocatello, ID	
Swanson, Richard W., Argonne National Laboratory, Blackfoot, ID	
Worcester, Stevens J., General Atomics, San Diego, CA	
Whitworth, Lin, Idaho State Senator, District 33, Inrom, ID	
Evening Session	2-15 to 2-17
Allen, Duane S., Laborers International Union, Arco, ID	
Brailsford, Beatrice, Snake River Alliance, Pocatello, ID	
Daly, Katherine R., Pocatello, ID	
Dold, Ann L., Idaho National Engineering Laboratory, Boise, ID	
Eccher, Daniel R., Blackfoot, ID	
Elle, Jean, League of Women Voters, Pocatello, ID	
Fifield, Glade T., Pocatello, ID	
Finger, Dave, KIFI-TV News, Pocatello, ID	
Fullmer, Larry G., Pocatello, ID	
Henry, Mike J., ISU NSPE, Idaho Falls, ID	
Holder, Richard H., Idaho Falls, ID	
Jackson, Timothy B., Idaho State Journal, Pocatello, ID	
Lengyec, Arpad L., Idaho Falls, ID	
Lewis, C. Gordon, Pocatello, ID	
Merriam, Kathryn C., League of Women Voters, Pocatello, ID	
Proksa, Margo, Snake River Alliance, Pocatello, ID	
Shipley, Diana Y., Pocatello, ID	
Stroupe, Elwood, INFL, Idaho Falls, ID	
Sullivan, Walt H., Idaho Falls, ID	
Thomas, Anita M., Pocatello, ID	
Tolman, Joshua B., Idaho State University, Pocatello, ID	
Turner, Roger, Bannock Shoshone Water Quality, Pocatello, ID	
Wade, Marty L., Pocatello, ID	
Wells, Pete C., Pocatello, ID	
Whitlock, Tollan R., Idaho Falls, ID	
April 12, 1995—Oak Ridge, Tennessee	
Morning Session	2-18 to 2-20
Burcy, William D., Oak Ridge, TN	
Campbell, James E., East Tennessee Economic Council, Oak Ridge, TN	
Cator, Richard D., Tennessee Department of Environment & Conservation - DOE Oversight, Oak Ridge, TN	

TABLE 1.3–2.—*Index of Attendance at Public Hearings* [Page 6 of 15]

Public Hearing Attendees	Document Page No.
April 12, 1995—Oak Ridge, Tennessee (Continued)	
Morning Session	2-18 to 2-20
Clark, Brita, Candler, NC	
Delene, Jerry G., Oak Ridge, TN	
Doyle, George M., Oak Ridge, TN	
Fitzgerald, Amy, Oak Ridge Local Oversight Committee, Oak Ridge, TN	
Foster, James, Martin Marietta, Knoxville, TN	
Hutchison, Ralph, Oak Ridge, TN	
Lenhart, Joe, Oak Ridge, TN	
Lenyk, Robert G., Foster Wheeler, Oak Ridge, TN	
McCurdy, Harold C., Oak Ridge, TN	
Miller, Joseph W., Oak Ridge, TN	
Murphy-Rees, Karen I., Analysas Corporation, Knoxville, TN	
Nisley, Steve S., U.S. Department of Energy Oversight Division, Oak Ridge, TN	
Perry, Llewellyn L., Asheville, NC	
Philippone, Richard L., Oak Ridge, TN	
Phillips, P.W., U.S. Department of Energy, Oak Ridge, TN	
Rector, Dale, Tennessee Department of Environment and Conservation, U.S. Department of Energy Oversight, Powell, TN	
Smith, Ben L., Private Consultant, Columbia, TN	
Storms, Robert A., Tennessee Department of Environment and Conservation - DOE Oversight, Oak Ridge, TN	
Vansickle, Ruth E., Candler, NC	
Venkatesan, Padma, Tennessee Department of Environment and Conservation - DOE Oversight, Knoxville, TN	
Williams, Kent A., Oak Ridge National Laboratory, Oak Ridge, TN	
Evening Session	2-20 to 2-22
Bernander, Ken, Oak Ridge, TN	
Gawarecki, Susan L., League of Women Voters - Oak Ridge, Andersonville, TN	
Hedgepeth, David C., Nashville Peace Action, Nashville, TN	
Jolley, Robert B., Tennessee Department of Environment and Conservation - DOE Oversight, Rockwood, TN	
Kubat, Charles H., St. Mary's Church, Oak Ridge, TN	
Packan, Nicolas H., Oak Ridge, TN	
Peelle, Robert W., Oak Ridge, TN	
Phelps, James E., Knoxville, TN	
Scott, Frank, Clinton, TN	
Wike, Eva M., Nashville Davidson County Schools, Oak Ridge, TN	
Wike, James S., Oak Ridge, TN	
April 20, 1995—North Augusta, South Carolina	
Afternoon Session	2-23 to 2-28
Alaimo, Gary, Westinghouse Savannah River Company, Aiken, SC	
Alexander, Jack, Westinghouse Savannah River Company, North Augusta, SC	
Anderson, Angelia, TMO DP WSRS, North Augusta, SC	
Anyike, Lisa M., North Augusta, SC	
Appel, Donald, North Augusta, SC	

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Public Hearing Attendees	Document Page No.
April 20, 1995—North Augusta, South Carolina (Continued)	
Afternoon Session	2-23 to 2-28
Arnold, Edward, Atlanta, GA	
Baggott, James B., Aiken County Council, North Augusta, SC	
Baker, John L., Town of Allendale, Allendale, SC	
Barnes, Robert M., Augusta, GA	
Baynhan, Shannon, Aiken Standard, Aiken, SC	
Bell, David R., North Augusta, SC	
Bell, William E., Citizens for Nuclear Technology Awareness, Aiken, SC	
Black, Danny, Tri-County Alliance, Barnwell, SC	
Blanchard, John P., Georgia Bank & Trust, Groveton, GA	
Blanchard, Thomas M., Blanchard Calhoun, Augusta, SC	
Bloodworth, William A., Augusta College, Augusta, GA	
Boettinger, William L., North Augusta, SC	
Booher, Sam W., Marinez, GA	
Bouknight, Elmer L., North Augusta, SC	
Brantley, Dale, Savannah River Site, Warrenville, SC	
Bridges, Donald N., U.S. Department of Energy, Savannah River Site, North Augusta, SC	
Brizes, William F., Westinghouse Savannah River Company, Aiken, SC	
Brothers, Gerald W., North Augusta, SC	
Brown, Donald R., North Augusta, SC	
Brown, Randy L., Tritium Department, Hephzibah, GA	
Brush, Benjamin J., Brush & Company, Martinez, GA	
Bulfinch, Clyde W., Westinghouse Savannah River Company, Jackson, SC	
Butler, Linda W., Trust Company Bank, Augusta, GA	
Butler, Michael, Columbia, SC	
Byrd, Helen M., Trotter Realty, North Augusta, SC	
Carswell, Thomas, Augusta, GA	
Casey, Joel E., North Augusta, SC	
Chalmers, Patricia, Trotter Realty, North Augusta, SC	
Christos, Chris, Westinghouse Savannah River Company, Augusta, GA	
Ciravolo, Thomas G., Aiken, SC	
Clemmens, John P., Stone & Webster, Aiken, SC	
Collins, Cecil L., Sr., North Augusta, SC	
Connelly, Lawrence E., Du Pont SRP, North Augusta, SC	
Costner, Brian, Energy Research Foundation, Columbia, SC	
Craig, Mickey W., Westinghouse Savannah River Company, Blackville, SC	
Craig, Norman E., RTFP, Aiken, SC	
Cribb, Sharon, West Columbia, SC	
Cront, Oliver S., North Augusta, SC	
Crossland, Steve C., Westinghouse Savannah River Company, Aiken, SC	
Daniel, Warren A., Metro Augusta Chamber of Commerce, Augusta, GA	
Davison, Fred C., Augusta, GA	
Derr, Stephen M., Aiken, SC	
Dominguez, Tonya C., Westinghouse Savannah River Company, North Augusta, SC	

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Public Hearing Attendees	Document Page No.
April 20, 1995—North Augusta, South Carolina (Continued)	
Afternoon Session	2-23 to 2-28
Dorr, Patrick, Westinghouse Savannah River Company, Graniteville, SC	
Dowser, Edward C., North Augusta, SC	
Dunn, Moses, Union 1137 Laborer, Augusta, GA	
Edward, Floyd E., Local Union 1137, Groveton, GA	
Ellis, James K., Jackson, SC	
Fennig, Diane M., Augusta College, Augusta, GA	
Fiery, Frank C., Augusta, GA	
Finch, Pat, Augusta Symphony, Inc., Augusta, GA	
Flowers, John B., III, Augusta College, Augusta, GA	
Fowke, James G., North Augusta, SC	
Franke, William F., Jr., Augusta, GA	
Franklin, Tracey, Westinghouse Savannah River Company, North Augusta, SC	
Freeman, Robert N., Augusta College, Martinez, GA	
Girard, Guy A., Office of Congressman Charlie Norwood, Washington, DC	
Goley, Julie M., Augusta College, North Augusta, SC	
Gray, Peter L., Westinghouse Savannah River Company, Aiken, SC	
Grimm, Edwin, Aiken, SC	
Gurosik, Clyde, Berry Plantation, Inc., North Augusta, SC	
Hadden, Arthur E., Jackson, SC	
Hale, Kenneth, Westinghouse Savannah River Company, Aiken, SC	
Hallman, Thomas L., Aiken Chamber of Commerce, Aiken, SC	
Harley, William S., North Augusta, SC	
Hass, Robert A., Sonalysts, Inc., Aiken, SC	
Hayes, James D., Westinghouse Savannah River Company, Barnwell, SC	
Hills, Warren, LIUNA, Augusta, GA	
Holmes, Frank W., North Augusta, SC	
Hourihan, Michael S., Tritium Engineering, Aiken, SC	
House, Elizabeth, Augusta College, North Augusta, SC	
Jackson, Mike, Westinghouse Savannah River Company, Aiken, SC	
Johnson, Tom A., Westinghouse Savannah River Company, Aiken, SC	
Karam, Ratib A., Georgia Institute of Technology, Atlanta, GA	
Killian, Gerald W., Westinghouse Savannah River Company, Aiken, SC	
King, Franklin D., FDK Consultants, Aiken, SC	
Loadholt, Anna G., Barnwell County Council, Barnwell, SC	
Long, Franklin A., Westinghouse Savannah River Company, North Augusta, SC	
Long, Robert D., Economic Development Partnership, Aiken, SC	
Losey, David, Aiken, SC	
Mack, William C., RCO, North Augusta, SC	
Maher, Robert, Westinghouse Savannah River Company, North Augusta, SC	
Manley, Anthony, Westinghouse Savannah River Company, North Augusta, SC	
Mayson, William P., Augusta, GA	
McCullough, Brian R., Bechtel, Aiken, SC	
McDowell, Ken, Halocarbon, North Augusta, SC	

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Public Hearing Attendees	Document Page No.
April 20, 1995—North Augusta, South Carolina (Continued)	
Afternoon Session	2-23 to 2-28
Messack, Susanne C., Aiken, SC	
Meyer, Jeff, Evans, GA	
Mitchell, John T., Bechtel National, Inc., San Francisco, CA	
Monahan, John J., North Augusta, SC	
Neary, Michael, Athens, GA	
New, Steven L., BSRI, North Augusta, SC	
Oruch, Tobin, Savannah River Site, Augusta, GA	
Osteen, H.M., Augusta, GA	
Palaniswamy, Ranga, E&CSD SRS, Evans, GA	
Parker, Lane D., IUOG Local 410, Aiken, SC	
Partlow, Beth, Governors Office, Columbia, SC	
Pedde, Robert A., Martinez, GA	
Pennington, Gregg, Jacobs Engineering, Martinez, GA	
Platt, Wendell J., Westinghouse Savannah River Company, Denmark, SC	
Rice, Janice W., Westinghouse Savannah River Company, Martinez, GA	
Robinson, Ricky D., North Augusta, SC	
Rowan, Paul, Savannah River Site, Augusta, GA	
Schappell, John M., Westinghouse Savannah River Company, North Augusta, SC	
Schroder, Ronald, Williston, SC	
Scott, James A., Westinghouse Savannah River Company, Aiken, SC	
Scott, John R., Martinez, GA	
Sessions, Jill, Westinghouse Savannah River Company, Evans, GA	
Shelton, Chris, Westinghouse Savannah River Company, Aiken, SC	
Smith, Robert A., Westinghouse Savannah River Company, Aiken, SC	
Sommer, Tom W., Augusta Technical Institute, Augusta, GA	
Stanley, Gary W., Aiken, SC	
Steedley, Mark E., Westinghouse Savannah River Company, Belvedere, SC	
Steeman, Cornelius M., Change Management Solutions, Aiken, SC	
Stevenson, Edward R., Allendale Town Council, Allendale, SC	
Still, James R., Barnwell, SC	
Sullivan, Richard S., Westinghouse Savannah River Company, Aiken, SC	
Tanner, William G., BSRI, Martinez, GA	
Tewkesbury, Rene A., Office of Congressman Lindsey Graham, Aiken, SC	
Thomas, Franklin B., III, Martinez, GA	
Thompson, Charles B., First Union National Bank, Appling, GA	
Threatt, Lorena H., First Union National Bank, Appling, GA	
Till, William B., Orangeburg, SC	
Toole, William R., City of Augusta, Augusta, GA	
Tripp, Lowell E., U.S. Department of Energy, Aiken, SC	
Tyrrell, Mark A., North Augusta, SC	
Villemain, Milton W., North Augusta, SC	
Walker, John, Aiken Chamber of Commerce, Aiken, SC	
Washington, Sheryl, Westinghouse Savannah River Company, Blackville, SC	

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Public Hearing Attendees	Document Page No.
April 20, 1995—North Augusta, South Carolina (Continued)	
Afternoon Session	2-23 to 2-28
Weiss, William R., Rust Environment & Infrastructure, Aiken, SC	
Wheeler, Victor, Westinghouse Savannah River Company, Aiken, SC	
Widener, George M., Town of Williston, Williston, SC	
Widener, Jackson K., Augusta College, Augusta, GA	
Wilder, Joseph B., Barnwell, SC	
Wilhelm, Doug, Aiken, SC	
Wilson, W. Bruce, U.S. Department of Energy, North Augusta, SC	
Wolfe, Clinton R., Aiken, SC	
Wood, Keith R., Westinghouse Savannah River Company, Aiken, SC	
Yates, Sandra B., Trotter Realty, North Augusta, SC	
Yort, Bennett A., First Union National Bank, Augusta, GA	
Evening Session	2-28 to 2-31
Abbott, Tom E., Aiken Small Business - Chamber, Aiken, SC	
Abell, Gary E., Evans, GA	
Arenson, Joel A., North Augusta, SC	
Attig, Sandra W., Consul Court Property Management, North Augusta, SC	
Babineau, Linda W., Aiken, SC	
Babineau, William R., Westinghouse Savannah River Company, Aiken, SC	
Baladi, Jean Y., Westinghouse Savannah River Company, North Augusta, SC	
Baura, Shane, Site Training, Martinez, GA	
Benjamin, Richard W., Westinghouse Savannah River Company, North Augusta, SC	
Bigwell, Dale T., North Augusta, SC	
Boyd, Richard W., U.S. Department of Energy, North Augusta, SC	
Britt, Russel N., Operating Engineers Local 470, North Augusta, SC	
Brown, Lance T., Martinez, GA	
Burckhalyer, Joe T., Westinghouse Savannah River Company, North Augusta, SC	
Bursey, Brett A., Natural Guard, Columbia, SC	
Butterworth, Robert R., North Augusta City, North Augusta, SC	
Campbell, Ronald M., Westinghouse Savannah River Company, Aiken, SC	
Cantwell, John W., Aiken, SC	
Cloninger, J. Mark, Aiken, SC	
Collinan, Ralph F., Aiken, SC	
Cooper, Kenneth F., Augusta, GA	
Corbett, Stanley W., Bechtel Savannah River, Inc., Aiken, SC	
Corcoran, Patrick J., Bechtel Savannah River, Inc., Augusta, GA	
Cornell, Veronica P., U.S. Energy Corporation, Aiken, SC	
Cox, George D., Westinghouse Savannah River Company, Warrenville, SC	
Czerwinski, John R., Westinghouse Savannah River Company, Aiken, SC	
Czerwinski, Maggie E., Aiken, SC	
Davis, Robert M., Lenoir City, TN	
DeLoach, Charlotte B., First Union, Augusta, GA	
Drutel, Emily M., BSRI, North Augusta, GA	
Erwin, William D., Westinghouse Savannah River Company, Aiken, SC	

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Public Hearing Attendees	Document Page No.
April 20, 1995—North Augusta, South Carolina (Continued)	
Evening Session	2-28 to 2-31
Eubanks, James C., Warrenville, SC	
Ferrara, Russ, Aiken, SC	
Geary, Leo C., Westinghouse Savannah River Company, Augusta, GA	
Geddes, Richard L., North Augusta, SC	
Ghosh, Indrajit K., Evands, GA	
Gould, Thomas H., Westinghouse Savannah River Company, Aiken, SC	
Grove, Dennie E., Martinez, GA	
Hardigree, Charles I., North Augusta, SC	
Harrington, Cathy G., Westinghouse Savannah River Company, North Augusta, SC	
Harrington, Timothy D., Westinghouse Savannah River Company, North Augusta, SC	
Harrison, James L., Evans, GA	
Marty, Westinghouse Savannah River Company, Trenton, SC	
Hayes, Dennis L., North Augusta, SC	
Hofstetter, Kenneth J., American Nuclear Society, Aiken, SC	
Holder, Jeffrey S., Westinghouse Savannah River Company, Martinez, GA	
Hooks, Donavon, North Augusta, GA	
Hughes, Joe P., Bechtel, Aiken, SC	
Hunter, Al W., Westinghouse Savannah River Company, Aiken, SC	
Hyatt, Charles E., Westinghouse Savannah River Company, Lexington, SC	
Johnson, Carl V., North Augusta, SC	
Johnson, Christy, Springfield Custom Homes, Inc., Martinez, GA	
Johnson, Gary M., Aiken, SC	
Johnson, Gwin J., Relmax Masters & Springfield, Martinez, GA	
Johnson, Marsha V., Aiken, SC	
Johnston, Susan C., Metro Augusta Chamber of Commerce Board of Directors, Augusta, GA	
Kelley, Asa C., Trenton, SC	
Kinard, Neeley, Westinghouse Savannah River Company, Aiken, SC	
Knotts, Ronald E., Sr., Williston, SC	
Lance, Susan E., North Augusta, SC	
Lanier, Clayton M., BSRI Construction, Martinez, GA	
Latta, Larry G., Westinghouse Savannah River Company, Graniteville, SC	
Latta, Susan M., SAIC, Graniteville, SC	
Lemon, Edward, City of Barnwell City Council, Barnwell, SC	
Lindholm, Mark A., Westinghouse Savannah River Company, North Augusta, SC	
Marberry, Marion H., Martinez, GA	
Maryak, Matthew E., Westinghouse Savannah River Company, Martinez, GA	
Maxted, Anthony, BNFL, Aiken, SC	
McDonnell, William R., Westinghouse Savannah River Company, Aiken, SC	
McGahee, Berny, Martinez, GA	
McGee, Timothy S., Martinez, GA	
Mikol, David A., North Augusta, SC	
Miller, Charles F., Aiken, SC	
Minnick, Robert L., Westinghouse Savannah River Company, Evans, GA	

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Public Hearing Attendees	Document Page No.
April 20, 1995—North Augusta, South Carolina (Continued)	
Evening Session	2-28 to 2-31
Moore, Robert L., North Augusta, SC	
Moyer, Murray T., Graniteville, SC	
Murphy, Charles E., Aiken, SC	
Myers, Lynn B., Westinghouse Savannah River Company, Aiken, SC	
Myler, Charles H., Westinghouse Savannah River Company, Evans, GA	
Nord, Robert U., BSRI, Martinez, GA	
Osbon, Julian W., Osbon Medical Systems, Augusta, GA	
Osbon, Libby S., Martinez, GA	
Patterson, John R., Aiken, SC	
Paulus, Gerald M., Augusta, GA	
Paveglio, John W., BNFL, Inc., Aiken, SC	
Poe, William Lee, Aiken, SC	
Posey, Charles L., Warrenville, SC	
Powell, Warren F., Jr., North Augusta, SC	
Rapp, Robert E., Westinghouse Savannah River Company, Aiken, SC	
Rathbun, Roy W., Westinghouse Savannah River Company, North Augusta, SC	
Rathbun, Sharon S., Westinghouse Savannah River Company, North Augusta, SC	
Raymond, Bruce, Westinghouse Savannah River Company, Evans, GA	
Rice, Clifton W., Martinez, GA	
Rivard, Caroline E., Physicians for Social Responsibility, Atlanta, GA	
Rogers, Bernice C., Aiken, SC	
Russell, Edward R., Evans, GA	
Sakoal, Benjamin F., First Union Bank, Hephzibah, GA	
Schmitz, Mark A., Westinghouse Savannah River Company, Martinez, GA	
Sessions, Kevin, Westinghouse Savannah River Company, Evans, GA	
Shah, Mike, Evans, GA	
Sharma, Vimay C., North Augusta, SC	
Shete, Sham K., Martinez, GA	
Simkins, Bryan, Trotter Realty Company, Augusta, GA	
Sipp, Peter F., Hephzibah, GA	
Smetana, Andrew O., Augusta, SC	
Smith, Ronald B., Westinghouse Savannah River Company, North Augusta, SC	
Snyder, Jay S., Jackson, SC	
Sossman, Carl L., Aiken, SC	
Striker, Gene A., Westinghouse Savannah River Company, Martinez, GA	
Tansky, Richard R., Westinghouse Savannah River Company, Aiken, SC	
Taylor, Frank, Westinghouse Savannah River Company, Aiken, SC	
Temple, Paulette S., Augusta, GA	
Temple, Ralph D., Augusta, GA	
Tharin, Low S., BSRI, North Augusta, SC	
Thompson, Eric P., Lower Savannah Council of Governments, Aiken, SC	
Tisaranni, Jim, Community, Aiken, SC	
Toole, Mary L., Belvedere, SC	

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April 20, 1995—North Augusta, South Carolina (Continued)	
Evening Session	2-28 to 2-31
Travis, John H., North Augusta, SC	
Travis, Peggy, North Augusta, SC	
Treadway, Kathryn, Westinghouse Savannah River Company, Aiken, SC	
Trotter, John D., Trotter Builders, Inc., Augusta, GA	
Varn, David W., North Augusta, SC	
Walker, Robert L., Martinez, GA	
Walker, Ronald E., Bechtel Savannah River, Inc., Augusta, GA	
Walling, Dewey M., Aiken, SC	
Walling, Elaine S., Aiken, SC	
Ware, William F., Westinghouse Savannah River Company, Augusta, GA	
Warren, Wilson W., Bechtel, Jesup, GA	
Weiler, Robert J., Babcock & Wilcox, Charlotte, NC	
Whitaker, Matthew L., Consul Court Property Management, North Augusta, SC	
Wilson, Frank G., Thompson, GA	
Wolff, Mark F., North Augusta, SC	
Wong, James W., Westinghouse Savannah River Company, North Augusta, SC	
Wong, Lorilyn S., Schwartz Business Furniture, North Augusta, SC	
Yanek, Joseph R., Westinghouse Savannah River Company, Aiken, SC	
April 20, 1995—Amarillo, Texas	
Afternoon Session	2-31 to 2-37
Avara, Ev, Tetra Tech, Inc., Amarillo, TX	
Banner, Edwin C., Battelle Pantex, Amarillo, TX	
Belisle, Mavis, Peace Farm, Panhandle, TX	
Black, Cecil, Tetra Tech, Inc., Albuquerque, NM	
Clemens, Carlton F., Carlton Clemens Realtor, Amarillo, TX	
Coffee, Doug, Pampa, TX	
Coffey, Dan, City of Amarillo, Amarillo, TX	
Dalton, Pat, Mason & Hanger - Silas Mason Co., Inc., Amarillo, TX	
Daniel, Louise, Pantex Plant Citizen Advisory Board, Amarillo, TX	
Darrow, Gordon R., Amarillo, TX	
Dewey, Amy E., Senator Teel Bivins Office, Amarillo, TX	
Emeny, Mary T., Bushland, TX	
Erben, Randall H., Panhandle 2000, Austin, TX	
Everline, Chester J., La Jolla, CA	
Forsythe, Larry, LAMB Associates, Inc., Amarillo, TX	
George, Frank W., Jr., Metal Trades Council, Amarillo, TX	
Green, Donald L., Plumbers & Pipefitters Local Union #196, Amarillo, TX	
Halliday, Thomas, Amarillo, TX	
Heim, David L., DLH & Associates, Amarillo, TX	
Honea, Joe H., Battelle Pantex, Amarillo, TX	
Hood, Jean C., Amarillo, TX	
Hood, Odie A., Amarillo, TX	
Jeans, Carl E., Southwest Public Service, Amarillo, TX	

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Public Hearing Attendees	Document Page No.
April 20, 1995—Amarillo, Texas (Continued)	
Afternoon Session	2-31 to 2-37
Johnson, Harry P., Mason & Hanger, Fritch, TX	
Kearney, Michael J., Roy F. Weston, Inc., Albuquerque, NM	
Kelley, Calista L., Amarillo, TX	
King, Henry H., Amarillo, TX	
Madden, Wales, Jr., Panhandle 2000, Amarillo, TX	
Martilletti, Joseph, Texas Department of Health, Austin, TX	
Martin, Michael A., Southwestern Public Service, Amarillo, TX	
Massingill, Harry, III, Radioactive Waste Dump Environmental Action League, Austin, TX	
McBride, Jim, Amarillo Globe-News, Amarillo, TX	
Neri Zagal, Rebecca, Weston, Albuquerque, NM	
Neusch, Trish, Panhandle, TX	
Patterson, Tom, Amarillo Chamber of Commerce, Amarillo, TX	
Petraglia, Jeff, Tetra Tech, Inc., Amarillo, TX	
Pollet, John, Holmes & Narver, Inc., Orange, CA	
Pratt, Cary, Mason & Hanger, Claude, TX	
Price, Denise C., Amarillo Association of Realtors, Amarillo, TX	
Raffkind, George, Amarillo, TX	
Roulston, Robert K., Amarillo, TX	
Saunders, Guyon, Amarillo, TX	
Seewald, William H., Amarillo, TX	
Sell, George, First Bank Southwest, Amarillo, TX	
Smith, Doris, PANAL, Panhandle, TX	
Tucker, Tracy C., STAND of Amarillo, Amarillo, TX	
Vonmetzer, Garet, Globe News, Amarillo, TX	
Wilks, David M., Southwestern Public Service, Amarillo, TX	
Williams, C.E., Panhandle Ground Water, White Deer, TX	
Witcher, David, Borger Economic Development Corporation, Borger, TX	
Evening Session	2-37 to 2-40
Barber, Danelle S., U.S. Representative Larry Combes, Amarillo, TX	
Bass, Robert L., Chamber of Commerce, Amarillo, TX	
Beleic, Sharon M., Mason & Hanger, Amarillo, TX	
Berman, Herbert S., Amarillo, TX	
Blakley, John F., Jr., Amarillo, TX	
Bourn, Michael R., Amarillo Economic Development Corporation, Amarillo, TX	
Bowman, W.A., Pantex Plant, Amarillo, TX	
Brown, Michelle F., Battelle Pantex, Canyon, TX	
Bryant, Fred C., Lubbock, TX	
Cantwell, James C., Battelle Pantex, Amarillo, TX	
Creeden, Daniel, Amarillo, TX	
Creeden, Guwan H., Amarillo, TX	
Criste, Tamara A., Battelle Pantex, Amarillo, TX	
Dabney, Henry O., Amarillo, TX	

TABLE 1.3–2.—*Index of Attendance at Public Hearings* [Page 15 of 15]

Public Hearing Attendees	Document Page No.
April 20, 1995—Amarillo, Texas (Continued)	
Evening Session	2-37 to 2-39
Dabney, Martha R., Amarillo, TX	
Dalton, Don D., Amarillo, TX	
Deaver, Boyd E., Texas Natural Resource Conservation Committee, Amarillo, TX	
DeLoach, Jay A., Defense Nuclear Facility Safety Board, Amarillo, TX	
Edmondson, Richard, State of Texas, Amarillo, TX	
Enge, Roby D., Amarillo, TX	
Fairrow, Nannette L., Pantex Plant, Amarillo, TX	
Ferguson, Sandra A., Amarillo, TX	
Gattis, Beverly E., STAND of Amarillo, Amarillo, TX	
Glasscock, Denis J., Amarillo, TX	
Hills, Charles R., Pantex Plant, Amarillo, TX	
Jones, Bradley B., Texas Natural Resources Commission, Amarillo, TX	
Keener, Carla, Hereford, TX	
King, Carl L., Texas Corn Growers, Dimmitt, TX	
Luce, James K., M.D., Harrington Regional Medical, Amarillo, TX	
MacLiver, Jadine L., KFDA-TV, Amarillo, TX	
Massie, Pam R., Mason & Hanger, Amarillo, TX	
McKee, Mike T., Microase, Amarillo, TX	
Medina, Socorro M., Pantex Plant Citizen Advisory Board, Amarillo, TX	
Moore, Don L., Mason & Hanger, Amarillo, TX	
Mousey, William E., Amarillo, TX	
Osborne, Jim W., and Jeri R., Panhandle, TX	
Padilla, Patrick A., Amarillo, TX	
Paul, George E., Amarillo, TX	
Price, Carolyn B., Amarillo, TX	
Scott, Dick, Amarillo, TX	
Strickland, Stacey J., Sonalysis, Inc., Amarillo, TX	
Vance, Eddy, Texas Natural Resource Conservation Council, Amarillo, TX	
Von Eschen, Robert L., Mason & Hanger, Amarillo, TX	
Walterman, Tony, Amarillo, TX	
Willhite, Martin B., Mason & Hanger, Amarillo, TX	
Williams, Gary E., Amarillo, TX	
Willis, Estella, Borger, TX	
Woltermann, Howard A., Mason & Hanger, Amarillo, TX	

TABLE 1.3–3.—*Index of Commentors, Private Individuals* [Page 1 of 9]

Commentor Information	Document Number	Document Page Number
Aaromar, Gary L., Evans, GA	TSR-PC-004	2-367
Aaron, James, SC	TSR-PC-004	2-367
Adams, Susan, Kennison, GA	TSR-P-004	2-311
Albright, Galen, Indian Springs, NV	TSR-P-019	2-319
Alexander, George J. Jr., North Augusta, SC	TSR-P-086	2-356
Anderson, Carl N., Oakland, CA	TSR-NM-025	2-389
Aquilina, Charles	TSR-F-006	2-43
Baker, R.W., Aiken, SC	TSR-PC-004	2-367
Baggett, George, Kansas City, MO	TSR-NM-018	2-385
Banks, Bobbie Wrenn, Decatur, Georgia	TSR-NM-032	2-400
Barre, Richard, Las Vegas, NV	TSR-M-028	2-154
Bedenbaugh, E. Todd, Barnwell, SC	TSR-PC-004	2-367
Beers, Frank T., III, P.E., Mercury, NV	TSR-M-022	2-147
Bell, Mary Lynn, Muleshoe, TX	TSR-M-127	2-239
Belzer, Frederick F., Attorney at Law, Pocatello, ID	TSR-M-111	2-217
Bennett, Gordon C., Paoli, PA	TSR-M-115	2-232
Bieber, Charles R., Clinton, TN	TSR-M-034	2-157
Bill, SC	TSR-H-015	2-117
Birkenfeld, Darryl, Rev., Hereford, TX	TSR-M-176	2-301
Blankenship, J.K., Aiken, SC	TSR-PC-004	2-367
Bohlander, Merle, Pampa, TX	TSR-NM-008	2-375
Bolt, Barbara J.	TSR-PC-006	2-367
Bonwitt, Hilton Head Island, SC	TSR-P-013	2-317
Booher, Sam, Augusta, GA	TSR-M-141	2-263
Bossie, Robert, SCD, Chicago, IL	TSR-PC-008	2-368
Boyles, Boise, ID	TSR-P-033	2-327
Brashears, Wilford S., Amarillo, TX	TSR-PC-002	2-361
Brinkley, Ernest, Jackson, SC	TSR-PC-004	2-367
Brotche, Martinez, GA	TSR-P-057	2-339
Brown, Brian L., Amarillo, TX	TSR-PC-002	2-361
Brown, Chris, Las Vegas, NV	TSR-M-027	2-153
Burch, William D., Oak Ridge, TN	TSR-M-168	2-290
Burns, Laura W.	TSR-PC-004	2-367
Burns, Thomas J., Kingsport, TN	TSR-M-036	2-158
Butler, Jacqueline, Ph.D., Nashville, TN	TSR-M-011	2-141
Cain, Tucker, GA	TSR-P-001	2-309
Cantrill, Judie, Pocatello, ID	TSR-P-048	2-334
Caratew, Helen, Long Island, NY	TSR-P-064	2-342
Carey, Anne, Nashville, TN	TSR-M-088	2-193
Carroll, Earl R., Graniteville, SC	TSR-PC-004	2-367
Caten, Randy, Martinez, GA	TSR-P-063	2-342
Charless, Addis, Jr., Panhandle, TX	TSR-PC-008	2-368
	TSR-M-104	2-213
Chiquoine, Isabel K., Clinton, NY	TSR-M-051	2-167
	TSR-NM-001	2-371

TABLE 1.3–3.—*Index of Commentors, Private Individuals* [Page 2 of 9]

Commentor Information	Document Number	Document Page Number
	TSR-M-007[a]	
Chumley, Emily W.	TSR-PC-006	2-367
Church, John P., Ph.D., P.E., Aiken, SC	TSR-NM-009	2-375
Clark, Patricia, Boise, ID	TSR-M-055	2-170
	TSR-P-049[a]	
Cloud, Barbara A., Nashville, TN	TSR-M-066	2-181
Coffee, Douglas, Pampa, TX	TSR-PC-008	2-368
Collins, Cecil L. Jr., North Augusta, SC	TSR-H-023	2-122
Congdon, Lois M., Decatur, GA	TSR-NM-004	2-373
Connelley, R. L., North Augusta, SC	TSR-PC-004	2-367
Cook, Augusta, GA	TSR-P-059	2-340
Cooper, Robert O., Dallas, TX	TSR-P-084	2-354
Cooperrider, Verne, Salem, OR	TSR-M-145	2-270
Corgatelli, Clint, Pocatello, ID	TSR-P-042	2-331
Cottrell, J. Marc, Meade, KS	TSR-PC-008	2-368
Creech, Tommy, Barnwell, SC	TSR-PC-004	2-367
Cribbs, Sharon, W., Jackson, SC	TSR-P-058	2-339
Criste, Tamara, Amarillo, TX	TSR-H-042	2-135
Cullinan, Ralph F., Aiken, SC	TSR-H-003	2-110
Davies, Brenda, Brookline, MA	TSR-PC-011	2-369
Day, Elizabeth A., Norton, MA	TSR-PC-011	2-369
Debow, Brad, Pocatello, ID	TSR-P-009	2-313
Deemer, Philip, Citrus Heights, CA	TSR-PC-008	2-368
Denton, Charles R., Manchester, NH	TSR-M-108	2-215
	TSR-P-069	2-345
Derr, Robert, Newtonville, MA	TSR-PC-011	2-369
Detwiler, Winifred, Sacramento, CA	TSR-M-001	2-136
Dickson, Howard, Las Vegas, NV	TSR-M-087	2-192
Dilley, Leslie, Hailey, ID	TSR-P-052	2-335
Dix, George, NV	TSR-M-023	2-148
Doherty, John F., J.D., Providence, RI	TSR-M-165	2-280
	TSR-M-161[a] TSR-NM-026	2-391
Donivan, Patrick, McCall, ID	TSR-P-039	2-330
Donnelly, Dennis, Pocatello, ID	TSR-M-164	2-280
Dowds, James, Mt. Pleasant, SC	TSR-P-055	2-337
Draght, Edward A.	TSR-PC-006	2-367
Driebe, Norma M., Atlanta, GA	TSR-P-003	2-310
DuBose, R. Gregory	TSR-PC-006	2-367
Duke, J., Austin, TX	TSR-PC-008	2-368
Dulany, Susan S., Savannah, GA	TSR-M-096	2-207
Duncan, Dorothy, Canyon, TX	TSR-PC-008	2-368
Dunn, James W., Amarillo, TX	TSR-M-151	2-273
Dykes, D.M., North Augusta, SC	TSR-M-160	2-278

TABLE 1.3–3.—*Index of Commentors, Private Individuals* [Page 3 of 9]

Commentor Information	Document Number	Document Page Number
Edmundson, Vera, Aiken, SC	TSR-PC-004	2-367
Edwards, Douglas D.	TSR-PC-006	2-367
Everett, Dan, Athens, GA	TSR-NM-019	2-386
Edwards, Ira W.	TSR-PC-006	2-367
English, Billy, Martinez, GA	TSR-PC-004	2-367
English, Henry L., Jr., Augusta, GA	TSR-PC-004	2-367
Eubanks, Carnell, Warrenville, SC	TSR-M-092	2-198
Ewald, Linda, Knoxville, TN	TSR-M-009	2-139
Exner, Greg, NV	TSR-P-028	2-324
Fanning, Genery S., Pahrump, NV	TSR-F-002	2-41
	TSR-M-018[a]	
Fanning, Theodore R., Pahrump, NV	TSR-M-017	2-145
Farrer, Heather, Graniteville, SC	TSR-PC-004	2-367
Fitzmaurice, Anne, Berkeley, CA	TSR-M-163	2-279
Flangas, William G., Las Vegas, NV	TSR-M-050	2-166
	TSR-F-007[a]	
Foster, Boyd, Hereford, TX	TSR-PC-008	2-368
Fowke, James G., P.E., North Augusta, SC	TSR-M-070	2-183
	TSR-M-072	2-184
Fowler, Stephen H.	TSR-PC-006	2-367
Frederick, Helen P., Decatur, GA	TSR-P-006	2-312
Freeman, Annie, Summertown, TN	TSR-M-059	2-172
Friemel-Gerber, Joyce M., Amarillo, TX	TSR-M-177	2-301
Friscoe, Ruth C., Atlanta, GA	TSR-P-002	2-310
Fuson, Nelson, Nashville, TN	TSR-M-019	2-146
Garrison, Bonnie, North Augusta, SC	TSR-P-060	2-340
Garrison, Verna, North Augusta, SC	TSR-F-009	2-44
Garrow, Bruce W., Aiken, SC	TSR-P-070	2-345
Gautt, John, Leesville, SC	TSR-PC-004	2-367
Geddes, Richard L., North Augusta, GA	TSR-H-025	2-124
	TSR-H-026	2-124
Glaccum, Ellen R., Ketchum, ID	TSR-P-008	2-313
Glidden, William M., Augusta, GA	TSR-PC-004	2-367
Golding, Bert, Houston, TX	TSR-PC-008	2-368
Goodwin, Stan	TSR-PC-004	2-367
Gould, M., Milwaukee, WI	TSR-M-105	2-214
Gouldthorpe, James, Idaho Falls, ID	TSR-P-044	2-332
Grant, Bill W.	TSR-PC-006	2-367
Gray, Allyson, Newton, MA	TSR-PC-011	2-369
Gray, Peter L., Aiken, SC	TSR-H-013	2-116
Green, D.W.	TSR-PC-006	2-367
Greenaway, Donna J.	TSR-PC-006	2-367
Griffin, Lana K.	TSR-PC-004	2-367
Grimm, Frederick M., Jr., North Augusta, SC	TSR-PC-004	2-367

TABLE 1.3–3.—*Index of Commentors, Private Individuals* [Page 4 of 9]

Commentor Information	Document Number	Document Page Number
Guffer, Michael P., Aiken, SC	TSR-PC-006	2-367
Guilbeau, Marcelle, Nashville, TN	TSR-P-031	2-326
Hafer, Mark C., Esq., Las Vegas, NV	TSR-NM-010	2-377
Hammond, Lisa Johnson, Victor, ID	TSR-M-107	2-215
Hanna, Jonathan S.	TSR-PC-006	2-367
Hardigree, Charles I., North Augusta, SC	TSR-F-012	2-45
Harris, Henry, Wagner, SC	TSR-P-056	2-338
Harrison, Larry, Evans, GA	TSR-P-078	2-349
Hasting, Ann	TSR-PC-006	2-367
Hauer, Kathryn, Aiken, SC	TSR-PC-006	2-367
Heckler, Hilde, Pocatello, ID	TSR-H-001	2-109
Helms, Kathy, Nashville, TN	TSR-NM-015	2-384
Hepler, J. S., Whitleyville, TN	TSR-M-122	2-238
Herbert, Patricia, Seattle, WA	TSR-M-171	2-295
Herrin, Patricia A., Henderson, NV	TSR-M-013	2-142
Herring, Sherry	TSR-PC-006	2-367
Heuer, Marilyn	TSR-PC-006	2-367
Hime, Brentwood, TN	TSR-P-076	2-348
Hitchler, Mike, North Augusta, SC	TSR-H-018	2-119
Hoefer, Elizabeth S., Knoxville, TN	TSR-M-042	2-161
Hooper, Dale E.	TSR-PC-006	2-367
Hooper, Daphne, Barnwell, SC	TSR-PC-004	2-367
Hooper, Maxine, Barnwell, SC	TSR-PC-004	2-367
Hooper, Travis J., Barnwell, SC	TSR-PC-004	2-367
Horn, Alan V., and Elisheva E. Martin, Burlingame, CA	TSR-M-002	2-136
Hughes, Lou, Hempstead, PA	TSR-P-030	2-325
Houston, Betty S., Davis CA	TSR-NM-003	2-372
Hult, Dale S.	TSR-PC-006	2-367
Huff, Edward R., Old Towne, ME	TSR-NF-001	2-371
Hunt, Darryle L., Amarillo, TX	TSR-F-018	2-51
Huntes, Nan R., Atlanta, GA	TSR-NM-037	2-403
Ivey, Francis K., Las Vegas, NV	TSR-M-021	2-147
Jackson, Mike, Barnwell, SC	TSR-PC-004	2-367
Jackson, Nancy, Barnwell, SC	TSR-PC-004	2-367
James, Rickey, Augusta, GA	TSR-PC-004	2-367
Jeffers, Randy, Amarillo, TX	TSR-PC-002	2-361
Jetter, Robert R., ID	TSR-F-004	2-42
Jobe, Lowell A., Idaho Falls, ID	TSR-M-123	2-238
Juhi, MH	TSR-PC-006	2-367
Kanies, Judith, Hermitage, TN	TSR-P-017	2-318
Kargaard, Sandra, Aiken, SC	TSR-PC-004	2-367
Karpen, Leah, Weaverville, NC	TSR-M-061	2-173
Katz, Debbie, Brookline, MA	TSR-PC-011	2-369
Kearse, Janie, Barnwell, SC	TSR-PC-004	2-367

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Commentor Information	Document Number	Document Page Number
Keener, Julia, Victor, ID	TSR-P-073	2-347
Keevan, Heath Regan, Amarillo, TX	TSR-PC-008	2-368
Keisler, Herman, Williston, SC	TSR-PC-004	2-367
Keller, Dale, NV	TSR-M-024	2-150
Keoslan, George, Hilton Head Island, SC	TSR-NM-021	2-387
Kerschner, Harrison F., NV	TSR-M-026	2-153
Kessler, Victor, ID	TSR-P-075	2-348
Kimbrough, Mary, Nolensville, TN	TSR-P-085	2-355
King, Joan O., Sautee, GA	TSR-M-140	2-262
	TSR-NM-006	2-374
Knight, Leuda M.	TSR-PC-006	2-367
Kobasa, Stephen V., New Haven, CT	TSR-P-071	2-346
Kourik, Howard, Henderson, NV	TSR-P-020	2-320
Kropschot, Richard H., Santa Fe, NM	TSR-NM-007	2-374
Kuehn, Richard, Boise, ID	TSR-F-008	2-44
Kushner, Adele, Alto, GA	TSR-P-061	2-341
Laborde, Amarillo, TX	TSR-M-128	2-240
Lamberger, Paul, Dayton, OH	TSR-F-016	2-47
Landry, Gisele T., Aiken, SC	TSR-PC-004	2-367
Latner, B., Brookline, MA	TSR-PC-011	2-369
Levine, Joan, Cottage Grove, OR	TSR-PC-011	2-369
Lihs, Ria, Beaumont, TX	TSR-PC-008	2-368
Lindquist, Kathy, Norris, TN	TSR-M-039	2-160
Lindsey, Ginny, Fairview, NC	TSR-M-046	2-164
Little, Mr., Las Vegas, NV	TSR-P-016	2-318
Lockwood, Marjorie, Asheville, NC	TSR-M-110	2-216
Lord, Charles and Joy, Pleasant Hill, TN	TSR-M-037	2-159
Lowell, Ann S., Chestnut Hill, MA	TSR-PC-011	2-369
Lown, Bernard, Chestnut Hill, MA	TSR-PC-011	2-369
Lown, Louise, Chestnut Hill, MA	TSR-PC-011	2-369
Lynn, Judith V.	TSR-PC-006	2-367
Maclellan, Eleanor, Boston, MA	TSR-F-034	2-68
MacMillian, Chris and Sally, Bluffton, SC	TSR-M-094	2-206
Malkmus, Mary, Ketchum, ID	TSR-M-016	2-144
Mamber, Ellie, Newton Centre, MA	TSR-PC-011	2-369
Manley, Rita, Pensacola, FL	TSR-P-010	2-314
Marshall, Glenn, Jonesborough, TN	TSR-M-035	2-158
Martindale, Julie, Amarillo, TX	TSR-M-012	2-141
Marquesas, Ed, Vernonia, OR	TSR-P-089	2-359
Matthews, Craig, Austin, TX	TSR-PC-008	2-368
Mayson, W. Penland Jr., Augusta, GA	TSR-H-010	2-114
Mazurek, Steve J., Augusta, GA	TSR-PC-004	2-367
McAlpine, Jim, Newton, MA	TSR-PC-011	2-369
McAlpine, Sally, Newton, MA	TSR-PC-011	2-369

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Commentor Information	Document Number	Document Page Number
McDonald, Karan, Las Vegas, NV	TSR-P-018	2-319
McDonald, Marcia A., Nashville, TN	TSR-M-047	2-164
McDowell, William, Nashville, TN	TSR-P-082	2-353
McGowan, Thomas, Las Vegas, NV	TSR-H-043	2-97
McNelles, Mary, Kansas City, MO	TSR-NM-017	2-385
Meehan, Kevin M.	TSR-PC-006	2-367
Merriam, Kay, Ph.D., Pocatello, ID	TSR-M-068	2-181
Mesiano, Bill, Idaho Falls, ID	TSR-P-047	2-334
Meyer, Richard, Sun Valley, ID	TSR-P-045	2-333
Michael, Frank, Summertown, TN	TSR-M-059	2-172
Miller, C.F., Aiken, SC	TSR-PC-004	2-367
Miller, Lisa R.	TSR-PC-006	2-367
Miller, Lyndon, Martinez, GA	TSR-PC-004	2-367
Minot, George M., Hilton Head Island, SC	TSR-M-098	2-208
Moesta, George, Augusta, GA	TSR-M-106	2-214
Monroe, R.R., Washington, DC	TSR-M-014	2-142
Moore, Roger L.	TSR-PC-006	2-367
Moorehead, Mary L.	TSR-PC-006	2-367
Morgan, Ernest, Burnsville, NC	TSR-M-043	2-162
Morgan, Tish B.	TSR-PC-006	2-367
Morris, Robert O. Jr., Barnwell, SC	TSR-PC-004	2-367
Moseley, Dennis, Amarillo, TX	TSR-P-005	2-311
Moyna, Aiessa, Las Vegas, NV	TSR-F-024	2-254
Mozurek, Steve J., Augusta, GA	TSR-PC-004	2-367
Mulkey, Margery, ID	TSR-P-032	2-326
Mullis, Gary, North Augusta, SC	TSR-PC-004	2-367
Murphree, Dorothy R., Candler, NC	TSR-M-109	2-216
Myers, Lynn, Aiken, SC	TSR-M-138	2-259
Nauerz, Markus, Washington, DC	TSR-M-120	2-236
Nelles, Mary Jo, Kansas City, MO	TSR-NM-017	2-385
Nesbitt, Dale, Berkeley, CA	TSR-NM-028	2-393
Neusch, Trish, Panhandle, TX	TSR-H-039	2-132
Newburg, Madonna, Manhattan Beach, CA	TSR-PC-008	2-368
Nixon, John, Barnwell, SC	TSR-PC-004	2-367
O'Brien, Kathy, Pocatello, ID	TSR-M-041	2-161
Ogilvie, Richard, Las Vegas, NV	TSR-P-024	2-322
Oruch, Augusta, GA	TSR-P-054	2-336
Osborne, Jeri, Panhandle, TX	TSR-PC-008	2-368
Osborne, Jim, Panhandle, TX	TSR-PC-008	2-368
Padgett, Larry, Barnwell, SC	TSR-PC-004	2-367
Padgett, Sara, Columbia, SC	TSR-PC-004	2-367
Parker, Rebecca	TSR-PC-006	2-367
Peelle, Bob, Oak Ridge, TN	TSR-M-139	2-260
Perry, Llewellyn L., Asheville, NC	TSR-M-090	2-194

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Commentor Information	Document Number	Document Page Number
Pettichord, Martin, Drexburg, ID	TSR-P-040	2-330
Phelan, Patrick, Amarillo, TX	TSR-F-019	2-51
Phillips, J.C., Jr., Lake Junaluska, NC	TSR-M-060	2-172
Piercy, Ron, Aiken, SC	TSR-P-011	2-315
Potts, K. Gregory, Barnwell, SC	TSR-PC-004	2-367
Prihepa, Lois, Las Vegas, NV	TSR-M-006	2-138
Proksa, Margo, Dennis, and Jessie, Pocatello, ID	TSR-H-002	2-109
Ramos, Myra B., Brookline, MA	TSR-M-179	2-302
Rawlinson, Stuart E., Las Vegas, NV	TSR-F-010	2-45
Ray, Timothy C., Barnwell, SC	TSR-PC-004	2-367
Ray, Wayne, Barnwell, SC	TSR-PC-004	2-367
Raymond, G. Bruce, Evans, GA	TSR-M-100	2-210
Redwine, Anne Banks, Chattanooga, TN	TSR-M-135	3-256
Rekdal, Shelia, Kansas City, MO	TSR-PC-008	2-368
Reilly, Victor J., Aiken, SC	TSR-M-010	2-139
	TSR-NM-011	2-377
	TSR-M-069	2-182
Rigg, Jim, Boise, ID	TSR-M-117	2-233
	TSR-M-146[a]	
Ringns, Paul, Barnwell, SC	TSR-PC-004	2-367
Rivers, Hank, Beaumont, TX	TSR-PC-008	2-368
Roskos, Nicole, Austin, TX	TSR-PC-008	2-368
Ross, Doug Curt, Austin, TX	TSR-PC-008	2-368
Rush, Pamela, Barnwell, SC	TSR-PC-004	2-367
Rush, Sammy, Barnwell, SC	TSR-M-178	2-302
Russell, E.R., SC	TSR-H-030	2-128
Scheer, Kristen, Kansas City, MO	TSR-PC-008	2-368
Schloss, Robert J., Elmsford, NY	TSR-M-071	2-183
Schulze, Peter, Austin, TX	TSR-P-081	2-352
Scogin, Marianne	TSR-PC-006	2-367
Scott, R.G., Amarillo, TX	TSR-P-074	2-347
	TSR-PC-008	2-368
Sees, Phyllis, Nashville, TN	TSR-M-103	2-213
Seewarld, William, Amarillo, TX	TSR-PC-008	2-368
	TSR-M-186	2-306
Seigmann, Eric R., Las Vegas, NV	TSR-NM-020	2-386
Shipley, Diana Y., Pocatello, ID	TSR-H-006	2-111
Simkins, Bryan, SC	TSR-H-016	2-118
Sinha, Raji, Albuquerque, NM	TSR-F-001	2-41
Sipp, Pete, Hephzibah, GA	TSR-P-072	2-346
Skelton, Joe, Canyon, TX	TSR-P-053	2-336
Sled, W.R.	TSR-PC-006	2-367
Slice, Louetta A., Barnwell, SC	TSR-PC-004	2-367
Sloan, Sidney and Brenda, Bogart, GA	TSR-NM-019	2-386

TABLE 1.3–3.—*Index of Commentors, Private Individuals* [Page 8 of 9]

Commentor Information	Document Number	Document Page Number
Smalls, Stephen A., Columbia, SC	TSR-PC-004	2-367
Smith, David, Idaho Falls, ID	TSR-P-041	2-331
Smith, J.P., Amarillo, TX	TSR-PC-008	2-368
Smith, Marshall, Denton, TX	TSR-PC-008	2-368
Smith, Phalba, TX	TSR-PC-008	2-368
Smith, Phillip, Panhandle, TX	TSR-PC-008	2-368
Snell, Jim, Nashville, TN	TSR-P-083	2-354
Spainhoward, Michael T., Las Vegas, NV	TSR-F-005	2-43
Stein, C.G., Rev., TX	TSR-M-143	2-268
Stein, Jaime Marie, Fairfield, IA	TSR-P-007	2-312
Still, Elizabeth M., Barnwell, SC	TSR-PC-004	2-367
Still, G.A., Barnwell, SC	TSR-PC-004	2-367
Still, James, Barnwell, SC	TSR-PC-004	2-367
Still, John H. Jr., Barnwell, SC	TSR-PC-004	2-367
Still, Mark, Barnwell, SC	TSR-PC-004	2-367
Still, Marshall, Barnwell, SC	TSR-PC-004	2-367
Still, Sheri	TSR-PC-004	2-367
Still, Tammy C., Barnwell, SC	TSR-PC-004	2-367
Still, Wymon	TSR-PC-004	2-367
Stobaugh, John, Austin, TX	TSR-PC-008	2-368
Stoudemire, Geanette, Barnwell, SC	TSR-PC-004	2-367
Swett, Alice, Newtonville, MA	TSR-PC-011	2-369
Swift, John, Las Vegas, NV	TSR-F-003	2-42
Takaro, Tim, M.D., Asheville, NC	TSR-M-132	2-253
Tashian, Barry M., Nashville, TN	TSR-M-033	2-157
Terrell, Mary E., Decatur, GA	TSR-NM-034	2-402
Thatcher, Hibbard, Nashville, TN	TSR-M-053	2-169
Thatcher, Lori	TSR-PC-006	2-367
Thayer, G. Richard, Amarillo, TX	TSR-PC-008	2-368
Thomas, Sharon C., North Augusta, SC	TSR-PC-004	2-367
Thompson, Julia, Boise, ID	TSR-P-035	2-328
Thompson, L. O'Brien, Amarillo, TX	TSR-M-049	2-165
Thorstenberg, Laurence, Brookline, MA	TSR-PC-011	2-369
Tolbert, Vicki P., Bartlett, TN	TSR-M-038	2-159
Tonczan, Mary, Houston, TX	TSR-PC-008	2-368
Treadway, Kathryn D., Aiken, SC	TSR-H-014	2-117
Turner, Kaye, Pocatello, ID	TSR-H-007	2-112
Valfgar, Phillip M.	TSR-PC-006	2-367
Valencia, Las Vegas, NV	TSR-P-026	2-323
Vaughan, Luty, Canyon, TX	TSR-PC-008	2-368
Vaught, Lori A.	TSR-PC-004	2-367
Wade, Marty, Pocatello, ID	TSR-H-005	2-111
Wallace, Elise, Isle of Palms, SC	TSR-P-050	2-335
Walterman, Tony, Amarillo, TX	TSR-H-041	2-134

TABLE 1.3–3.—*Index of Commentors, Private Individuals* [Page 9 of 9]

Commentor Information	Document Number	Document Page Number
Walters, Kathy, Martinez, GA	TSR-PC-004	2-367
Watson, Natalie, Meridian, ID	TSR-P-037	2-329
Webster, David, Brookline, MA	TSR-PC-011	2-369
Webster, Marianne, Dunwoody, GA	TSR-NM-037	2-403
Wendel, Duane, Graham, TX	TSR-PC-008	2-368
Wendel, Jeannine, Graham, TX	TSR-PC-008	2-368
West, Phil and Eileen, Boise, ID	TSR-P-043	2-332
West, Steve, Portland, OR	TSR-M-004	2-137
Wettemann, Martha, Pleasant View, TN	TSR-M-101	2-211
White, Jack and Betty, Pampa, TX	TSR-PC-008	2-368
Wildes, Darby, Rowley, MA	TSR-PC-011	2-369
	TSR-F-036	2-69
	TSR-M-158[a]	
Williamson, Julia G., Aiken, SC	TSR-PC-004	2-367
Williamson, Nancy, Brookline, MA	TSR-PC-011	2-369
Wolf, Deborah, Henderson, NV	TSR-P-025	2-322
Woodard, Victoria A., Berkeley, CA	TSR-F-014	2-46
	TSR-M-113[a]	
York, Mike, Pocatello, ID	TSR-P-036	2-328
Young, Philip	TSR-PC-006	2-367
Younger, Terri, Amarillo, TX	TSR-PC-008	2-368
Zeager, Lawrence L., Williston, SC	TSR-PC-004	2-367
Zegt, Joseph D.	TSR-PC-006	2-367
Zeis, Rosalie, Decatur, GA	TSR-NM-037	2-403
Zentner, Linda, Novato, CA	TSR-F-029	2-55
Zerlin Fagan, Janet, Newton, MA	TSR-M-156	2-277
Zitin, Eleanor S., Asheville, NC	TSR-M-032	2-156
Zorn, Joey	TSR-PC-004	2-367
Zorn, Pam, Barnwell, SC	TSR-PC-004	2-367
Name Indecipherable	TSR-PC-012	2-369
No Name Submitted	TSR-P-022	2-321
No Name Submitted	TSR-P-034	2-327
No Name Submitted	TSR-P-065	2-343
No Name Submitted, Pocatello, ID	TSR-H-036	2-131
No Name Submitted, Nampa, ID	TSR-M-102	2-211
No Name Submitted, Las Vegas, NV	TSR-H-035	2-131
No Name Submitted, NV	TSR-M-020	2-146
No Name Submitted, SC	TSR-H-032	2-130
No Name Submitted, SC	TSR-P-062	2-341
No Name Submitted, TN	TSR-F-013	2-46
No Name Submitted, TN	TSR-P-029	2-325
No Name Submitted, TX	TSR-F-020	2-52
No Name Submitted, TX	TSR-P-079	2-350

[a] Duplicate submission; document does not appear in chapter 2.

TABLE 1.3–4—*Index of Commentors, Organizations* [Page 1 of 5]

Commentor Information	Document Number	Document Page Number
ABB Combustion Engineering, George A. Davis, Project Manager, Windsor, CT	TSR-M-015	2-143
	TSR-F-046	2-98
	TSR-F-039[a]	
	TSR-M-173[a]	
	TSR-NM-014	2-382
Aiken City Council, Russ Ferrara, Councilman, Aiken, SC	TSR-H-027	2-126
	TSR-H-029	2-127
	TSR-NM-002	2-372
Aiken County, William M. Shepherd, County Administrator, Aiken, SC	TSR-H-019	2-119
Alliance for Justice, Mary Louise Lynch, Helen Scheel, Baltimore, MD	TSR-M-057	2-171
Alternatives to Violence, Daaz, Worcester, MA	TSR-PC-011	2-369
Amarillo Economic Development Corporation, Michael R. Bourn, Executive Director, George Raffkind, President, Amarillo, TX	TSR-M-186	2-306
Amarillo Globe-News, Garet Von Netzer, Publisher, Amarillo, TX	TSR-M-065	2-180
Amarillo National Bank, Bill Ware, Executive Vice-President, Richard Ware, II, President, Amarillo, TX	TSR-M-040	2-160
	TSR-M-045	2-163
Atlanta Women's Action for New Directions, Bobbie Wrenn Banks	TSR-NM-016	2-384
City of Amarillo, Kel Seliger, Mayor, John Q. Ward, City Manager, Amarillo, TX	TSR-M-186	2-306
County of Allendale, H.W. Priester, Jr., Administrator, Allendale, SC	TSR-M-086	2-192
American Nuclear Society Oak Ridge/Knoxville Section, David L. Moses, Ph.D., P.E., Oak Ridge, TN	TSR-M-119	2-235
	TSR-F-011[a]	
	TSR-M-093	2-199
	TSR-M-098[a]	
Anderson Merchandisers, Frank O. Nelson, Vice-President, Amarillo, TX	TSR-M-048	2-165
Argonne National Laboratory, A. DeVolpi, Physicist, Argonne, IL	TSR-F-027	2-55
Atomic Trades and Labor Council, David Ellis, Chief Steward for Refrigeration Mechanics at X-10, Andersonville, TN	TSR-P-090	2-361
Augusta College, William L. Boettinger, North Augusta, SC	TSR-M-091	2-194
Barnwell City Council, H.C. Sanders, Mayor, Albert P. Black, Herman L. Black, Edward Leruon, Charlie L. Seay, Barnwell, SC	TSR-M-182	2-304
Barnwell County Council, Anna G. Loadholt, Barnwell, SC	TSR-H-022	2-122
Bechtel National, Robert W. Braddy, Project Manager, Danville, CA	TSR-E-001	2-40
Boatmens First National Bank, Joe M. Stange, Amarillo, TX	TSR-PC-008	2-368
Boston Architectural Center, Curt Lamb, Boston, MA	TSR-M-162	2-279
BSRI, Jay S. Snyder, SC	TSR-F-035	2-68
Catholic Worker House of Hospitality, Don Timmerman, Milwaukee, WI	TSR-M-062	2-173
Citizens for Clean Air & Water, Paul Sacco, Ph.D., Rock Hill, SC	TSR-NM-005	2-373
Citizens for Nuclear Technology Awareness, Michael Butler, Executive Director Columbia, SC	TSR-F-047	2-101
	TSR-M-188[a]	
Citizens for Nuclear Technology Awareness, William Reinig, Vice-Chairman, Columbia, SC	TSR-NM-029	2-393
City of Oak Ridge, Environmental Quality Advisory Board, Ellen Smith, Chairperson, Oak Ridge, TN	TSR-F-041	2-96
Columbia County New Horizons Board of Commissioners, Patrick K. Farr, Sr., Chairman, Evans, GA	TSR-H-004	2-110
County of Nye, Board of County Commissioners, Cameron McRae, Chairman, Richard Carver, Vice-Chairman, Ira Copass, Bill Copeland, W. Ways Perkins, Tonopah, NV	TSR-M-185	2-305

TABLE 1.3–4—*Index of Commentors, Organizations* [Page 2 of 5]

Commentor Information	Document Number	Document Page Number
Dana-Farber Cancer Institute, Arnold Freedman, Boston, MA	TSR-PC-011	2-369
Eco-Watch/Sonoma, Julianne Don, Fred Ensley, Lucy Nelson, C.R. Ronner, Madeleine Sone, Larry Weiss, Kimberly Witcher, Sebastopol, CA	TSR-F-050	2-108
Egan & Associates, P.C., Joseph R. Egan,	TSR-NM-012	2-378
Energy Research Foundation, Brian Costner, Director, Columbia, SC	TSR-M-175 TSR-NM-027 TSR-NE-001[a]	2-299 2-392
FASCO, Bob Patton, Las Vegas, NV	TSR-P-027	2-323
FERMCO, Erich Evered, Las Vegas, NV	TSR-M-031	2-155
First Realty of Aiken, SC	TSR-M-097	2-208
General Atomics Power Reactor Group, A.J. Neylan, Vice-President, Power Reactor Group, San Diego, CA	TSR-M-112	2-217
General Electric Nuclear Energy, Edward Ehrlich, Project Manager, Advanced Reactor Programs, San Jose, CA	TSR-F-040 TSR-NF-002[a] TSR-NM-013	2-96 2-380
Georgia Power, W.G. Hairston III, Executive Vice-President, Nuclear Operations, Atlanta, GA	TSR-NM-031[a] TSR-NM-036[a] TSR-NM-033	 2-401
Greenpeace, Tom Clements, Washington, DC	TSR-M-166	2-282
Herbert Homes Inc., Mark Herbert, Augusta, GA	TSR-PC-012	2-369
Hickory Nut Gap Farm, Elspeth M. Clarke, Fairview, NC	TSR-M-063	2-174
Home Builders Association of GA, Chris Boweles, Augusta, GA	TSR-PC-012	2-369
League of Women Voters, Jean Elle, Pocatello, ID	TSR-M-118	2-234
Los Alamos County, Alex Georgieff, Deputy Administrator, Los Alamos, NM	TSR-M-152	2-274
Los Alamos Study Group, Greg Mello, Santa Fe, NM	TSR-F-037	2-84
Metal Trades Council, Frank W. George, Jr., Amarillo, TX	TSR-P-080	2-351
NAC International, John R. Patterson, Director, Aiken, SC	TSR-H-020	2-120
Nashville Peace Action, David Hedgepeth, Nashville, TN	TSR-F-032	2-58
The National Association of Home Builders, Berny McGahee, Martinez, GA	TSR-H-031 TSR-PC-012	2-129 2-369
National Center for Environmental Health, Kenneth W. Holt, M.S.E.H., Robert C. Whitcomb, Jr., Physical Scientist, Atlanta, GA	TSR-M-084	2-189
National Coalition to Stop Food Irradiation, Alan Horn, Burlingame, CA	TSR-M-002	2-136
National Congress of American Indians, Laura Hopkins, Washington, DC	TSR-F-030	2-57
Natural Resources Defense Council, Christopher E. Paine, Senior Research Associate, Washington, DC	TSR-M-064 TSR-M-126[a]	2-174
Natural Resources Defense Council, Jean Reynolds,	TSR-M-146[a]	
Neely, Craig and Walton, Steve Walton, Amarillo, TX	TSR-PC-002	2-361
New Age Concerns, John C. Haas, Villanova, PA	TSR-M-008	2-138
Nevada Alliance for Defense, Energy, and Business, Troy E.Wade, Chairman, Las Vegas, NV	TSR-M-187	2-307
Nevada Department of Administration, Julie A. Butler, Coordinator State Clearinghouse, Carson City, NV	TSR-M-167	2-284
North Augusta, Thomas W. Greene, Mayor of North Augusta, North Augusta, SC	TSR-H-011	2-115
Nuclear Control Institute, Washington, DC	TSR-F-017	2-49
Nuclear Control Institute, Paul Leventhal, President, Washington, DC	TSR-NM-030	2-394

TABLE 1.3–4—*Index of Commentors, Organizations* [Page 3 of 5]

Commentor Information	Document Number	Document Page Number
Nuclear Waste Repository Project Office, Les Bradshaw, Manager, Nye County Defense Operations, Tonopah, NV	TSR-F-033 TSR-M-130[a]	2-66
Paddock & Mastin, Attorneys at Law, Mary Mastin, Brian Paddock, Cookeville, TN	TSR-M-131	2-252
Pahrump Economic Development Task Force, Ann Ward, Chair, Pahrump, NV	TSR-M-189	2-309
PANAL, Doris Smith, Panhandle, TX	TSR-PC-008	2-368
PANAL, Doris and Phillip Smith, Panhandle, TX	TSR-M-134 TSR-NM-035	2-255 2-403
Panhandle Ground Water Conservation District No. 3, C.E.Williams, General Manager, White Deer, TX	TSR-F-023[a] TSR-M-133	2-253
Panhandle 2000, Jerry Johnson, Wales Madden, Jr., Amarillo, TX	TSR-PC-003	2-363
Peace Resource Project, Sherri Green, Rick Levin, Arcata, CA	TSR-M-180	2-303
People to Prevent a Texas Chernobol, John Dolley, Austin, TX	TSR-M-148	2-271
PPCAB, Louise Daniel, Amarillo, TX	TSR-M-136	2-257
Physicians for Social Responsibility, Tracy A. McCaffery, Senior Research Analyst, Washington, DC	TSR-F-038 TSR-M-125[a] TSR-NM-022	2-95 2-387
Physicians for Social Responsibility, Western North Carolina, Lewis E. Patrie, M.D., M.P.H., Ashville, NC	TSR-M-144	2-269
Raytheon Services, Harold Begley, Boulder City, NV	TSR-P-077	2-349
The Real Estate Shoppe Inc., Pam Griffin, Aiken, SC	TSR-M-170	2-292
Reynolds Electrical & Engineering Co. Inc., Danny B.Williams, Division Quality Coordinator, Las Vegas, NV	TSR-M-030	2-155
Sacred Heart Monastery, Mary McGehee, Cullman, AL	TSR-PC-008	2-368
Savannah River Site, Marvin Weimer, Aiken, SC	TSR-P-068	2-344
Save Our World, Marjorie Leonard, Director, Sag Harbor, NY	TSR-M-124	2-239
Scottco, William B. Martin, Amarillo, TX	TSR-PC-002	2-361
Scripps Consulting Group Inc., Glenn Niblock, San Diego, CA	TSR-E-002 TSR-NM-040	2-40 2-404
Sierra Club Nuclear Waste Task Force, John Winchester, Ph.D., Chairman, Tallahassee, FL	TSR-NM-040	2-404
Shoshone Bannock Tribe, Diana K. Yupe, Ft. Hall, ID	TSR-P-088	2-358
South Carolina, David M. Beasley, Governor, Columbia, SC	TSR-H-024	2-123
South Carolina, House of Representatives, J. Roland Smith, South Carolina 84th District, Langley, SC	TSR-H-008	2-113
South Carolina Department of Agriculture, David Thompkins, Assistant Commissioner, Columbia, SC	TSR-M-080	2-188
South Carolina Department of Health & Environmental Control, Division of Radioactive Waste, Virgil Autry, Director, Columbia, SC	TSR-M-077	2-186
South Carolina Department of Health and Environmental Control, Planning and Federal Certification, Robert D. Mikell, Director, Charleston, SC	TSR-M-082 TSR-M-074[a]	2-188
South Carolina Department of Probation, Parole, & Pardon Services, Richard P. Stroker, Deputy Director for Field Services, Columbia, SC	TSR-M-078	2-187
South Carolina Employment Security Commission, Robert E. David, Executive Director, Columbia, SC	TSR-M-083	2-189
South Carolina Office of the Adjunct General, George J. Schneider, Assistant Director, Columbia, SC	TSR-M-073	2-185

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Commentor Information	Document Number	Document Page Number
South Carolina Office of Community Grant Program, Olney England, Columbia, SC	TSR-M-079	2-187
South Carolina State Ports Authority, Larry W. Setzler, Engineering Project Manager, Columbia, SC	TSR-M-075	2-185
South Carolina Wildlife and Marine Resources Department, Robert E. Duncan, Environmental Programs Director, Columbia, SC	TSR-M-076	2-186
South-Central Nevada Federal Complex Advisory Board, Wade Barton, Chairman, Tonopah, NV	TSR-F-043 TSR-M-157[a]	2-97
Southwestern Public Service Company, William J. Crenshaw, Amarillo, TX	TSR-H-040	2-133
Southwestern Public Service Company, David M.Wilks, Senior Vice-President, Amarillo, TX	TSR-H-034 TSR-F-036	2-130 2-69
Space-PSI, R.P. Borsody, Senior Consultant, Redan, GA	TSR-NM-023	2-388
SPS Panhandle 2000, Bill Helton, Amarillo, TX	TSR-PC-002	2-361
STAND/Peace Farm, Marcia A. Keevan, Amarillo, TX	TSR-M-142	2-263
Stanford Watch, Lynn Sims, Portland, OR	TSR-P-067	2-344
State of Idaho Oversight Program, Bob Ferguson, Administrator, Boise, ID	TSR-M-129	2-240
State Senate of South Carolina, Thomas Moore, Senator, Clearwater, SC	TSR-M-095	2-206
State Senate of Texas, Teel Bivins, Senator, Amarillo, TX	TSR-M-116	2-232
State Senate of Texas, Tom Haywood, Senator, Austin, TX	TSR-M-056 TSR-H-037[a]	2-170
Tennessee Department of Environment and Conservation, Earl Leming, Director, Oak Ridge, TN	TSR-M-154 TSR-F-026[a]	2-275
Tennessee Historical Commission, Herbert L. Harper, Executive Director, Nashville, TN	TSR-M-085	2-191
Tennessee Valley Authority, James S. Blackburn, Acting NA&L Director, Hollywood, AL	TSR-NE-002	2-370
Texas Corn Growers Association, Lois Wales, Dimmitt, TX	TSR-M-147	2-270
Texas House of Representatives, Warren Chisum, State Representative from Texas, Austin, TX	TSR-H-038	2-132
Texas House of Representatives, John Smithee, State Representative from Texas, Amarillo, TX	TSR-M-044	2-162
Texas House of Representatives, David Swinford, State Representative from Texas, Dumas, TX	TSR-M-099	2-209
Texas Office of State - Federal Relations, T. C. Adams, State Single Point of Contact, Austin, TX	TSR-M-169	2-291
Texas Nuclear Responsibility Network, Ellen Barfield, Dallas, TX	TSR-P-087	2-357
Texas Nuclear Waste Task Force, Hereford, TX	TSR-M-149	2-272
Thomas Merton Center, Molly Rush, Pittsburgh, PA	TSR-P-023	2-321
Tri County Alliance, Jim Kearse, Chairman Barnwell County Council, Barnwell, SC	TSR-H-009	2-114
Trotter Realty, David N. Barnes, Appling, GA	TSR-H-021	2-121
Ultra Energy Project, Mary Ellen Bowen, Summertown, TN	TSR-P-012	2-316
Underwood Wilson Berry Stein & Johnson, P.C., Richard F. Brown, Amarillo, TX	TSR-PC-002	2-361
University of North Carolina, Dot Sulock, Math Department, Asheville, NC	TSR-M-159	2-278
U.S. Department of Agriculture, Luana Kiger, State Conservationist, Boise, ID	TSR-M-153	2-274

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Commentor Information	Document Number	Document Page Number
U.S. Department of Energy, Dale Brantley, Warrenville, SC	TSR-PC-004	2-367
U.S. Department of the Interior, Martin Chattah, Las Vegas, NV	TSR-F-031	2-58
U.S. Environmental Protection Agency, Richard Sanderson, Director, Office of Federal Activities, Washington, DC	TSR-F-049	2-104
U.S. House of Representatives, Larry Combest, U.S. Representative for Texas, Washington, DC	TSR-M-184	2-304
U.S. House of Representatives, Arthur Ravenel, Jr., U.S. Representative for South Carolina, Washington, DC	TSR-H-028	2-127
U.S. Senate, Richard H. Bryan, U.S. Senator for Nevada, Washington, DC	TSR-F-021	2-52
U.S. Senate, Phil Gramm, U.S. Senator for Texas, Washington, D.C.	TSR-M-137	2-258
U.S. Senate, Kay Bailey Hutchison, U.S. Senator for Texas, Washington, DC	TSR-M-183	2-304
U.S. Senate, Harry Reid, U.S. Senator for Nevada, Washington, DC	TSR-M-025	2-150
U.S. Senate, Strom Thurmond, U.S. Senator for South Carolina, Washington, DC	TSR-H-012	2-116
Utility Engineering Corp., Steven Fruscella, Amarillo, TX	TSR-M-005	2-137
Westinghouse, William Brizes, Aiken, SC	TSR-F-048	2-102
Westinghouse Electric Corporation, Mike Travis, Manager, Pittsburgh, PA	TSR-F-022 TSR-M-155[a]	2-53
Westinghouse Hanford Company, Walter D. Blair, Hanford Advisory Board, Richland, WA	TSR-M-172	2-295
Westinghouse Savannah River Company, Daniel C. Wood, Aiken, SC	TSR-P-066	2-343
Wiley Hicks Jr. Inc., James P. Hicks, President, Amarillo, TX	TSR-M-052	2-168
Williams Ranch, Jim Williams, Panhandle, TX	TSR-PC-008	2-368
Williston Town Council, Thomas R. Ruillo, Mayor, Michael Bayoun, Michael Duncan, Phil Frederick, Penny Halus, Billie Jean Spraus, D. Milton Widener, Williston, SC	TSR-M-181	2-303

[a] Duplicate submission; document does not appear in chapter 2.

TABLE 1.3–5.—*Comment Document and Summary Locator* [Page 1 of 25]

Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
TSR-E-001	001	18.05	3-141	2-40
TSR-E-002	001	15.03	3-129	2-40
TSR-F-001	001	03.08	3-11	2-41
	002	11.00.16	3-54	2-41
	003	03.09	3-11	2-41
TSR-F-002	001	08.02	3-29	2-41
TSR-F-003	001	08.02	3-29	2-42
TSR-F-004	001	14.02	3-126	2-42
	002	20.06	3-145	
TSR-F-005	001	13.06.01	3-120	2-43
TSR-F-006	001	13.06.01	3-120	2-43
TSR-F-008	001	18.01	3-139	2-44
TSR-F-009	001	13.09.01	3-123	2-44
TSR-F-010	001	13.04.08	3-114	2-45
	002	13.06.01	3-120	
TSR-F-012	001	13.09.01	3-123	2-45
	002	13.00.38	3-94	
	003	18.01	3-139	
TSR-F-013	001	20.07	3-145	2-46
TSR-F-014	001	13.00.01	3-79	2-46
	002	18.01	3-139	
	003	11.00.36	3-60	
	004	18.13	3-142	
	005	06.04	3-23	
	006	20.01	3-144	
TSR-F-016	001	13.00.63	3-103	2-47
	002	13.00.64	3-103	
	003	18.10	3-141	
	004	14.07	3-127	
	005	16.24	3-137	
	006	16.25	3-137	
	007	16.26	3-137	
	008	13.00.65	3-103	
	009	22.03	3-147	
	010	13.00.19	3-87	
	011	13.00.51	3-98	
	012	16.27	3-138	
	013	16.28	3-138	
	014	16.29	3-138	
	015	13.00.43	3-95	
	016	14.01	3-125	
	017	18.15	3-142	
	018	13.00.40	3-94	
	019	18.15	3-142	
	020	16.30	3-138	

TABLE 1.3–5.—*Comment Document and Summary Locator* [Page 2 of 25]

Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
	021	13.00.34	3-92	
	022	22.03	3-147	
TSR-F-017	001	16.01	3-130	2-49
TSR-F-018	001	13.08.01	3-122	2-51
TSR-F-019	001	13.08.01	3-122	2-51
TSR-F-020	001	13.00.33	3-92	2-52
	002	13.08.01	3-122	
TSR-F-021	001	13.06.01	3-120	2-52
	002	13.06.01	3-120	
	003	21.01	3-146	
	004	13.04.01	3-111	
TSR-F-022	001	11.00.33	3-59	2-53
	002	11.00.34	3-59	
	003	11.00.37	3-60	
TSR-F-024	001	13.04.01	3-111	2-54
	002	13.06.01	3-120	
TSR-F-027	001	18.01	3-139	2-55
TSR-F-029	001	13.08.01	3-122	2-55
	002	06.01	3-22	
	003	04.02.01	3-12	
	004	09.03	3-37	
	005	13.04.01	3-111	
TSR-F-030	001	19.01	3-143	2-57
	002	18.15	3-142	
	003	13.00.01	3-79	
	004	22.01	3-146	
	005	15.01	3-128	
	006	13.00.07	3-83	
	007	16.21	3-136	
TSR-F-031	001	06.14	3-27	2-58
	002	06.15	3-27	
	003	13.04.01	3-111	
	004	15.09	3-130	
TSR-F-032	001	18.15	3-142	2-58
	002	13.00.01	3-79	
	003	19.01	3-143	
	004	16.14	3-134	
	005	13.00.55	3-99	
	006	18.08	3-141	
	007	13.00.09	3-83	
	008	08.10	3-32	
	009	16.21	3-136	
	010	13.00.16	3-85	
	011	18.01	3-139	

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Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
	012	11.01.03	3-61	
	013	18.15	3-142	
TSR-F-033	001	10.18	3-43	2-66
	002	08.13	3-34	
	003	04.02.02	3-13	
	004	02.06	3-7	
	005	13.06.01	3-120	
TSR-F-034	001	18.01	3-139	2-68
TSR-F-035	001	15.01	3-128	2-68
	002	16.05	3-132	
	003	13.09.01	3-123	
TSR-F-036	001	13.08.01	3-122	2-69
	002	16.14	3-134	
	003	02.04	3-6	
	004	04.02.01	3-12	
	005	13.00.10	3-84	
	006	01.06	3-2	
	007	01.07	3-3	
	008	02.04	3-6	
	009	01.08	3-3	
	010	11.00.25	3-57	
	011	03.04	3-10	
	012	04.02.01	3-12	
	013	05.04	3-21	
	014	06.13	3-26	
	015	06.05	3-23	
	016	07.05	3-29	
	017	10.10	3-41	
	018	13.04.18	3-116	
TSR-F-037	001	18.08	3-141	2-84
	002	18.01	3-139	
	003	16.14	3-134	
TSR-F-038	001	18.01	3-139	2-95
	002	20.01	3-144	
	003	13.00.16	3-85	
	004	13.00.01	3-79	
TSR-F-040	001	13.00.44	3-95	2-96
	002	13.00.45	3-95	
	003	13.00.46	3-96	
	004	13.03.03	3-108	
	005	13.03.04	3-109	
	006	14.01	3-125	
TSR-F-041	001	13.07.02	3-122	2-96
	002	12.05	3-77	

TABLE 1.3–5.—*Comment Document and Summary Locator* [Page 4 of 25]

Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
	003	08.15	3-34	
TSR-F-043	001	13.06.01	3-120	2-97
TSR-F-046	001	13.04.03	3-112	2-98
	002	13.00.21	3-88	
	003	13.00.02	3-79	
	004	11.02.04	3-71	
	005	13.00.02	3-79	
	006	13.04.02	3-111	
	007	13.04.07	3-113	
	008	13.04.28	3-119	
	009	18.04	3-140	
	010	14.01	3-125	
	011	16.07	3-133	
	012	14.01	3-125	
	013	13.04.03	3-112	
	014	13.05.03	3-120	
	015	08.10	3-32	
	016	13.00.58	3-99	
	017	13.04.07	3-113	
	018	02.03	3-5	
	019	13.04.03	3-112	
	020	13.03.07	3-109	
	021	13.03.11	3-111	
	022	13.03.12	3-111	
	023	13.04.03	3-112	
	024	04.02.02	3-13	
	025	11.00.08	3-51	
	026	13.00.61	3-102	
	027	05.05	3-21	
	028	11.00.10	3-52	
	029	13.00.05	3-81	
	030	13.04.21	3-117	
	031	13.00.35	3-92	
	032	13.04.07	3-113	
	033	11.00.15	3-54	
	034	13.03.10	3-110	
	035	13.03.09	3-110	
	036	11.00.19	3-55	
	037	13.00.62	3-103	
	038	11.02.07	3-72	
TSR-F-047	001	16.07	3-133	2-101
	002	13.00.05	3-81	
	003	02.04	3-6	
	004	13.00.31	3-91	

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Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
	005	13.09.01	3-123	
TSR-F-048	001	16.31	3-138	2-102
	002	13.00.14	3-85	
	003	11.00.02	3-50	
TSR-F-049	001	13.04.01	3-111	2-104
	002	13.00.39	3-94	
	003	12.03	3-75	
	004	16.23	3-137	
	005	10.37	3-49	
	006	11.02.06	3-72	
	007	12.08	3-77	
	008	11.01.19	3-67	
	009	03.03	3-10	
	010	06.11	3-25	
	011	04.02.06	3-16	
	012	06.06	3-24	
	013	06.09	3-24	
	014	04.02.09	3-18	
	015	02.07	3-7	
	016	04.01.04	3-12	
	017	08.09	3-32	
	018	03.05	3-11	
	019	04.02.04	3-14	
	020	06.09	3-24	
	021	04.02.01	3-12	
	022	10.34	3-47	
	023	04.02.02	3-13	
	024	17.05	3-139	
	025	08.21	3-36	
	026	08.22	3-36	
TSR-F-050	001	18.01	3-139	2-108
	002	19.01	3-143	
TSR-H-001	001	18.01	3-139	2-109
TSR-H-002	001	18.01	3-139	2-109
	002	19.01	3-143	
TSR-H-003	001	13.00.05	3-81	2-110
	002	13.09.01	3-123	
TSR-H-004	001	13.09.01	3-123	2-110
TSR-H-005	001	20.01	3-144	2-111
TSR-H-006	001	18.01	3-139	2-111
TSR-H-007	001	18.01	3-139	2-112
TSR-H-008	001	13.09.01	3-123	2-113
TSR-H-009	001	13.09.01	3-123	2-114
TSR-H-010	001	13.09.01	3-123	2-114

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Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
TSR-H-011	001	13.09.01	3-123	2-115
	002	13.00.05	3-81	
TSR-H-012	001	13.00.05	3-81	2-116
	002	13.09.01	3-123	
TSR-H-013	001	13.01.04	3-105	2-116
TSR-H-014	001	13.09.01	3-123	2-117
TSR-H-015		No comment identified		2-117
TSR-H-016	001	13.09.01	3-123	2-118
TSR-H-017	001	13.09.01	3-123	2-118
	002	13.00.37	3-93	
TSR-H-018	001	11.00.17	3-54	2-119
TSR-H-019	001	13.09.01	3-123	2-119
TSR-H-020	001	13.09.01	3-123	2-120
TSR-H-021	001	13.09.01	3-123	2-121
TSR-H-022	001	13.09.01	3-123	2-122
TSR-H-023	001	13.09.01	3-123	2-122
TSR-H-024	001	13.09.01	3-123	2-123
	002	13.00.05	3-81	
TSR-H-025	001	13.04.11	3-114	2-124
	002	16.12	3-133	
	003	02.04	3-6	
TSR-H-026	001	13.09.01	3-123	2-124
	002	13.00.05	3-81	
TSR-H-027	001	13.00.27	3-90	2-126
	002	13.09.01	3-123	
TSR-H-028	001	19.03	3-144	2-127
	002	08.04	3-30	
	003	13.09.01	3-123	
	004	10.04	3-40	
TSR-H-029	001	13.00.05	3-81	2-127
TSR-H-030	001	13.01.03	3-105	2-128
	002	10.28	3-46	
	003	16.08	3-133	
	004	16.13	3-134	
	005	13.00.22	3-88	
	006	11.02.01	3-70	
	007	22.03	3-147	
TSR-H-031	001	13.09.01	3-123	2-129
TSR-H-032	001	13.04.07	3-113	2-130
TSR-H-034	001	13.00.38	3-94	2-130
	002	04.02.01	3-12	
	003	02.04	3-6	
TSR-H-035	001	16.06	3-132	2-131
TSR-H-036	001	19.01	3-143	2-131

TABLE 1.3–5.—*Comment Document and Summary Locator* [Page 7 of 25]

Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
TSR-H-038	001	13.08.01	3-122	2-132
	002	14.03	3-127	
	003	14.09	3-128	
TSR-H-039	001	01.01	3-1	2-132
	002	04.02.01	3-12	
	003	18.01	3-139	
TSR-H-040	001	13.08.01	3-122	2-133
	002	06.17	3-27	
	003	08.11	3-33	
	004	03.04	3-10	
	005	04.02.01	3-12	
	006	07.04	3-29	
	007	02.01	3-4	
	008	08.10	3-32	
	009	04.02.10	3-18	
TSR-H-041	001	18.04	3-140	2-134
TSR-H-042	001	18.04	3-140	2-135
TSR-H-043	001	13.00.17	3-85	2-135
TSR-M-001	001	18.01	3-139	2-136
	002	10.02	3-39	
	003	13.00.01	3-79	
TSR-M-002	001	18.01	3-139	2-136
TSR-M-004	001	13.00.01	3-79	2-137
	002	20.01	3-144	
TSR-M-005	001	13.08.01	3-122	2-137
TSR-M-006	001	08.02	3-29	2-138
TSR-M-008	001	13.00.01	3-79	2-138
TSR-M-009	001	13.07.01	3-122	2-139
TSR-M-010	001	20.09	3-145	2-139
	002	13.09.04	3-124	
TSR-M-011	001	13.00.01	3-79	2-141
	002	20.01	3-144	
TSR-M-012	001	10.24	3-45	2-141
	002	04.02.01	3-12	
	003	01.01	3-1	
	004	06.01	3-22	
TSR-M-013	001	08.02	3-29	2-142
	002	13.06.01	3-120	
TSR-M-014	001	15.01	3-128	2-142
TSR-M-015	001	16.07	3-133	2-143
	002	13.00.02	3-79	
	003	02.04	3-6	
	004	13.00.05	3-81	
	005	11.00.08	3-51	

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Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
	006	13.00.35	3-92	
	007	13.00.60	3-101	
	008	13.03.02	3-108	
TSR-M-016	001	14.04	3-127	2-144
TSR-M-017	001	13.06.01	3-120	2-145
TSR-M-019	001	18.01	3-139	2-146
	002	13.00.01	3-79	
TSR-M-020	001	13.06.01	3-120	2-146
TSR-M-021	001	08.02	3-29	2-147
TSR-M-022	001	11.00.10	3-52	2-147
TSR-M-023	001	22.01	3-146	2-148
	002	09.09	3-38	
	003	13.09.02	3-124	
	004	13.09.07	3-125	
TSR-M-024	001	16.06	3-132	2-150
	002	22.01	3-146	
	003	14.01	3-125	
	004	15.04	3-129	
TSR-M-025	001	13.04.17	3-116	2-150
	002	13.06.01	3-120	
	003	13.04.05	3-113	
	004	08.02	3-29	
TSR-M-026	001	18.05	3-141	2-153
	002	13.06.01	3-120	
TSR-M-027	001	18.01	3-139	2-153
	002	13.00.01	3-79	
TSR-M-028	001	13.06.01	3-120	2-154
TSR-M-029	001	13.06.01	3-120	2-154
	002	13.04.01	3-111	
TSR-M-030	001	13.06.01	3-120	2-155
	002	13.06.02	3-121	
	003	08.08	3-32	
TSR-M-031	001	13.06.01	3-120	2-155
TSR-M-032	001	18.01	3-139	2-156
TSR-M-033	001	18.01	3-139	2-157
	002	12.02	3-75	
	003	19.01	3-143	
	004	18.01	3-139	
	005	13.00.01	3-79	
TSR-M-034	001	13.00.16	3-85	2-157
TSR-M-035	001	13.00.01	3-79	2-158
TSR-M-036	001	13.00.01	3-79	2-158
TSR-M-037	001	14.02	3-126	2-159
	002	13.00.01	3-79	

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Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
TSR-M-038	001	13.00.01	3-79	2-159
TSR-M-039	001	19.01	3-143	2-160
	002	18.01	3-139	
	003	13.00.01	3-79	
TSR-M-040	001	13.08.01	3-122	2-160
TSR-M-041	001	18.01	3-139	2-161
	002	19.01	3-143	
TSR-M-042	001	19.01	3-143	2-161
	002	18.01	3-139	
TSR-M-043	001	18.01	3-139	2-162
TSR-M-044	001	15.01	3-128	2-162
	002	11.00.29	3-58	
	003	14.03	3-127	
	004	13.08.01	3-122	
	005	14.09	3-128	
TSR-M-045	001	13.08.01	3-122	2-163
TSR-M-046	001	20.01	3-144	2-164
	002	19.01	3-143	
	003	18.15	3-142	
TSR-M-047	001	13.00.01	3-79	2-164
TSR-M-048	001	13.08.01	3-122	2-165
TSR-M-049	001	13.08.01	3-122	2-165
TSR-M-050	001	13.06.01	3-120	2-166
TSR-M-051	001	18.01	3-139	2-167
	002	19.01	3-143	
	003	13.00.01	3-79	
TSR-M-052	001	13.08.01	3-122	2-168
TSR-M-053	001	18.01	3-139	2-169
	002	13.00.16	3-85	
TSR-M-055	001	13.00.20	3-87	2-170
	002	18.01	3-139	
	003	19.01	3-143	
TSR-M-056	001	15.01	3-128	2-170
	002	13.08.01	3-122	
	003	14.03	3-127	
	004	14.09	3-128	
TSR-M-057	001	18.01	3-139	2-171
TSR-M-059	001	13.07.01	3-122	2-172
TSR-M-060	001	18.01	3-139	2-172
	002	10.02	3-39	
	003	18.01	3-139	
TSR-M-061	001	13.00.02	3-79	2-173
	002	18.01	3-139	
TSR-M-062	001	18.01	3-139	2-173

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Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
	002	11.00.12	3-53	
	003	18.03	3-140	
TSR-M-063	001	20.01	3-144	2-174
TSR-M-064	001	16.16	3-135	2-174
	002	16.04	3-131	
	003	13.00.06	3-82	
	004	13.00.49	3-96	
	005	13.00.26	3-89	
	006	13.00.66	3-103	
	007	22.02	3-147	
	008	13.03.08	3-111	
	009	13.00.66	3-103	
	010	22.02	3-147	
	011	13.00.28	3-90	
	012	22.02	3-147	
	013	13.04.04	3-112	
	014	15.05	3-129	
TSR-M-065	001	13.08.01	3-122	2-180
TSR-M-066	001	20.05	3-145	2-181
TSR-M-068	001	15.01	3-128	2-181
	002	15.03	3-129	
	003	18.01	3-139	
	004	10.02	3-39	
TSR-M-069	001	18.01	3-139	2-182
	002	13.00.55	3-99	
TSR-M-070	001	13.04.03	3-112	2-183
	002	11.00.07	3-51	
TSR-M-071	001	18.01	3-139	2-183
	002	19.01	3-143	
TSR-M-072	001	13.09.01	3-123	2-184
TSR-M-073	001	17.02	3-139	2-185
TSR-M-075	001	No comment identified		2-185
TSR-M-076	001	17.02	3-139	2-186
TSR-M-077	001	17.02	3-139	2-186
TSR-M-078	001	17.02	3-139	2-187
TSR-M-079	001	No comment identified		2-187
TSR-M-080	001	No comment identified		2-188
TSR-M-082	001	17.02	3-139	2-188
TSR-M-083	001	17.02	3-139	2-189
TSR-M-084	001	11.00.06	3-51	2-189
	002	11.00.30	3-58	
	003	11.00.31	3-58	
	004	11.00.32	3-59	
TSR-M-085	001	07.01	3-27	2-191

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Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
TSR-M-086	001	13.00.05	3-81	2-192
	002	13.09.01	3-123	
TSR-M-087	001	13.06.01	3-120	2-192
	002	14.05	3-127	
	003	10.01	3-39	
TSR-M-088	001	13.00.01	3-79	2-193
	002	18.15	3-142	
TSR-M-090	001	18.01	3-139	2-194
TSR-M-091	001	02.04	3-6	2-194
TSR-M-092	001	15.01	3-128	2-198
	002	13.03.01	3-107	
	003	02.04	3-6	
	004	13.09.01	3-123	
	005	13.00.25	3-89	
TSR-M-093	001	18.09	3-141	2-199
	002	10.03	3-40	
	003	13.04.02	3-111	
	004	11.02.04	3-71	
	005	13.04.12	3-114	
	006	10.36	3-48	
	007	10.03	3-40	
	008	14.01	3-125	
	009	13.04.13	3-115	
TSR-M-094	001	13.09.04	3-124	2-206
TSR-M-095	001	13.09.01	3-123	2-206
TSR-M-096	001	14.02	3-126	2-207
	002	04.02.09	3-18	
TSR-M-097	001	08.04	3-30	2-208
	002	18.01	3-139	
TSR-M-098	001	13.00.09	3-83	2-208
	002	20.02	3-147	
	003	13.00.12	3-84	
	004	22.02	3-147	
	005	13.00.31	3-91	
	006	18.01	3-139	
TSR-M-099	001	13.08.01	3-122	2-209
	002	15.01	3-128	
	003	14.09	3-128	
TSR-M-100	001	13.09.01	3-123	2-210
TSR-M-101	001	13.00.01	3-79	2-211
	002	18.01	3-139	
	003	13.07.01	3-122	
TSR-M-102	001	13.05.02	3-120	2-211
	002	11.00.12	3-53	

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Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
TSR-M-103	001	13.00.01	3-79	2-213
TSR-M-104	001	04.02.01	3-12	2-213
	002	11.00.12	3-53	
	003	18.01	3-139	
	004	19.01	3-143	
	005	08.05	3-31	
TSR-M-105	001	11.00.12	3-53	2-214
	002	20.01	3-144	
TSR-M-106	001	13.09.01	3-123	2-214
TSR-M-107	001	18.01	3-139	2-215
	002	19.01	3-143	
TSR-M-108	001	18.01	3-139	2-215
TSR-M-109	001	18.01	3-139	2-216
	002	19.01	3-143	
TSR-M-110	001	18.01	3-139	2-216
	002	11.00.10	3-52	
TSR-M-111	001	18.01	3-139	2-217
	002	19.01	3-143	
TSR-M-112	001	13.00.03	3-80	2-217
	002	13.00.05	3-81	
	003	13.00.60	3-101	
	004	02.04	3-6	
	005	02.03	3-5	
	006	13.00.57	3-99	
	007	12.05	3-77	
	008	13.03.05	3-109	
	009	13.00.30	3-91	
	010	13.00.24	3-89	
	011	13.00.59	3-100	
	012	13.00.33	3-92	
	013	13.00.18	3-86	
	014	16.14	3-134	
	015	13.00.04	3-80	
	016	13.04.23	3-118	
	017	14.06	3-127	
	018	13.02.04	3-106	
	019	02.09	3-8	
	020	02.04	3-6	
	021	01.09	3-3	
	022	13.02.05	3-106	
	023	13.02.06	3-106	
	024	13.04.24	3-118	
	025	11.01.24	3-68	
	026	11.01.25	3-68	

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Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
	027	11.01.26	3-68	
	028	11.01.27	3-69	
	029	11.01.28	3-69	
	030	11.01.29	3-69	
	031	11.01.30	3-69	
	032	11.02.05	3-72	
	033	11.02.09	3-73	
	034	11.02.10	3-73	
	035	10.12	3-42	
	036	02.03	3-5	
	037	13.04.27	3-119	
	038	02.03	3-5	
	039	13.02.07	3-106	
	040	13.00.59	3-100	
	041	13.02.08	3-106	
	042	13.03.06	3-109	
	043	13.00.22	3-88	
	044	13.02.09	3-107	
	045	13.00.18	3-86	
	046	13.00.03	3-80	
	047	13.02.11	3-107	
	048	13.02.10	3-107	
	049	13.02.03	3-106	
	050	13.03.07	3-109	
	051	13.03.05	3-109	
	052	13.04.25	3-119	
	053	13.04.26	3-119	
	054	13.00.03	3-80	
	055	13.00.35	3-92	
	056	13.00.18	3-86	
	057	13.00.22	3-88	
	058	13.00.05	3-81	
	059	13.04.19	3-117	
	060	13.02.02	3-105	
	061	03.06	3-11	
	062	11.00.26	3-57	
	063	11.01.31	3-69	
	064	11.01.32	3-69	
	065	11.01.33	3-70	
	066	11.01.34	3-70	
	067	11.01.35	3-70	
	068	11.01.36	3-70	
	069	11.01.23	3-68	
	070	11.02.11	3-73	

TABLE 1.3–5.—*Comment Document and Summary Locator* [Page 14 of 25]

Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
	071	11.02.12	3-73	
	072	11.00.20	3-55	
	073	11.02.12	3-73	
	074	11.01.24	3-68	
	075	11.02.16	3-74	
	076	11.00.19	3-55	
	077	11.02.15	3-74	
	078	11.00.20	3-55	
	079	11.00.28	3-58	
	080	11.02.14	3-73	
	081	11.02.13	3-73	
	082	11.02.08	3-73	
	083	02.01	3-4	
	084	13.04.06	3-113	
	085	11.01.22	3-68	
	086	13.00.59	3-100	
	087	13.00.22	3-88	
	088	13.00.60	3-101	
	089	13.00.59	3-100	
	090	14.01	3-125	
TSR-M-115	001	18.01	3-139	2-232
TSR-M-116	001	11.00.29	3-58	2-232
	002	13.08.01	3-122	
	003	14.09	3-128	
TSR-M-117	001	13.00.20	3-87	2-233
	002	18.01	3-139	
	003	19.01	3-143	
TSR-M-118	001	10.02	3-39	2-234
	002	18.01	3-139	
TSR-M-119	001	16.20	3-136	2-235
	002	17.03	3-139	
	003	13.00.21	3-88	
	004	18.01	3-139	
TSR-M-120	001	18.01	3-139	2-236
TSR-M-122	001	18.15	3-142	2-238
TSR-M-123	001	16.07	3-133	2-238
	002	13.00.22	3-88	
	003	13.03.01	3-107	
	004	13.09.01	3-123	
	005	13.05.04	3-120	
TSR-M-124	001	18.01	3-139	2-239
TSR-M-127	001	18.01	3-139	2-239
TSR-M-128	001	13.08.03	3-123	2-240
TSR-M-129	001	14.01	3-125	2-240

TABLE 1.3–5.—*Comment Document and Summary Locator* [Page 15 of 25]

Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
	002	09.04	3-37	
	003	04.02.04	3-14	
	004	13.05.01	3-119	
	005	13.00.41	3-95	
	006	10.38	3-49	
	007	12.08	3-78	
	008	04.01.03	3-12	
	009	16.18	3-136	
	010	13.00.52	3-98	
	011	10.38	3-49	
	012	10.37	3-49	
	013	13.00.19	3-87	
	014	13.00.19	3-87	
	015	10.37	3-49	
	016	13.00.53	3-98	
	017	13.00.53	3-98	
	018	11.00.27	3-57	
	019	02.01	3-4	
	020	03.02	3-9	
	021	06.10	3-25	
	022	09.07	3-38	
	023	04.02.04	3-14	
	024	04.02.08	3-18	
	025	10.35	3-48	
	026	02.09	3-8	
	027	08.18	3-35	
	028	10.33	3-47	
	029	13.00.13	3-84	
	030	11.02.02	3-71	
	031	08.19	3-35	
	032	12.05	3-77	
	033	08.20	3-36	
	034	11.01.20	3-67	
	035	11.01.21	3-68	
	036	11.01.04	3-61	
	037	11.01.05	3-61	
	038	11.01.06	3-63	
	039	11.01.07	3-63	
	040	11.01.08	3-63	
	041	11.01.09	3-64	
	042	11.01.10	3-64	
	043	11.01.11	3-65	
	044	11.01.12	3-66	
	045	11.01.13	3-66	

TABLE 1.3–5.—*Comment Document and Summary Locator* [Page 16 of 25]

Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
	046	11.01.14	3-66	
	047	11.01.15	3-66	
	048	11.01.16	3-67	
	049	11.01.17	3-67	
	050	11.01.18	3-67	
	051	11.02.03	3-71	
	052	11.00.37	3-60	
	053	10.32	3-47	
	054	10.31	3-46	
	055	10.30	3-46	
	056	02.11	3-9	
	057	16.19	3-136	
TSR-M-131	001	13.00.01	3-79	2-252
	002	19.01	3-143	
	003	10.02	3-39	
	004	18.15	3-142	
TSR-M-132	001	18.01	3-139	2-253
TSR-M-133	001	04.02.01	3-12	2-253
	002	02.01	3-4	
TSR-M-134	001	18.01	3-139	2-255
	002	19.01	3-143	
	003	04.02.01	3-12	
	004	20.01	3-144	
	005	11.00.12	3-53	
	006	11.01.02	3-61	
	007	15.08	3-130	
TSR-M-135	001	11.00.12	3-53	2-256
	002	19.01	3-143	
	003	18.01	3-139	
TSR-M-136	001	13.00.15	3-85	2-257
	002	19.01	3-143	
	003	13.00.02	3-79	
	004	04.02.01	3-12	
	005	18.01	3-139	
	006	08.14	3-34	
TSR-M-137	001	13.08.01	3-122	2-258
TSR-M-138	001	13.09.01	3-123	2-259
	002	10.02	3-39	
	003	13.00.54	3-98	
	004	13.02.01	3-105	
	005	13.00.17	3-85	
	006	13.04.22	3-117	
TSR-M-139	001	13.09.01	3-123	2-260
	002	22.02	3-147	

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Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
	003	13.01.01	3-104	
	004	13.05.01	3-119	
	005	13.04.14	3-115	
	006	13.00.29	3-91	
TSR-M-140	001	04.02.12	3-19	2-262
	002	18.01	3-139	
	003	13.04.01	3-111	
	004	20.01	3-144	
TSR-M-141	001	06.16	3-27	2-263
	002	15.01	3-128	
TSR-M-142	001	13.00.01	3-79	2-263
	002	18.14	3-142	
	003	13.00.08	3-83	
	004	08.12	3-33	
TSR-M-143	001	13.08.03	3-123	2-268
	002	19.01	3-143	
TSR-M-144	001	11.00.12	3-53	2-269
	002	18.01	3-139	
	003	19.01	3-143	
TSR-M-145	001	13.00.01	3-79	2-270
TSR-M-147	001	04.02.01	3-12	2-270
	002	13.08.03	3-123	
	003	18.01	3-139	
TSR-M-148	001	15.01	3-128	2-271
	002	13.08.03	3-123	
TSR-M-149	001	14.02	3-126	2-272
	002	04.02.01	3-12	
	003	15.09	3-130	
	004	18.01	3-139	
	005	20.01	3-143	
	006	10.20	3-44	
TSR-M-150	001	15.08	3-130	2-273
	002	10.09	3-41	
TSR-M-151	001	18.08	3-141	2-273
TSR-M-152	001	15.03	3-129	2-274
TSR-M-153	001	No comment identified		2-274
TSR-M-154	001	13.00.47	3-96	2-275
	002	02.04	3-6	
	003	13.07.03	3-122	
	004	13.04.15	3-115	
	005	13.00.48	3-96	
	006	22.02	3-147	
	007	10.21	3-44	
	008	18.09	3-141	

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Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
	009	22.01	3-146	
	010	16.14	3-134	
	011	06.08	3-24	
	012	10.22	3-45	
	013	09.10	3-39	
	014	13.04.20	3-117	
	015	10.23	3-45	
	016	13.04.15	3-115	
	017	03.07	3-11	
	018	04.01.02	3-12	
	019	04.01.02	3-12	
	020	04.02.11	3-19	
	021	08.16	3-34	
	022	10.18	3-43	
	023	10.36	3-48	
	024	06.10	3-25	
	025	06.07	3-24	
	026	06.12	3-26	
	027	10.27	3-46	
	028	10.18	3-43	
	029	13.00.50	3-97	
	030	17.04	3-139	
	031	08.17	3-35	
	032	11.00.22	3-56	
TSR-M-156	001	13.00.01	3-79	2-277
TSR-M-159	001	18.01	3-139	2-278
TSR-M-160	001	13.09.01	3-123	2-278
	002	13.00.05	3-81	
TSR-M-162	001	13.00.01	3-79	2-279
TSR-M-163	001	13.00.01	3-79	2-279
TSR-M-164	001	15.03	3-129	2-280
	002	13.04.09	3-114	
	003	10.19	3-44	
TSR-M-165	001	13.01.01	3-104	2-280
	002	13.00.55	3-99	
TSR-M-166	001	18.01	3-139	2-282
TSR-M-167	001	08.02	3-29	2-284
	002	12.06	3-77	
	003	09.09	3-38	
	004	21.01	3-146	
	005	13.06.04	3-121	
	006	04.02.02	3-13	
	007	05.06	3-21	
	008	05.03	3-20	

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Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
	009	16.08	3-133	
	010	22.02	3-147	
TSR-M-168	001	11.00.20	3-55	2-290
	002	13.04.07	3-113	
	003	13.00.05	3-81	
TSR-M-169	001	No comment identified		2-291
TSR-M-170	001	13.09.01	3-123	2-292
	002	13.00.05	3-81	
TSR-M-171	001	13.00.01	3-79	2-295
TSR-M-172	001	13.00.19	3-87	2-295
	002	13.00.07	3-83	
TSR-M-175	001	15.02	3-128	2-299
	002	18.12	3-142	
	003	18.15	3-142	
	004	18.01	3-139	
	005	13.00.09	3-83	
	006	15.05	3-129	
	007	13.00.05	3-81	
	008	12.05	3-77	
	009	16.22	3-137	
TSR-M-176	001	13.08.03	3-123	2-301
TSR-M-177	001	13.08.01	3-122	2-301
TSR-M-178	001	13.09.01	3-123	2-302
	002	13.00.05	3-81	
TSR-M-179	001	18.01	3-139	2-302
TSR-M-180	001	13.00.01	3-79	2-303
TSR-M-181	001	13.09.01	3-123	2-303
TSR-M-182	001	13.09.01	3-123	2-304
TSR-M-183	001	13.08.01	3-122	2-304
	002	14.09	3-128	
TSR-M-185	001	13.06.01	3-120	2-305
TSR-M-186	001	04.02.01	3-12	2-306
	002	13.08.01	3-122	
	003	04.02.01	3-12	
	004	13.08.04	3-123	
TSR-M-187	001	13.06.01	3-120	2-307
TSR-M-189	001	13.06.01	3-120	2-309
TSR-P-001	001	18.01	3-139	2-309
TSR-P-002	001	18.01	3-139	2-310
	002	13.09.04	3-124	
TSR-P-003	001	12.02	3-75	2-310
TSR-P-004	001	18.01	3-139	2-311
	002	20.01	3-144	
TSR-P-005	001	13.08.01	3-122	2-311

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Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
TSR-P-006	001	20.01	3-144	2-312
TSR-P-007	001	18.01	3-139	2-312
TSR-P-008	001	15.01	3-128	2-313
TSR-P-009	001	13.05.01	3-119	2-313
	002	15.04	3-129	
TSR-P-010	001	14.04	3-127	2-314
TSR-P-011	001	13.09.01	3-123	2-315
TSR-P-012	001	18.01	3-139	2-316
TSR-P-013	001	13.09.04	3-124	2-317
	002	18.01	3-139	
TSR-P-015	001	13.06.01	3-120	2-317
TSR-P-016	001	13.06.01	3-120	2-318
TSR-P-017	001	18.01	3-139	2-318
TSR-P-018	001	13.06.01	3-120	2-319
TSR-P-019	001	13.06.01	3-120	2-319
TSR-P-020	001	13.06.01	3-120	2-320
TSR-P-021	001	20.01	3-144	2-320
TSR-P-022	001	No comment identified		2-321
TSR-P-023	001	18.01	3-139	2-321
TSR-P-024	001	13.06.01	3-120	2-322
TSR-P-025	001	08.02	3-29	2-322
	002	13.04.01	3-111	
TSR-P-026	001	13.06.01	3-120	2-323
TSR-P-027	001	08.02	3-29	2-323
TSR-P-028	001	04.02.04	3-14	2-324
	002	05.01	3-20	
	003	09.04	3-37	
TSR-P-029	001	13.00.11	3-84	2-325
TSR-P-030	001	18.01	3-139	2-325
TSR-P-031	001	13.00.01	3-79	2-326
TSR-P-032	001	13.05.02	3-120	2-326
	002	04.02.04	3-14	
TSR-P-033	001	18.01	3-139	2-327
TSR-P-034	001	20.01	3-144	2-327
TSR-P-035	001	18.02	3-140	2-328
TSR-P-036	001	13.05.01	3-119	2-328
TSR-P-037	001	04.02.04	3-14	2-329
TSR-P-038	001	18.01	3-139	2-329
TSR-P-039	001	13.05.01	3-119	2-330
	002	18.06	3-141	
TSR-P-040	001	08.06	3-31	2-330
TSR-P-041	001	13.05.01	3-119	2-331
TSR-P-042	001	13.05.01	3-119	2-331
TSR-P-043	001	13.00.07	3-83	2-332

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Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
TSR-P-044	001	13.05.01	3-119	2-332
TSR-P-045	001	18.01	3-139	2-333
TSR-P-046	001	13.05.02	3-120	2-333
	002	14.02	3-126	
TSR-P-047	001	08.06	3-31	2-334
TSR-P-048	001	18.15	3-142	2-334
TSR-P-050	001	18.01	3-139	2-335
TSR-P-052	001	14.04	3-127	2-335
	002	04.02.04	3-14	
	003	09.04	3-37	
TSR-P-053	001	08.05	3-31	2-336
TSR-P-054	001	15.01	3-128	2-336
TSR-P-055	001	18.01	3-139	2-337
	002	15.01	3-128	
TSR-P-056	001	13.09.01	3-123	2-338
TSR-P-057	001	13.09.01	3-123	2-339
TSR-P-058	001	13.09.01	3-123	2-339
	002	20.08	3-145	
TSR-P-059	001	13.09.01	3-123	2-340
	002	08.04	3-30	
TSR-P-060	001	13.09.01	3-123	2-340
TSR-P-061	001	18.01	3-139	2-341
	002	11.00.12	3-53	
TSR-P-062	001	13.09.01	3-123	2-341
TSR-P-063	001	13.09.01	3-123	2-342
TSR-P-064	001	19.01	3-143	2-342
TSR-P-065	001	13.00.01	3-79	2-343
	002	15.01	3-128	
TSR-P-066	001	13.09.01	3-123	2-343
TSR-P-067	001	18.01	3-139	2-344
	002	20.01	3-144	
TSR-P-068	001	13.09.01	3-123	2-344
TSR-P-069	001	18.01	3-139	2-345
TSR-P-070	001	13.09.01	3-123	2-345
TSR-P-071	001	18.01	3-139	2-346
TSR-P-072	001	13.04.01	3-111	2-346
TSR-P-073	001	18.01	3-139	2-347
	002	20.01	3-144	
TSR-P-074	001	18.01	3-139	2-347
	002	04.02.01	3-12	
TSR-P-075	001	13.05.02	3-120	2-348
TSR-P-076	001	10.19	3-44	2-348
TSR-P-077	001	13.04.01	3-111	2-349
	002	13.06.01	3-120	

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Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
	003	13.04.05	3-113	
	004	09.05	3-37	
TSR-P-078	001	13.00.34	3-92	2-349
	002	13.04.03	3-112	
	003	13.01.02	3-104	
	004	13.03.01	3-107	
	005	13.02.01	3-105	
	006	13.00.56	3-99	
TSR-P-079	001	13.00.01	3-79	2-350
TSR-P-080	001	13.04.01	3-111	2-351
	002	04.02.01	3-12	
	003	09.09	3-38	
	004	13.08.02	3-123	
	005	06.05	3-23	
	006	11.00.23	3-56	
	007	03.04	3-10	
	008	05.02	3-20	
	009	13.08.01	3-122	
TSR-P-081	001	18.01	3-139	2-352
	002	04.02.01	3-12	
	003	13.04.01	3-111	
TSR-P-082	001	13.07.01	3-122	2-353
TSR-P-083	001	13.00.01	3-79	2-354
TSR-P-084	001	04.02.01	3-12	2-354
	002	18.01	3-139	
	003	10.09	3-41	
TSR-P-085	001	13.00.01	3-79	2-355
TSR-P-086	001	13.09.01	3-123	2-356
	002	22.01	3-146	
TSR-P-087	001	16.07	3-133	2-357
	002	04.02.01	3-12	
	003	15.08	3-130	
TSR-P-088	001	01.05	3-2	2-358
	002	04.02.04	3-14	
	003	07.03	3-28	
	004	14.01	3-125	
TSR-P-089	001	18.01	3-139	2-359
	002	15.03	3-129	
	003	15.06	3-129	
	004	19.02	3-143	
TSR-P-090	001	13.07.01	3-122	2-361
TSR-PC-002	001	13.08.01	3-122	2-361
TSR-PC-003	001	04.02.01	3-12	2-363
	002	13.08.01	3-122	

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Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
	003	11.00.23	3-56	
	004	09.09	3-38	
	005	10.10	3-41	
	006	06.03	3-22	
	007	05.02	3-20	
	008	16.15	3-135	
	009	13.08.01	3-122	
	010	13.04.17	3-116	
TSR-PC-004	001	13.09.01	3-123	2-367
	002	13.00.05	3-81	
TSR-PC-006	001	13.09.01	3-123	2-367
	002	13.09.06	3-125	
	003	13.00.05	3-81	
TSR-PC-008	001	04.02.01	3-12	2-368
	002	13.08.04	3-123	
	003	01.03	3-1	
	004	18.01	3-139	
	005	13.00.01	3-79	
TSR-PC-011	001	13.00.01	3-79	2-369
	002	18.01	3-139	
TSR-PC-012	001	13.09.01	3-123	2-369
	002	18.11	3-142	
	003	13.00.05	3-81	
TSR-NE-002	001	22.02	3-147	2-370
TSR-NF-001	001	13.00.07	3-83	2-371
	002	18.04	3-140	
TSR-NM-001	001	22.02	3-147	2-371
	002	18.01	3-139	
	003	23.01	3-148	
TSR-NM-002	001	13.00.05	3-81	2-372
	002	22.02	3-147	
TSR-NM-003	001	22.02	3-147	2-372
TSR-NM-004	001	22.02	3-147	2-373
	002	23.01	3-148	
TSR-NM-005	001	20.01	3-144	2-373
TSR-NM-006	001	15.07	3-130	2-374
	002	22.02	3-147	
TSR-NM-007	001	22.02	3-147	2-374
TSR-NM-008	001	22.02	3-147	2-375
TSR-NM-009	001	13.00.05	3-81	2-375
	002	22.02	3-147	
	003	13.04.03	3-112	
	004	13.00.17	3-85	
TSR-NM-010	001	20.01	3-144	2-377

TABLE 1.3–5.—*Comment Document and Summary Locator* [Page 24 of 25]

Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
TSR-NM-011	001	18.15	3-142	2-377
	002	19.01	3-143	
	003	13.00.55	3-99	
TSR-NM-012	001	22.02	3-147	2-378
	002	13.00.05	3-81	
TSR-NM-013	001	13.00.55	3-99	2-380
	002	23.01	3-148	
	003	22.02	3-147	
TSR-NM-014	001	22.04	3-148	2-382
	002	22.02	3-147	
	003	22.04	3-148	
TSR-NM-015	001	22.02	3-147	2-384
	002	23.01	3-148	
	003	11.02.01	3-70	
	004	20.01	3-144	
	005	07.01	3-27	
TSR-NM-016	001	22.02	3-147	2-384
	002	13.09.04	3-124	
	003	18.01	3-139	
TSR-NM-017	001	18.01	3-139	2-385
TSR-NM-018	001	13.09.04	3-124	2-385
	002	13.00.20	3-87	
	003	18.01	3-139	
	004	22.02	3-147	
	005	22.01	3-146	
	006	18.01	3-139	
TSR-NM-019	001	22.04	3-148	2-386
	002	18.01	3-139	
	003	13.00.20	3-87	
TSR-NM-020	001	13.00.20	3-87	2-386
	002	22.02	3-147	
TSR-NM-021	001	18.01	3-139	2-387
	002	13.09.04	3-124	
TSR-NM-022	001	18.01	3-139	2-387
	002	19.01	3-143	
	003	22.02	3-147	
TSR-NM-023	001	22.02	3-147	2-388
TSR-NM-025	001	16.02	3-131	2-389
	002	22.02	3-147	
TSR-NM-026	001	22.02	3-147	2-391
	002	13.01.01	3-104	
	003	23.01	3-148	
TSR-NM-027	001	18.01	3-139	2-392
	002	18.15	3-142	

TABLE 1.3–5.—*Comment Document and Summary Locator* [Page 25 of 25]

Document Number	Comment Number	Issue Code	Summary Page Number	Comment Document Page Number
	003	23.01	3-148	
	004	22.02	3-147	
	005	14.01	3-125	
	006	13.00.55	3-99	
TSR-NM-028	001	22.02	3-147	2-393
	002	18.01	3-139	
TSR-NM-029	001	22.02	3-147	2-393
	002	13.04.03	3-112	
	003	13.00.55	3-99	
	004	13.09.01	3-123	
TSR-NM-030	001	18.01	3-139	2-394
	002	19.01	3-143	
	003	22.02	3-147	
	004	23.01	3-148	
	005	22.04	3-148	
	006	18.15	3-142	
TSR-NM-032	001	22.02	3-147	2-400
	002	18.01	3-139	
TSR-NM-033	001	22.02	3-147	2-401
TSR-NM-034	001	22.02	3-147	2-402
	002	18.01	3-139	
	003	10.02	3-39	
TSR-NM-035	001	18.15	3-142	2-403
	002	22.02	3-147	
	003	19.01	3-143	
TSR-NM-037	001	18.01	3-139	2-403
	002	20.05	3-145	
	003	19.01	3-143	
	004	22.02	3-147	
TSR-NM-040	001	22.02	3-147	2-404
	002	13.04.01	3-111	

TABLE 1.3–6—*Comments Sorted by Summary Code* [Page 1 of 13]

Summary Code	Total Comments Received	Summary Page Number	Document Page Number
		Land Resources	
01.01	2	3-1	2-132, 141
01.02	1	3-1	2-34
01.03	33[a]	3-1	2-368
01.04	1	3-2	2-3
01.05	1	3-2	2-358
01.06	1	3-2	2-69
01.07	1	3-3	2-69
01.08	1	3-3	2-69
01.09	1	3-3	2-217
		Site Infrastructure	
02.01	15	3-4	2-3, 8, 11, 13, 26, 31, 34, 37, 133, 217, 240, 253
02.02	5	3-5	2-1, 6, 11, 34
02.03	5	3-5	2-24, 98, 217
02.04	23	3-6	2-11, 13, 18, 24, 28, 31, 38, 69, 101, 124, 130, 143, 194, 198, 217, 275
02.05	1	3-7	2-31
02.06	1	3-7	2-66
02.07	1	3-7	2-104
02.08	2	3-8	2-18
02.09	4	3-8	2-11, 217, 240
02.10	1	3-8	2-1
02.11	1	3-9	2-240
		Air Quality and Acoustics	
03.01	4	3-9	2-20, 37
03.02	1	3-9	2-240
03.03	1	3-10	2-104
03.04	3	3-10	2-69, 133, 351
03.05	1	3-11	2-104
03.06	1	3-11	2-217
03.07	1	3-11	2-275
03.08	1	3-11	2-41
03.09	1	3-11	2-41
		Surface Water	
04.01.01	1	3-11	2-8
04.01.02	2	3-12	2-275
04.01.03	1	3-12	2-240
04.01.04	1	3-12	2-104
		Groundwater	
04.02.01	79[a]	3-12	2-1, 31, 34, 35, 36, 37, 38, 55, 69, 104, 130, 132, 133, 141, 213, 240, 253, 255, 257, 270, 272, 306, 347, 351, 352, 354, 357, 363, 368
04.02.02	15	3-13	2-1, 5, 31, 36, 37, 66, 98, 104, 284
04.02.03	2	3-14	2-6
04.02.04	11	3-14	2-15, 104, 240, 324, 326, 329, 335, 358

TABLE 1.3–6—*Comments Sorted by Summary Code* [Page 2 of 13]

Summary Code	Total Comments Received	Summary Page Number	Document Page Number
04.02.05	3	3-16	2-31, 34
04.02.06	1	3-16	2-104
04.02.07	6	3-17	2-20, 28, 34, 36, 37
04.02.08	1	3-18	2-240
04.02.09	2	3-18	2-104, 207
04.02.10	3	3-18	2-28, 31, 133
04.02.11	1	3-19	2-275
04.02.12	1	3-19	2-262
		Geology and Soils	
05.01	4	3-20	2-6, 8, 37, 324
05.02	4[a]	3-20	2-351, 363
05.03	1	3-20	2-284
05.04	1	3-21	2-69
05.05	1	3-21	2-98
05.06	1	3-21	2-284
05.07	1	3-21	2-9
		Biotic Resources	
06.01	2	3-22	2-55, 141
06.02	2	3-22	2-1, 34
06.03	3[a]	3-22	2-363
06.04	1	3-23	2-46
06.05	2	3-23	2-69, 351
06.06	1	3-24	2-104
06.07	1	3-24	2-275
06.08	1	3-24	2-275
06.09	2	3-24	2-104
06.10	2	3-25	2-240, 275
06.11	1	3-25	2-104
06.12	1	3-26	2-275
06.13	1	3-26	2-69
06.14	1	3-27	2-58
06.15	1	3-27	2-58
06.16	1	3-27	2-263
06.17	2	3-27	2-34, 133
		Cultural and Paleontological Resources	
07.01	2	3-27	2-191, 384
07.02	1	3-28	2-34
07.03	1	3-28	2-358
07.04	1	3-29	2-133
07.05	1	3-29	2-69
		Socioeconomics	
08.01	1	3-29	2-13
08.02	18	3-29	2-1, 6, 9, 41, 42, 138, 142, 147, 150, 284, 322, 323

TABLE 1.3–6—*Comments Sorted by Summary Code* [Page 3 of 13]

Summary Code	Total Comments Received	Summary Page Number	Document Page Number
08.03	8	3-30	2-6, 18, 20, 34
08.04	5	3-30	2-24, 127, 208, 340
08.05	3	3-31	2-38, 213, 336
08.06	2	3-31	2-330, 334
08.07	3	3-31	2-1, 3
08.08	4	3-32	2-1, 6, 155
08.09	1	3-32	2-104
08.10	4	3-32	2-20, 58, 98, 133
08.11	2	3-33	2-34, 133
08.12	1	3-33	2-263
08.13	1	3-34	2-66
08.14	1	3-34	2-257
08.15	1	3-34	2-96
08.16	1	3-34	2-275
08.17	1	3-35	2-275
08.18	1	3-35	2-240
08.19	1	3-35	2-240
08.20	1	3-36	2-240
08.21	1	3-36	2-104
08.22	1	3-36	2-104
			Intersite Transportation
09.01	1	3-36	2-8
09.02	1	3-37	2-9
09.03	1	3-37	2-55
09.04	3	3-37	2-240, 324, 335
09.05	2	3-37	2-8, 349
09.06	1	3-38	2-37
09.07	1	3-38	2-240
09.08	1	3-38	2-8
09.09	6[a]	3-38	2-148, 284, 351, 363
09.10	1	3-39	2-275
			Waste Management
10.01	6	3-39	2-1, 6, 8, 9, 192
10.02	16	3-39	2-1, 6, 15, 20, 24, 37, 39, 136, 172, 181, 234, 252, 259, 402
10.03	5	3-40	2-31, 35, 38, 199
10.04	1	3-40	2-127
10.05	1	3-40	2-8
10.06	2	3-41	2-18, 28
10.07	1	3-41	2-15
10.08	2	3-41	2-13
10.09	3	3-41	2-39, 273, 354
10.10	5[a]	3-41	2-31, 69, 363
10.11	1	3-42	2-20

TABLE 1.3–6—*Comments Sorted by Summary Code* [Page 4 of 13]

Summary Code	Total Comments Received	Summary Page Number	Document Page Number
10.12	1	3-42	2-217
10.13	1	3-42	2-21
10.14	1	3-42	2-24
10.15	1	3-43	2-24
10.16	1	3-43	2-13
10.17	1	3-43	2-8
10.18	5	3-43	2-18, 20, 66, 275
10.19	2	3-44	2-280, 348
10.20	1	3-44	2-272
10.21	1	3-44	2-275
10.22	1	3-45	2-275
10.23	1	3-45	2-275
10.24	1	3-45	2-141
10.25	1	3-45	2-18
10.26	3	3-46	2-18, 35
10.27	1	3-46	2-275
10.28	1	3-46	2-128
10.29	2	3-46	2-31
10.30	1	3-46	2-240
10.31	1	3-46	2-240
10.32	1	3-47	2-240
10.33	1	3-47	2-240
10.34	1	3-47	2-104
10.35	1	3-48	2- 240
10.36	2	3-48	2-199, 275
10.37	4	3-49	2-15, 104, 240
10.38	2	3-49	2-240
			Human Health
11.00.01	1	3-50	2-3
11.00.02	1	3-50	2-102
11.00.03	1	3-50	2-24
11.00.04	1	3-50	2-6
11.00.05	1	3-51	2-11
11.00.06	1	3-51	2-189
11.00.07	3	3-51	2-24, 28, 183
11.00.08	2	3-51	2-98, 143
11.00.09	1	3-52	2-24
11.00.10	5	3-52	2-24, 34, 98, 147, 216
11.00.11	1	3-53	2-28
11.00.12	12	3-53	2-20, 34, 173, 211, 213, 214, 255, 256, 269, 341
11.00.13	1	3-53	2-20
11.00.14	1	3-54	2-28
11.00.15	1	3-54	2-98

TABLE 1.3–6—*Comments Sorted by Summary Code* [Page 5 of 13]

Summary Code	Total Comments Received	Summary Page Number	Document Page Number
11.00.16	1	3-54	2-41
11.00.17	1	3-54	2-119
11.00.18	1	3-54	2-11
11.00.19	2	3-55	2-98, 217
11.00.20	3	3-55	2-217, 290
11.00.21	1	3-56	2-18
11.00.22	1	3-56	2-275
11.00.23	4[a]	3-56	2-351, 363
11.00.24	1	3-57	2-31
11.00.25	1	3-57	2-69
11.00.26	1	3-57	2-217
11.00.27	1	3-57	2-240
11.00.28	1	3-58	2-217
11.00.29	2	3-58	2-162, 232
11.00.30	1	3-58	2-189
11.00.31	1	3-58	2-189
11.00.32	1	3-59	2-189
11.00.33	1	3-59	2-53
11.00.34	1	3-59	2-53
11.00.35	1	3-59	2-8
11.00.36	1	3-60	2-46
11.00.37	2	3-60	2-53, 240
		Human Health Normal Operations	
11.01.01	1	3-60	2-18
11.01.02	1	3-61	2-255
11.01.03	1	3-61	2-58
11.01.04	1	3-61	2-240
11.01.05	1	3-61	2-240
11.01.06	1	3-63	2-240
11.01.07	1	3-63	2-240
11.01.08	1	3-63	2-240
11.01.09	1	3-64	2-240
11.01.10	1	3-64	2-240
11.01.11	1	3-65	2-240
11.01.12	1	3-66	2-240
11.01.13	1	3-66	2-240
11.01.14	1	3-66	2-240
11.01.15	1	3-66	2-240
11.01.16	1	3-67	2-240
11.01.17	1	3-67	2-240
11.01.18	1	3-67	2-240
11.01.19	1	3-67	2-104
11.01.20	1	3-67	2-240

TABLE 1.3–6—*Comments Sorted by Summary Code* [Page 6 of 13]

Summary Code	Total Comments Received	Summary Page Number	Document Page Number
11.01.21	1	3-68	2-240
11.01.22	1	3-68	2-217
11.01.23	1	3-68	2-217
11.01.24	2	3-68	2-217
11.01.25	1	3-68	2-217
11.01.26	1	3-68	2-217
11.01.27	1	3-69	2-217
11.01.28	1	3-69	2-217
11.01.29	1	3-69	2-217
11.01.30	1	3-69	2-217
11.01.31	1	3-69	2-217
11.01.32	1	3-69	2-217
11.01.33	1	3-70	2-217
11.01.34	1	3-70	2-217
11.01.35	1	3-70	2-217
11.01.36	1	3-70	2-217
		Human Health Facility Accidents	
11.02.01	2	3-70	2-128, 384
11.02.02	1	3-71	2-240
11.02.03	1	3-71	2-240
11.02.04	2	3-71	2-98, 199
11.02.05	1	3-72	2-217
11.02.06	1	3-72	2-104
11.02.07	1	3-72	2-98
11.02.08	1	3-72	2-217
11.02.09	1	3-73	2-217
11.02.10	1	3-73	2-217
11.02.11	1	3-73	2-217
11.02.12	2	3-73	2-217
11.02.13	1	3-73	2-217
11.02.14	1	3-73	2-217
11.02.15	1	3-74	2-217
11.02.16	1	3-74	2-217
11.02.17	12	3-74	2-11, 13, 18, 28
		General/Miscellaneous Environmental	
12.01	1	3-75	2-1
12.02	4	3-75	2-1, 6, 157, 310
12.03	1	3-75	2-104
12.04	1	3-76	2-39
12.05	5	3-77	2-28, 96, 217, 240, 299
12.06	1	3-77	2-284
12.07	1	3-77	2-34
12.08	2	3-78	2-104, 240

TABLE 1.3–6—*Comments Sorted by Summary Code* [Page 7 of 13]

Summary Code	Total Comments Received	Summary Page Number	Document Page Number
12.09	1	3-78	2-20
12.10	1	3-78	2-28
		Tritium Supply and Recycling Proposal and Alternatives	
13.00.01	85[a]	3-79	2-17, 46, 57, 58, 95, 136, 137, 138, 141, 146, 153, 157, 158, 159, 160, 164, 167, 193, 211, 213, 252, 263, 270, 277, 279, 295, 303, 326, 343, 350, 354, 355, 368, 369
13.00.02	14	3-79	2-6, 18, 21, 26, 98, 143, 173, 257
13.00.03	3	3-80	2-217
13.00.04	1	3-80	2-217
13.00.05	134[a]	3-81	2-4, 11, 13, 15, 24, 26, 28, 30, 35, 37, 98, 101, 110, 115, 116, 123, 124, 127, 143, 192, 217, 278, 290, 292, 299, 302, 367, 369, 372, 375, 378
13.00.06	1	3-82	2-174
13.00.07	6	3-83	2-4, 5, 57, 295, 332, 371
13.00.08	1	3-83	2-263
13.00.09	3	3-83	2-10, 58, 208, 299
13.00.10	2	3-84	2-10, 69
13.00.11	2	3-84	2-4, 325
13.00.12	1	3-84	2-208
13.00.13	1	3-84	2-240
13.00.14	8	3-85	2-11, 15, 21, 26, 30, 102
13.00.15	5	3-85	2-1, 11, 31, 257
13.00.16	8	3-85	2-5, 21, 58, 95, 157, 169
13.00.17	12	3-85	2-3, 6, 11, 15, 17, 18, 21, 26, 135, 259, 375
13.00.18	4	3-86	2-26, 217
13.00.19	7	3-87	2-18, 21, 47, 240, 295
13.00.20	10	3-87	2-13, 15, 28, 170, 233, 385, 386
13.00.21	2	3-88	2-98, 235
13.00.22	6	3-88	2-128, 217, 238, 354
13.00.23	1	3-89	2-15
13.00.24	1	3-89	2-217
13.00.25	1	3-89	2-198
13.00.26	1	3-89	2-174
13.00.27	1	3-90	2-126
13.00.28	1	3-90	2-174
13.00.29	1	3-91	2-260
13.00.30	1	3-91	2-217
13.00.31	2	3-91	2-101, 208
13.00.32	1	3-92	2-21
13.00.33	2	3-92	2-52, 217
13.00.34	2	3-92	2-47, 349
13.00.35	3	3-92	2-98, 143, 217
13.00.36	1	3-93	2-17
13.00.37	6	3-93	2-24, 30, 118

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Summary Code	Total Comments Received	Summary Page Number	Document Page Number
13.00.38	3	3-94	2-37, 45, 130
13.00.39	4	3-94	2-18, 24, 104
13.00.40	2	3-94	2-28, 47
13.00.41	1	3-95	2-240
13.00.42	1	3-95	2-34
13.00.43	1	3-95	2-47
13.00.44	1	3-95	2-96
13.00.45	1	3-95	2-96
13.00.46	1	3-96	2-96
13.00.47	1	3-96	2-275
13.00.48	1	3-96	2-275
13.00.49	1	3-96	2-174
13.00.50	1	3-97	2-275
13.00.51	1	3-98	2-47
13.00.52	1	3-98	2-240
13.00.53	2	3-98	2-240
13.00.54	1	3-98	2-259
13.00.55	7	3-99	2-58, 182, 280, 377, 380, 392, 393
13.00.56	1	3-99	2-349
13.00.57	1	3-99	2-217
13.00.58	1	3-99	2-98
13.00.59	4	3-100	2-217
13.00.60	3	3-101	2-143, 217
13.00.61	1	3-102	2-98
13.00.62	1	3-103	2-98
13.00.63	1	3-103	2-47
13.00.64	1	3-103	2-47
13.00.65	1	3-103	2-47
13.00.66	2	3-103	2-174
		Heavy Water Reactor Technology	
13.01.01	3	3-104	2-260, 280, 391
13.01.02	1	3-105	2-349
13.01.03	1	3-105	2-128
13.01.04	1	3-105	2-116
		Modular High Temperature Gas-Cooled Reactor Technology	
13.02.01	4	3-105	2-26, 30, 259, 349
13.02.02	1	3-105	2-217
13.02.03	1	3-106	2-217
13.02.04	1	3-106	2-217
13.02.05	1	3-106	2-217
13.02.06	1	3-106	2-217
13.02.07	1	3-106	2-217
13.02.08	1	3-106	2-217

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Summary Code	Total Comments Received	Summary Page Number	Document Page Number
13.02.09	1	3-107	2-217
13.02.10	1	3-107	2-217
13.02.11	1	3-107	2-217
		Advanced Light Water Reactor Technology	
13.03.01	4	3-107	2-9, 198, 238, 349
13.03.02	1	3-108	2-143
13.03.03	1	3-108	2-96
13.03.04	1	3-109	2-96
13.03.05	2	3-109	2-217
13.03.06	1	3-109	2-217
13.03.07	2	3-109	2-98, 217
13.03.08	1	3-110	2-174
13.03.09	1	3-110	2-98
13.03.10	1	3-110	2-98
13.03.11	1	3-111	2-98
13.03.12	1	3-111	2-98
		Accelerator Production of Tritium Technology	
13.04.01	20	3-111	2-8, 9, 10, 11, 13, 35, 52, 54, 55, 58, 104, 154, 262, 280, 322, 346, 349, 351, 352, 404
13.04.02	3	3-111	2-18, 98, 199
13.04.03	17	3-112	2-18, 19, 21, 24, 26, 30, 98, 183, 349, 375, 393
13.04.04	1	3-112	2-174
13.04.05	8	3-113	2-4, 9, 20, 28, 37, 150, 349
13.04.06	2	3-113	2-30, 217
13.04.07	6	3-113	2-24, 98, 130, 290
13.04.08	1	3-114	2-45
13.04.09	3	3-114	2-13, 18, 37
13.04.10	1	3-114	2-31
13.04.11	2	3-114	2-30, 124
13.04.12	1	3-114	2-199
13.04.13	1	3-115	2-199
13.04.14	1	3-115	2-260
13.04.15	2	3-115	2-275
13.04.16	1	3-116	2-11
13.04.17	14[a]	3-116	2-4, 9, 10, 18, 26, 30, 35, 39, 150, 363
13.04.18	1	3-116	2-69
13.04.19	1	3-117	2-217
13.04.20	1	3-117	2-275
13.04.21	1	3-117	2-98
13.04.22	4	3-117	2-28, 259
13.04.23	1	3-118	2-217
13.04.24	1	3-118	2-217
13.04.25	1	3-119	2-217

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Summary Code	Total Comments Received	Summary Page Number	Document Page Number
13.04.26	1	3-119	2-217
13.04.27	1	3-119	2-217
13.04.28	2	3-119	2-30, 98
		Idaho National Engineering Laboratory Site	
13.05.01	7	3-119	2-260, 313, 328, 330, 331, 332
13.05.02	5	3-120	2-211, 240, 326, 333, 348
13.05.03	1	3-120	2-98
13.05.04	1	3-120	2-238
		Nevada Test Site	
13.06.01	40	3-120	2-1, 5, 6, 8, 9, 10, 43, 45, 52, 54, 66, 97, 142, 145, 146, 150, 153, 154, 155, 166, 192, 305, 307, 309, 317, 318, 319, 320, 322, 323, 349
13.06.02	1	3-121	2-155
13.06.03	4	3-121	2-4, 5, 8
13.06.04	2	3-121	2-31, 284
		Oak Ridge Reservation Site	
13.07.01	5	3-122	2-139, 172, 211, 353, 361
13.07.02	1	3-122	2-96
13.07.03	1	3-122	2-275
		Pantex Plant	
13.08.01	42[a]	3-122	2-31, 36, 51, 52, 55, 69, 132, 133, 137, 160, 162, 163, 165, 168, 170, 180, 209, 232, 258, 301, 304, 306, 311, 351, 361, 363
13.08.02	1	3-123	2-351
13.08.03	6	3-123	2-31, 240, 268, 270, 271, 301
13.08.04	34[a]	3-123	2-306, 368
		Savannah River Site	
13.09.01	168[a]	3-123	2-18, 23, 24, 26, 30, 44, 45, 68, 101, 110, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 126, 127, 129, 184, 192, 198, 206, 210, 214, 238, 259, 260, 278, 292, 302, 303, 304, 315, 338, 339, 340, 341, 342, 343, 344, 345, 356, 367, 369, 393
13.09.02	1	3-124	2-148
13.09.03	1	3-124	2-24
13.09.04	8	3-124	2-28, 139, 206, 310, 317, 384, 385, 387
13.09.05	1	3-125	2-24
13.09.06	36[a]	3-125	2-11, 21, 367
13.09.07	2	3-125	2-1, 148
		Relationship To Other Department of Energy Programs/Activities	
14.01	30	3-125	2-3, 4, 8, 11, 13, 18, 24, 26, 35, 36, 39, 47, 96, 98, 199, 217, 240, 358, 392
14.02	6	3-126	2-6, 42, 159, 207, 272, 333
14.03	3	3-127	2-132, 162, 170
14.04	3	3-127	2-144, 314, 335
14.05	1	3-127	2-192
14.06	1	3-127	2-217
14.07	1	3-127	2-24, 26

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Summary Code	Total Comments Received	Summary Page Number	Document Page Number
14.08	2	3-127	2-18, 21
14.09	6	3-128	2-132, 162, 170, 209, 232, 304
		Public Involvement/Community Relations	
15.01	21	3-128	2-5, 9, 10, 35, 39, 57, 68, 142, 162, 170, 181, 198, 209, 263, 271, 313, 336, 337, 343
15.02	1	3-128	2-299
15.03	17	3-129	2-3, 4, 5, 6, 15, 40, 181, 274, 280, 359
15.04	3	3-129	2-23, 150, 313
15.05	3	3-129	2-23, 174, 299
15.06	1	3-129	2-359
15.07	7	3-130	2-11, 24, 34, 35, 374
15.08	3	3-130	2-255, 273, 357
15.09	2	3-130	2-58, 272
15.10	1	3-130	2-24
		***National Environmental Policy Act* Process**	
16.01	14	3-130	2-3, 5, 6, 9, 15, 17, 28, 30, 49
16.02	2	3-131	2-6, 389
16.03	3	3-131	2-3, 10, 39
16.04	1	3-131	2-174
16.05	2	3-132	2-24, 68
16.06	2	3-132	2-131, 150
16.07	7	3-133	2-13, 39, 98, 101, 143, 238, 257
16.08	3	3-133	2-28, 128, 284
16.09	1	3-133	2-8
16.10	1	3-133	2-18
16.11	1	3-133	2-26
16.12	11	3-133	2-3, 6, 11, 18, 23, 26, 34, 38, 124
16.13	1	3-134	2-128
16.14	6	3-134	2-11, 58, 69, 84, 217, 275
16.15	3[a]	3-135	2-363
16.16	1	3-135	2-174
16.17	1	3-135	2-23
16.18	1	3-136	2-240
16.19	1	3-136	2-240
16.20	1	3-136	2-235
16.21	2	3-136	2-57, 58
16.22	1	3-137	2-299
16.23	1	3-137	2-104
16.24	1	3-137	2-47
16.25	1	3-137	2-47
16.26	1	3-137	2-47
16.27	1	3-138	2-47
16.28	1	3-138	2-47

TABLE 1.3–6—*Comments Sorted by Summary Code* [Page 12 of 13]

Summary Code	Total Comments Received	Summary Page Number	Document Page Number
16.29	1	3-138	2-47
16.30	1	3-138	2-47
16.31	1	3-138	2-102
		Regulatory Compliance	
17.01	2	3-138	2-8
17.02	6	3-139	2-185, 186, 187, 188, 189
17.03	1	3-139	2-235
17.04	1	3-139	2-275
17.05	1	3-139	2-104
		National Nuclear Weapons Policies	
18.01	170[a]	3-139	2-1, 6, 8, 13, 15, 17, 18, 20, 23, 31, 35, 44, 45, 46, 55, 58, 68, 84, 95, 108, 109, 111, 112, 132, 136, 146, 153, 156, 157, 160, 161, 162, 167, 169, 170, 171, 172, 173, 181, 182, 183, 194, 208, 211, 213, 215, 216, 217, 232, 233, 234, 235, 236, 239, 253, 255, 256, 257, 262, 269, 270, 272, 278, 282, 299, 302, 309, 310, 311, 312, 316, 317, 318, 321, 325, 327, 329, 333, 335, 337, 341, 344, 345, 346, 347, 352, 354, 359, 368, 369, 371, 384, 385, 386, 387, 392, 393, 394, 400, 401, 402, 403, 404
18.02	1	3-140	2-328
18.03	1	3-140	2-173
18.04	6	3-140	2-28, 30, 98, 134, 135, 371
18.05	3	3-141	2-10, 40, 153
18.06	1	3-141	2-330
18.07	2	3-141	2-23, 28
18.08	4	3-141	2-15, 58, 84, 273
18.09	3	3-141	2-31, 199, 275
18.10	1	3-141	2-47
18.11	3[a]	3-142	2-369
18.12	1	3-142	2-299
18.13	1	3-142	2-46
18.14	1	3-142	2-263
18.15	16	3-142	2-30, 47, 57, 58, 164, 193, 238, 252, 299, 334, 377, 392, 394, 403
		Allocation of Federal Funds	
19.01	33	3-143	2-11, 13, 15, 57, 58, 108, 109, 131, 157, 160, 161, 164, 167, 170, 183, 213, 215, 216, 217, 233, 252, 255, 256, 257, 268, 269, 342, 377, 387, 394, 403
19.02	1	3-143	2-359
19.03	1	3-144	2-127
		Support or Opposition to Department of Energy Policy	
20.01	21	3-144	2-17, 46, 95, 111, 137, 141, 164, 174, 214, 255, 262, 272, 311, 312, 320, 327, 344, 347, 373, 377, 384
20.02	1	3-144	2-208
20.03	1	3-145	2-15
20.04	1	3-145	2-39
20.05	2	3-145	2-181, 403

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Summary Code	Total Comments Received	Summary Page Number	Document Page Number
20.06	1	3-145	2-42
20.07	1	3-145	2-46
20.08	1	3-145	2-339
20.09	3	3-145	2-15, 139
		Storage of Special Nuclear Materials	
21.01	2	3-146	2-52, 284
		Commercial Reactor Alternative	
22.01	8	3-146	2-11, 18, 57, 148, 150, 275, 356, 385
22.02	45	3-147	2-15, 21, 24, 38, 174, 208, 260, 275, 284, 370, 371, 372, 373, 374, 375, 377, 380, 382, 384, 385, 386, 387, 388, 389, 391, 392, 393, 394, 400, 401, 402, 403, 404
22.03	4	3-147	2-30, 128
22.04	4	3-148	2-382, 386, 394
		Commercial Irradiation Services	
23.01	7	3-148	2-371, 373, 380, 384, 391, 392, 394

[a] Multiple identical documents received.

COMMENT DOCUMENTS

Comment Documents

CHAPTER 2: COMMENT DOCUMENTS

This chapter is a compilation of all the documents that the Department of Energy received during the public comment period on the Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling. The documents are keyed by number to table 1.3–3, Index of Commentors. The documents are presented by type in the order in which they were received. On each document the first number represents the comment number within this document and the second number represents the issue summary code assigned to this comment. This number can be used to locate the summary and response relating to this comment.

PUBLIC HEARING, APRIL 5, 1995—LAS VEGAS, NEVADA

First Morning Session—Environmental Effects

1/08.02 Downsizing in recent years has hurt the local economy. Work is needed immediately. The manpower (26,000 union workers are in the area) and expertise are here now. The project could and should begin immediately.

2/08.02 Workers and the local economy cannot wait until 2000 for the project to begin. Work is needed now. Downsizing has already hurt.

3/08.07 The economic multiplier for the Nevada Test Site (NTS) area should include not only indirect jobs, but also induced jobs (third level of job creation).

4/08.08 The Department of Energy (DOE) should not wait until 2000 to begin construction. NTS has the workforce in place right now and can begin immediately. There's a shortfall of work as it is, and there's a risk of losing more skilled workers if the project does not begin soon.

5/08.08 Work on the tritium supply and recycling facility should begin immediately at NTS. This will offset the ongoing downsizing and provide jobs and money to the local economy. The *Programmatic Environmental Impact Statement* (PEIS) should consider current and future downsizing in its socioeconomic analysis of the NTS area. The downsizing at NTS should be taken into account when making a decision as to the location of the tritium supply and recycling facility.

6/02.10 There is no experience in this area with the construction of a new, nuclear reactor facility. The facility should be built elsewhere, where there's more experience.

7/08.02 There is plenty of experience in this area with operating nuclear facilities. DOE should have confidence in the experienced, knowledgeable, and sizable workforce in southern Nevada.

8/02.02 The proposed solar facility for the generation of electricity could be used to supply the tritium supply and recycling facility with needed electricity. This would boost employment further.

9/04.02.01 DOE should consider the possibility of recharging the aquifer from which water is withdrawn for the tritium supply and recycling facility.

10/04.02.02 DOE should take every precaution to ensure that the tritium supply and recycling facility does not pollute the groundwater and surface water in the area.

11/10.02 Waste concerns need to be taken more seriously by DOE and the general public. There will be more spent fuel, more low-level waste, more hazardous waste and more sanitary waste. This is a short-term, as well as long-term, problem. Short-term, as well as long-term, costs are involved.

12/02.02 Electrical demands of the new tritium supply and recycling facility should not be a concern. A private company could take care of the electrical demands by running the proposed solar (photovoltaic) facility.

13/18.01 It is ironic that DOE would worry about the nonproliferation consequences of using a commercial reactor for defense purposes or about selling the electricity generated by a reactor whose real mission is defense related. The government and DOE's plan to build and run a new tritium facility has plenty of nonproliferation consequences itself.

14/12.01 DOE should analyze the consequences of its actions beyond 2050. The PEIS should take into account the consequences of the proposed action after 2050.

15/12.02 It seems that the Accelerator Production of Tritium (APT) will generate less waste and consume more water, while the other technologies will consume less water and generate more waste. How will these issues (waste and water) be weighted in the final decision? The PEIS should include a comparative analysis study on the benefits and risks involved with these two issues. DOE should outline how they will be weighted.

16/10.01 NTS is more suited to handle wastes (in particular, low-level waste [LLW]) than any of the other sites. NTS has much experience handling, managing, and storing different kinds of waste. The waste issue is not a problem for NTS.

17/13.06.01 The remoteness and size of NTS should be factors in the final decision. Due to its remoteness and size, NTS has advantages over the other sites in the areas of facility accidents, waste disposition/management (room for expansion), and radiation exposure. This should be studied and included in the PEIS analysis.

18/06.02 The desert tortoise is a threatened, not endangered, species.

19/08.02 There are many areas (communities) around NTS for workers to live in and commute to work. This is not a problem and should be seen as an advantage.

20/10.02 Currently, there is no way to dispose of spent fuel in the United States. Some of the proposed technologies generate spent fuel. This will mean more spent fuel for which we have no disposal method or final disposition. The PEIS should address this issue and include an analysis in the final PEIS.

21/13.09.07 The analysis in the PEIS is slanted in favor of the Savannah River Site (SRS) due to the existence of the recycling facility. For example, page ES-28 of the executive summary shows that 0 acres of land would be needed for a recycling upgrade at SRS. Does the PEIS, however, analyze the health and viability of the recycling facility in 2011? Will the recycling facility be functioning properly and safely in 2011? How old will the recycling facility be? In this way, the analysis is skewed.

22/13.00.15 The PEIS needs to make it more clear that the analysis for tritium need is based on new Start II stockpile levels, which is the most recent agreement for weapons reductions, and the associated reserve that needs to maintain the stockpile.

SECOND MORNING SESSION—ENVIRONMENTAL EFFECTS

1/11.00.01 Radiation monitoring at NTS has been inconsistent over the past 30 years. The radiation baseline used in the PEIS is not accurate; therefore the radiation analysis is not accurate. DOE needs to ensure consistent monitoring in the future. The PEIS should take into account this inconsistent monitoring.

2/16.01 The accountability and responsibility for data gathering should be discussed in the PEIS. The accuracy and dependability of the data and the data gathering process should be examined in more detail. Chains of responsibility and those responsible for the data and the data gathering need to be discussed.

3/16.03 The public comment period for the PEIS is not long enough. There is not enough time from public disclosure of the PEIS until a decision is made. More time is needed for the public to review the scientific analysis and decision making process for a project that will span 50 years. The government and DOE should use a scientific time frame, instead of a political one, in the *National Environmental Policy Act* (NEPA) process.

4/16.12 The public should have access to the cost analysis and the weight given to the various costs associated with the project. Every subject and issue discussed in the PEIS should be looked at in cost terms as well. The cost analysis should mirror the PEIS analysis in this way. Lifecycle costs (cradle to grave) of all aspects of the facility should be included in the cost analysis.

5/15.03 DOE should focus on the national and public interest (Native American interest as well) inherent in the proposed action, not just DOE interest or the tritium interest. DOE needs to engage and involve the public on a much broader and deeper level. DOE should not make decisions which have such far-reaching impacts without explaining to the public that there is much uncertainty involved in the technical analysis and overall PEIS analysis (lack of operating experience for the APT and the Modular High Temperature Gas-Cooled Reactor (MHTGR), lack of knowledge of the future need for tritium, whether electricity could be sold from a defense related reactor etc...).

6/15.03 Much more public understanding of the issues and involvement are necessary. DOE should spend more money to engage the public, individual citizens. Impact and oversight funding should be provided to reach out to the public. Oversight funding for all environmental impact statements (EIS) is needed. Oversight money is needed to analyze the impacts of the proposed action on the citizens.

7/15.03 There needs to be a serious, public consensus development campaign to educate and inform individual citizens. Give the public more time and opportunity to become engaged.

8/15.03 Scientists and technical experts should be placed in direct contact with the citizens and kids. The educational needs of the general public are being ignored. There should be meetings with schools, churches, all aspects of the local community, to educate, engage, and involve each citizen. The public is being shortchanged. DOE should try a roundtable approach to its public meetings, instead of a hierarchical one.

9/15.03 Direct, DOE contact with the public should be expanded. The time frame of the direct, public involvement process should be extended.

10/02.01 The impacts to the electrical distribution system at NTS are not clear. Will there be major impacts or not?

11/08.07 Southern Nevada per capita income figures for 2010 may need to be adjusted. It seems that these figures are too low.

12/08.07 The PEIS should take into account tourism effects from the new facility (tourism may go down). DOE should analyze whether future development around NTS would be affected by the new facility (the new facility may interfere with future housing and development needs or the new facility may have unforeseen effects on, as yet, unbuilt housing).

13/14.01 DOE should consider the cumulative impacts of its decision on the entire Nuclear Weapons Complex. The proposed facility may affect not only the proposed site, but also the network of sites in the region (Idaho National Engineering Laboratory [INEL], NTS, Pantex Plant, and Oak Ridge Reservation [ORR] and SRS).

14/13.00.17 DOE should consider the molten salt reactor in its analysis.

15/01.04 The PEIS should include in its analysis the current and future value of the land surrounding NTS (the new facility could have an effect on its value).

FIRST MORNING SESSION—PROJECT DESCRIPTION

1/13.00.05 Considers "triple play" alternative a political decision; feels inclusion of this option is late in this process. (Alternative is like breeder reactor, in which case it would conflict with Nonproliferation policy). If "triple-play" is considered, then it should be part of the PEIS. In addition, a lifecycle cost analysis should also be done (i.e. decontamination, decommission, waste management/storage, etc.).

2/14.01 Would like to see how the PEIS for Tritium Supply and Recycling relates to other PEISs in relation to costs, viability, etc.

3/13.06.03 Would like to see, if chosen, NTS produce tritium for commercial purposes in addition to its prime mission of producing tritium for the weapons program.

4/13.04.17 DOE should investigate alternative uses for, if chosen, the Accelerator technology, such as research and the production of medical isotopes.

5/13.00.07 Believes the U.S. should have two sources of tritium production for a strategic advantage, (e.g. an accelerator at NTS and facility at SRS).

6/13.04.05 If the accelerator technology is chosen, should consider solar energy as a source of at least some of the electrical power required to operate the accelerator.

7/13.00.11 DOE should consider siting the tritium supply and recycling facility outside of the existing nuclear weapons complex sites.

8/15.03 Should expand public review time. The public's time to review and offer comments for the decision making process is too short, especially if considering power sources such as solar energy for the accelerator technology. DOE does not have enough time to research the possibility of solar energy as a power source to be included as part of the accelerator's technology for evaluation before the EIS is due.

SECOND MORNING SESSION—PROJECT DESCRIPTION

1/13.00.16 Should consider purchasing tritium from other sources such as commercial reactors or foreign countries like Russia.

2/13.06.01 NTS should be awarded the tritium mission because it has been longtime recipient of wastes and now wants to diversify operation's mission and Nevada's economy. States NTS has proper people and support to carry out this mission; has local university board able to be involved with NTS. In addition, NTS has strong safety record, security system, in-place contractors, interactions with unions, etc.

3/13.06.01 Should consider placing tritium production, recycling, stockpile stewardship, etc. all in one location. If this is considered, NTS should be the site to do so because it is equipped to handle such activities.

4/13.06.03 If accelerator technology is chosen, would like to see NTS be the recipient of it. This technology would be beneficial to the community (i.e. research, alternative uses).

5/13.00.07 Should select a technology that would produce the highest quality tritium as well as minimize waste generation.

6/15.03 Consider having the PEIS in computer format to enable the public to have greater and easier access to this information, e.g. Internet, CD-ROM, database.

7/15.03 Should use as many different mediums as possible to communicate to the public. Should also tell public entire "story" and spend more time clearly stating information to avoid any misperceptions. Should talk directly to the public, especially affected groups; should cover topics such as risk assessments, dangers of operations.

8/13.06.01 Should select NTS as the site. Most Nevada Congressional Representatives support NTS as selected site.

9/15.03 Surrounding Indian tribes would have liked to have been included in this process early on. Does not believe this EIS process truly takes into account the public's wishes.

10/04.02.02 Concerned that if NTS receives the project, the water will be affected. Water is crucial, and the Nevada area does not have enough of.

11/15.01 Considers the meeting format very useful and effective.

12/16.01 PEIS document should include section explaining differences between tritium and other nuclear type materials such as plutonium.

13/15.03 These public meetings should have had more publicity; for example, papers could have had pictures to "catch" the attention of readers.

14/15.01 In these meetings, presentations should have conceptual estimates of costs of alternatives.

EVENING SESSION—OVERVIEW

1/16.01 All alternatives should be evaluated despite conflicts with policies because NEPA states that this be done.

2/14.02 NTS already has a mission as waste site; that it is now being considered for another operation is deplorable.

FIRST EVENING SESSION—ENVIRONMENTAL EFFECTS

1/16.02 DOE and the U.S. Government should go beyond Strategic Arms Reduction START II so that a new tritium facility is not needed. Further stockpile reductions would allow DOE to use the tritium from the retired weapons, thereby eliminating the need for a brand new facility. This alternative has not been considered by DOE. Under the NEPA process the PEIS should analyze all reasonable alternatives. DOE should look at this alternative because it is reasonable.

2/10.02 NTS has been a dumping ground for other sites' wastes for way too long. NTS is overloaded with wastes. A new facility would just add more waste. NTS has enough problems with current waste management. DOE should build elsewhere.

3/08.02 Overall, the tritium supply and recycling facility will benefit Nevadans and their kids (especially minority communities), providing needed jobs and incomes.

4/04.02.02 Nevada is strapped for water as it is. The new facility would only consume more. DOE should consider the effects the new facility would have on local water needs.

5/15.03 It is a fact that in the past DOE has not fully disclosed nuclear testing and waste management practices (and their impacts on the public) at NTS. More public involvement and fuller disclosure regarding this facility are needed.

6/13.00.17 A new facility to produce tritium does not seem necessary. DOE should have continued to use the reactor that last produced the gas. DOE should fully consider this alternative, rather than build a brand new facility.

7/13.06.01 Southern Nevada has plenty of water. Employment concerns are more important. NTS and the existing workforce in the area are a perfect match for the tritium supply and recycling project. There is much expertise in the area for the construction and operation of the tritium supply and recycling facility. The existing infrastructure at NTS and safety record of local employees are also advantages. State senators Jack Regan, Ray Shaffer and Joe Neal, and representative Bob Price all support this project. DOE should take into account the inherent advantages at NTS and in the regional workforce.

8/04.02.03 Water should not be a concern. It seems that there is enough water in the area to keep the golf courses green. Jobs are more important. The local economy needs a boost.

9/04.02.02 DOE should consider the effect that other future projects at NTS (not tritium supply and recycling) will have on water consumption. DOE should be sure that the water allotment is adequate for all future projects. Has DOE analyzed in the PEIS the water consumption of other future projects and the consequences this may have for the region? Do the 2005 and 2010 numbers in the PEIS take into account all future water needs?

10/04.02.02 Full APT water usage will exceed local recharge rates. DOE should consider the consequences of this.

11/04.02.03 As far as water goes, NTS has its own basin and is self-sufficient. Water at NTS is never used for Las Vegas. The water issue is not a problem.

12/08.08 DOE should consider and tap into the local, experienced workforce (26,000 union workers). They have an excellent safety record and much expertise. DOE should be concerned that local people get the jobs, instead of folks from outside of the region.

13/08.02 NTS has been good to minority workers, providing much needed training and experience. Overall, work at NTS contributes to a solid education for the workers and prepares them for other responsibilities and tasks.

14/08.03 The construction jobs will only be temporary. DOE should consider this in its analysis.

15/08.02 DOE and the Department of Defense (DOD) supported Las Vegas in the beginning with jobs and money. They have been good to southern Nevada. Southern Nevada should welcome more work.

16/05.01 DOE should analyze the seismic risks to the tritium supply and recycling facility from future nuclear testing in the area. In general, DOE should consider seismic risks to the new facility.

17/11.00.04 Construction deaths (industrial accidents) will exceed cancer deaths from the tritium supply and recycling facility. The accident deaths in the PEIS result from radiological releases or accidents, not industrial accidents. The PEIS should account for industrial accidents.

18/13.00.02 There is not enough operating experience for the APT and MHTGR technologies. There needs to be more experience with these technologies so that a more accurate analysis of their impacts can be made.

19/08.03 The PEIS should include an analysis of the impacts to the local scientific and engineering community, trade schools, colleges, and research and development. It also should account for the scientists and skilled workers drawn to NTS because of the new facility.

20/08.02 Many families in the past have depended on DOE and DOD for support. People have sent their children to college with the money they brought home from DOE and DOD jobs. NTS and southern Nevada need the work.

21/12.02 The new tritium supply and recycling facility will cost taxpayers billions, produce more spent fuel for which there is no repository, and use too much water. These issues should be given more consideration and weight.

22/10.01 NTS has a top of the line LLW facility which has been receiving wastes from all over the country. DOE should consider the fact that NTS has been a repository for other sites' wastes. NTS deserves the project.

23/18.01 It would be silly for DOE to construct a tritium supply and recycling facility with the potential to produce electricity, and then not use that potential (and sell that electricity) due to nonproliferation concerns. The worst case scenario would be a facility that costs billions to the taxpayer, consumes electricity, and gives nothing back. Congress should reconsider the nonproliferation policy.

24/16.12 The public should be fully informed about the cost analysis. The cost analysis and its weight in the final decision should be fully disclosed and the public should have input. In particular, the public should be fully informed about the cradle to grave costs (including long-term waste costs, decontamination and decommissioning [D&D]) of the facility. This is taxpayers' money after all.

25/02.02 Solar generated electricity (from a proposed central receiving and photovoltaic facility) could be used for NTS.

SECOND EVENING SESSION—ENVIRONMENTAL EFFECTS

1/04.01.01 DOE should be concerned about surface water discharge from the APT once-through cooling system. The PEIS should include an analysis of this discharge.

2/10.17 One of the slides indicates the need for a new organic mixed waste facility. What are the primary constituents of this waste stream? Is it the same as mixed LLW? DOE should clarify this.

3/17.01 A neutral regulatory body, such as the Nuclear Regulatory Commission (NRC), should be assigned oversight responsibility at the new facility. An "in-house" regulatory body, run by those who work at the facility or by those from DOE, would be unacceptable. DOE needs to resolve the regulatory issue and publicly disclose its decision.

4/09.05 DOE needs an emergency management plan/structure (for accidents on rail or road) for NTS. The responsibilities involved in such a plan should be clearly defined (Is it a local, state, or Federal responsibility?). DOE's planning in this area is not adequate enough.

5/09.01 A separate EIS is needed to deal with issues of transportation. DOE needs to address this issue in more detail.

6/13.04.01 DOE should choose the APT technology due to its low generation of wastes (compared to the other technologies).

7/11.00.35 Tritium occurs naturally and is far less toxic/deadly than plutonium. DOE should make sure the public understands this to avoid irrational fears about the gas.

8/10.05 DOE should consider in its analysis the planned liquid LLW facility at NTS.

9/02.01 The additional miles of railroad required for the reactors (not the APT, the overhead is wrong) should not be a factor in either the technology decision or the site decision.

10/10.01 NTS has many waste management advantages over the other sites (especially LLW capacity). NTS is isolated, has plenty of room for expansion, has diverse capabilities, and can store wastes for long periods of time. In addition, DOE has used NTS as a waste repository for other sites. DOE should consider all of these things when making a decision.

11/16.09 DOE should look at cost studies detailing transportation of LLW by rail. There may be money to be saved by using the railroad.

12/13.06.03 If selling electrical power (generated by the tritium supply and recycling facility) is viable at NTS, this should be considered an advantage for NTS.

13/13.06.03 Nevada needs electrical power. If it's cost-effective and viable, Nevada and NTS would welcome the additional electricity and savings from such a facility.

14/18.01 DOE should consider and needs to identify all nonproliferation issues associated with this project.

15/13.06.01 The air strips at NTS are an advantage (tritium is transported by air).

16/02.01 DOE needs to clarify whether there will be major site infrastructure impacts at NTS (particularly with regard to electrical needs). In addition, how will these site infrastructure and electrical needs weigh in the final decision? DOE should disclose and clarify such issues.

17/05.01 The NRC concerns itself with seismic and volcanic effects on new facilities. Seismicity and volcanism should be taken up in the PEIS.

18/17.01 DOE should be wary of allowing the state to set regulatory standards for the tritium supply and recycling facility. State standards are often too stringent.

19/13.06.01 Many projects have not been brought to NTS. It's about time that NTS received one. The existing infrastructure is ideal and southern Nevada is ready for more work.

20/10.01 NTS should be commended for its existing waste management facilities. If the project were brought here, no wastes would be transported offsite. The necessary facilities are all onsite.

21/09.08 DOD should share shipping knowledge with other agencies.

22/14.01 DOE Yucca Mountain and DOT should be sharing information and integrating. They should not be traveling down separate paths.

FIRST EVENING SESSION—PROJECT DESCRIPTION

1/13.03.01 Supports the Advanced Light Water Reactor (ALWR) technology and NTS as selected site because this would provide extra energy and jobs and produce less waste.

2/10.01 NTS is technically suited to take wastes.

3/13.04.17 Should consider utilizing accelerator for other uses, such as duel-use tritium production and research. Especially would like to see it at NTS.

4/05.07 Should have seismic stability as one of the criteria for site selection. Considers accelerator more stable alternative. Accelerator has no waste production, therefore in the event of an earthquake, wastes would not be released. The other alternatives are more vulnerable. Compared to the other sites, NTS would be best suited site because of less seismic activity.

5/13.04.05 If accelerator selected, would like to see solar energy as potential power source. Considers NTS appropriate site if accelerator and solar energy system selected.

6/16.01 Should have lifecycle cost conducted on alternatives; this should be used in evaluating alternatives.

7/13.06.01 Should consider NTS as selected site because: safety record, low waste streams, remote location, arid climate, water sources, skilled work force, etc.

8/13.04.01 Believes accelerator is best technology for national security, because it would be capable of producing tritium quickly and continuously.

9/08.02 Would like NTS to be selected as the site for the mission because it would enhance the scientific, technical, and cultural community.

10/15.01 Likes format of these meetings.

11/09.02 Should consider transportation as one of the selection criteria; NTS would be suitable place because there is no need to transport wastes off site. Disposal options for all waste streams exist on site.

SECOND EVENING SESSION—PROJECT DESCRIPTION

1/13.04.17 Would like accelerator to be used for other purposes such as research (co-benefit).

2/13.00.10 Should consider combination of wet/dry cooling technology at any type of facility selected for NTS.

3/16.03 Would like to see this process of technology and site selection of the tritium facility accelerated because the current work force will soon leave and take their experience with them; would be loss of talent.

4/13.06.01 Would like NTS to be the selected site because it has resources to support the mission. This site has the best historical record. In addition, it is capable of storing and minimizing wastes. NTS also has fewer problems with regard to environmental cleanup and a proven safety record. NTS is in a suitable climate for project.

5/18.05 Supports National Defense Policy and general mission of DOE.

6/13.06.01 NTS would be the most logical site because there is no need to transport wastes to a storage location.

7/13.04.01 Accelerator is good alternative for seismic stability because in the event of an earthquake there would be no waste releases to the environment and people would not be affected because of the remote location.

8/15.01 Evening sessions should be held at a later time, approximately 7:00 p.m.

PUBLIC HEARING, APRIL 5, 1995—WASHINGTON, DC

MORNING SESSION—ENVIRONMENTAL EFFECTS

1/02.01 The document should include a more accurate analysis demonstrating the existing power pools may (or may not) support the APT technology without constructing new power plants. If existing power pools need to be expanded to support the APT, the environmental impacts of constructing and operating a coal/gas power plant should be addressed in the document.

2/02.02 DOE should consider the development of solar enterprises at NTS as a possible source of electricity.

3/02.09 The document should include the fact that some of the technologies produce electricity to present a more evenhanded evaluation of the power pool analysis.

4/02.09 If a reactor technology is chosen, it would not require new electricity sources and should be noted as a benefit in the document.

5/11.00.18 If the APT technology is selected and found to require additional power from a facility which will be constructed in the future, then the document's evaluation is short on latent fatalities from the associated electricity production.

6/02.04 The document should address how the APT may effect reserve electricity capacity within the proposed power pools.

7/11.00.05 The document should include information relating how DOE intends to monitor radiation health within a 50-mile radius. The techniques should be described in the document as well.

8/11.02.17 The values for radiation exposures and resulting fatalities for low/moderate accident consequences of the ALWRs are grossly wrong. This is a result of improperly used data for accident probability. The value used was 103 when 106 would have been a more accurate value. The document is biasing public perception with grossly conservative numbers which does not accurately reflect the safety of the ALWRs.

9/11.02.17 The DOE value for frequency of a high consequence accident is such an unlikely event and yields an unfair and exaggerated accident analysis. NRC would not even consider the 2.0×10^{8} accident frequency value as reasonable and, therefore, the high consequence/low probability accident analysis appears biased against the reactor technologies.

MORNING SESSION—PROJECT DESCRIPTION

1/13.00.17 DOE should consider other options, such as a fusion facility, in the PEIS for tritium production.

2/02.04 DOE needs to address the power load of the APT in the PEIS.

3/16.14 The cost analysis, schedule studies, and production assurance studies for each of the technologies should have been available with the Draft PEIS. Without the decision making elements the public does not feel that they can give complete comments without weighing all sections of the process together.

4/16.12 There exists concern that the cost analysis, schedule studies, and production assurance studies will not be available to the public early enough to review and comment on before the Record of Decision (ROD) is issued. If these decision-making elements are not available to the public until the Final PEIS is published, then there needs to be more time available for comment than the minimum 30 days before the ROD.

5/13.00.14 The PEIS should include what else, if anything, the tritium facility would be able to produce/dispose of when or if tritium is no longer needed.

6/15.07 Concerned that there will not be an opportunity to comment on the decision made by the Secretary. There needs to be an opportunity for the public to comment on the ROD.

7/15.07 Concerned that public participation will not be included during the decision process. How will DOE assure the public that the their input has been included in the decision process?

8/13.00.14 The tritium facility should be sized to START II levels, which is the most recent agreement for weapons reductions, and designed for flexible adaptation to further changes in the required stockpile levels.

9/13.00.15 The PEIS should clearly explain that the tritium reserve stockpile includes tritium for the reserve of active weapons only. Active weapons meaning the weapons at the stockpile level and not used for weapons that are currently inactive or dismantled.

10/19.01 Concerned that DOE is spending large amounts of money on a project that could be canceled. What is going to be done to ensure that it does not happen as in other canceled DOE projects?

11/13.04.16 The PEIS should include any information gained from the New Production Reactor that has been helpful with the APT, and the relationship between the APT and the New Production Reactor.

12/13.09.06 Concerned that the cooling tower at SRS is not going to be evaluated in the decision process. If the technology chosen needs a cooling tower similar to the SRS tower than that needs to be part of the site decision process.

13/02.01 The PEIS should include a section on the environmental impacts associated with buying electricity from power pools outside the area of each of the five proposed sites.

14/14.01 DOE should postpone the technology decision until after the Fissile Material Disposition PEIS has been completed in order to know the recommended process of disposing of plutonium.

15/13.00.05 DOE should address the environmental impacts and cost/benefits for a tritium production reactor and for a reactor that produces tritium and burns plutonium.

16/13.04.01 General Atomic is an advocate of a government-operated APT.

17/22.01 The cost to the government of a privately financed reactor proposal needs to be included in the cost analysis.

18/02.01 The PEIS needs to include a discussion of the existing power pools and how it will affect the environment if the APT is chosen.

19/13.00.05 The benefits of electricity production from a reactor is not adequately presented in the PEIS.

20/13.00.05 Concerned about how DOE will inform the public on the cost/benefits of a privately or publicly owned multipurpose reactor.

21/13.00.05 A multipurpose reactor makes the most sense.

AFTERNOON SESSION—ENVIRONMENTAL EFFECTS

1/16.07 The cost analysis and production assurance documents seem to be more important decision-making factors than the PEIS document.

2/14.01 The PEIS for Tritium Supply and Recycling should be coordinated with the *Long-Term Storage and Disposition of Weapons-Usable Fissile Material PEIS*. If a reactor technology is chosen to produce tritium, then it should be evaluated for the potential to reduce plutonium stockpiles as a reactor fuel. If this path is not taken and the two programs are tied together separately, new issues, which were not raised during the two analyses, may arise.

AFTERNOON SESSION—PROJECT DESCRIPTION

1/13.04.01 The biggest advantage of the APT is its ability to be turned on/off.

PUBLIC HEARING, APRIL 12, 1995—POCATELLO, IDAHO

MORNING SESSION—ENVIRONMENTAL EFFECTS

1/02.04 The additional electricity used by the APT technology may require a new power plant. There would be environmental impacts associated with this new power facility. The PEIS should discuss these additional impacts. The other technologies avoid these additional impacts because their electrical consumption is less. The PEIS should discuss this avoidance as well.

2/02.01 The PEIS should consider various energy sources (nuclear, coal, hydro etc.) for additional power at INEL (if an additional power plant is necessary). The choice for additional power could be based on the composition of the regional power pool.

3/13.04.09 The effects of evaporative cooling on the environment (from the APT technology) should be analyzed in the PEIS.

4/08.01 DOE should be concerned about the quality of jobs and benefits that will come with a new tritium facility (regarding the new jobs at the facility itself). The PEIS should discuss this quality level. The commentor was comparing the types of jobs that were associated with

various cleanup activities at the INEL (generally less technically demanding) with the jobs previously provided with more complex and higher technology projects. The commentor was hopeful that the tritium facility would require the higher-level and higher-paying types of jobs.

5/11.02.17 DOE could do a better job of explaining the human health effects from the proposed facility. The differences between actual deaths, probability, and risk should be clarified and made apparent in the PEIS.

6/11.02.17 The PEIS should put the human health numbers in perspective by comparing the numbers to other activities which carry a cancer risk. This should be done, however, without trivializing or minimizing the actual risk that comes with the new facility.

7/10.08 The large volume of spent fuel waste associated with the MHTGR technology (80 yd^3) includes the moderator. The MHTGR does not produce more fission products than the other reactor technologies. The Final PEIS should explain this.

8/10.08 It is not clear that additional storage space (over and above that required by the other reactor technologies) would be needed for the 80 yd^3 of spent fuel generated by the MHTGR. This is due to the thermal (criticality) requirements of storing spent fuel. The Final PEIS should mention this.

9/10.16 The Final PEIS should express LLW in curies or mass units (in addition to yd^3 and $acres^3$).

10/19.01 The money to be spent on the new tritium facility is a poor allocation of taxpayer funds. We should not be spending billions on a facility that may not be needed in the future. The future developments in arms control or the world situation may be such that we can make further reductions in the nuclear weapons stockpile and obviate the need for a new facility.

11/18.01 The United States should be a leader in disarmament and peace. We are sending the wrong message to the rest of the world, with serious nonproliferation consequences, by building a new tritium facility.

13/13.00.20 The United States should go beyond the START II treaty so that a new tritium facility is not needed. The PEIS should include an analysis of a fewer weapons or no weapons alternative and the consequences this alternative would have on tritium needs.

13/13.00.05 The tritium facility is not necessarily a revenue loser, with only a defense mission. In particular, the triple-play reactor could generate revenue by selling electricity and dispose of plutonium, providing great mission flexibility. These facts should be seen as advantages for the triple-play reactor.

14/13.00.05 DOE could settle the nonproliferation issue raised by the sale of any energy related products of DOE tritium facility to the commercial sector by selling the steam that the tritium facility produces and letting an independent power producer run the steam and power generation plant.

15/14.01 The decisions about the tritium facility and plutonium disposition should be made at the same time to allow for a solution that satisfies both missions. The tritium EIS and plutonium disposition EIS should not be separated.

MORNING SESSION—PROJECT DESCRIPTION

1/13.00.17 Would like to see phased approach to all alternative technologies.

2/13.00.23 Reconsider having current schematic drawings in the PEIS reflect New Production Reactor designs.

3/18.01 Should look at no need for weapons; therefore no need for tritium. In addition, there is no long-term solution for storage of wastes. Considers money spent on this program is wasteful; it could be spent on waste management.

4/13.00.05 The technology type should be the primary criterion for this process. In particular, a technology that could provide a side benefit such as production of electricity would have advantages over others.

5/16.01 Need to clearly explain operating scenarios in the PEIS (for the sites).

EVENING SESSION—OVERVIEW

1/16.01 Would like to see cost analysis of waste disposal in the PEIS.

EVENING SESSION—ENVIRONMENTAL EFFECTS

1/10.02 Before the United States embarks on a new nuclear project, it should be sure that current and past projects have been cleaned up adequately and that the wastes from those projects have been disposed of economically and in an environmentally sound manner.

2/10.07 The PEIS should include an analysis of long-term waste management costs. These costs should include managing the wastes throughout the life of the facility and managing them after the facility is closed (after 2050).

3/10.37 The PEIS should use metric tons of heavy metal for the spent fuel numbers. This would make comparisons to spent fuel numbers in other documents easier.

4/22.02 DOE should revisit its nonproliferation policy. Specifically, they should consider using commercial light water reactors to produce tritium (by installing lithium targets in existing commercial reactors).

5/22.02 It would be wasteful not to use the tritium facility to produce electricity. DOE should reconsider its nonproliferation policy.

6/22.02 The PEIS is an appropriate place to revisit and reconsider national policies, such as the nonproliferation policies. DOE should revisit and clarify its nonproliferation policies (commercial uses of nuclear energy versus defense uses of nuclear energy) in this PEIS.

7/22.02 The policy of separating commercial (peaceful) and defense uses of nuclear energy has been a good one. DOE should preserve this policy.

8/15.03 DOE should have consulted with the Shoshonees before the draft process began.

9/04.02.04 DOE should further analyze the possibility of accidental discharges into the aquifer which lies below the INEL. The analysis should include the effect an earthquake would have on this possibility. DOE should identify in the analysis all possible pathways through which discharges could reach the aquifer.

10/04.02.04 The projected groundwater usage for INEL in 2010 may need to be adjusted. DOE may need to change this number based on future site projects and needs. The commentor feels that the projections for INEL water usages were too low.

11/04.02.04 INEL's water allotment may change by 2010. DOE should investigate this possibility and allow for the change in its groundwater analysis.

12/18.01 There is no justification for this new tritium facility because the United States does not need thousands of nuclear weapons to maintain a nuclear deterrent (tens of weapons would be adequate). The United States should consider a policy of fewer weapons.

13/13.00.20 Tritium is not necessary for the functioning of nuclear weapons. They simply turn the weapons into "designer" weapons. DOE should analyze a no-tritium weapons alternative.

14/19.01 The tritium facility is a terrible investment for the taxpayers. The United States should be using its money to clean up the existing waste situation, not to create new ones.

15/18.01 The United States should be reducing its stockpile further and should be a leader in disarmament and peace. Constructing a new, nuclear facility sends the wrong message to the rest of the world.

16/13.00.14 There are other uses for tritium (peaceful) which the PEIS should discuss. There is a commercial market in the United States for tritium and DOE should consider using the tritium facility for commercial (nondefense) purposes in addition to its primary mission of producing tritium for weapons enhancement.

17/13.00.20 DOE should study a no-weapons or fewer-weapons alternative in the PEIS.

18/18.01 If it is true that in the past the United States has sold tritium produced for defense use to commercial users (even if it's a small amount), then we must rethink our nonproliferation policy and develop and follow one that is consistent. Otherwise, we are hypocritical.

19/20.09 The United States should be concentrating on existing cleanup issues and the current nuclear situation. We should not be embarking on new nuclear adventures that may prove unnecessary just five years down the road. Let's wait until 2000 and see what the landscape looks like then. By rushing headlong into the project now, we are precluding some feasible alternatives (using tritium from additional retired weapons). This kind of action is precisely what led to the arms race/buildup in the first place.

20/20.09 Another advantage of waiting on the project would come from the advances in technology.

21/18.08 The United States should disclose what it considers a "safe and reliable nuclear deterrent." How many weapons are we talking about? What are the precise numbers (in weapons) that are

driving this entire project? DOE should provide a "declassified" nuclear weapons stockpile plan to each citizen so that he or she knows what is going on.

22/18.01 Constructing a new, nuclear facility sends the wrong nonproliferation message to the world and encourages others to do as we do.

23/20.03 DOE should not even continue with its engineering studies that are scheduled for the next five years. This will just be an additional burden on the taxpayers. If they decide to proceed with the studies, it will mean that the tritium facility will be built. This is not fair to the citizens who think the facility should not be built.

EVENING SESSION—PROJECT DESCRIPTION

1/18.01 Should not consider the technologies Heavy Water Reactor (HWR) and MHTGR because these alternatives would conflict with the nonproliferation policy.

2/18.01 The PEIS should acknowledge that the alternatives being considered are inconsistent with other nonproliferation policies of the U.S. In particular, it is inappropriate for the U.S. to ask other countries to forgo the use of highly enriched uranium and return spent fuel given to them in the past, yet propose two alternative technologies in the PEIS which would require the use of highly enriched uranium.

3 No comment identified.

4/13.00.17 Although the tritium program conflicts with nonproliferation policies, DOE should consider having technology alternatives which reuse spent fuel; spent fuel could be a resource. Other countries are currently doing so.

5/16.01 Supports cost analysis that is now underway.

6/13.00.36 The PEIS should include analysis of reasonable alternatives which may conflict or differ from current Federal policies.

7/16.01 The PEIS should have indicated the number of weapons that will constitute START II treaty levels and also the number that constitute a genuine deterrent; the public must have this amount in order to make a decision. Not having this amount published violates NEPA. In addition, an unclassified version of the Nuclear Weapons Stockpile Memorandum and Nuclear Weapons Stockpile Plan should be included.

8/18.01 Believes the United States' current nuclear stockpiles and planning are not deterrents at all; this action of building a tritium supply and recycling source is setting a bad example to other countries. Should reexamine the impact of a new tritium source on nonproliferation.

9/13.00.01 Supports "No Action Alternative."

10/20.01 Feels that this is a DOE mission similar to DOD mission in Vietnam and this mission is morally wrong. In addition, like the Vietnam War, the public is not receiving all the information (e.g. nuclear deterrent number) they need to influence governmental decision makers.

PUBLIC HEARING, APRIL 12, 1995—OAK RIDGE, TENNESSEE

MORNING SESSION—ENVIRONMENTAL EFFECTS

1/11.02.17 The accident frequency rates for the HWR and ALWR are not accurate.

2/08.03 DOE should be concerned that the projected employment figures may not be accurate since new jobs may be staffed by former employees of since shut down DOE facilities.

3/13.04.02 DOE does not consider the use of fissile material in the APT design as a source of neutrons for the eventual bombardment of target material. If DOE does consider a fissile neutron source, the electricity requirements would be much less but this would also produce radioactive wastes. By avoiding an investigation of the tradeoff between the power needs and the resulting environmental impacts, DOE appears to have assumed a political position in avoiding a uranium, fissionable neutron source. Nevertheless, DOE should have a more complete assessment including an APT design with a uranium neutron source weighed against potential environmental impacts.

4/10.18 ORR is under scrutiny for LLW storage practices, especially in the siting of LLW, and this may present an obstacle for similar plans in the tritium supply and recycling project.

5/10.06 Disposal of spallation products in the APT design should comply with NRC and the Environmental Protection Agency (EPA) standards since minute but extremely hazardous radioactive elements may be produced.

6/11.02.17 The ALWR low/moderate consequence accident assumptions are inconsistent with NRC standards. DOE must be careful to state what probabilities were used from NRC reports, such as a probability value from a worst case scenario Safety Analysis Report, because these would lead to misleading values of consequences.

7/11.02.17 No reactor would be licensed if it resulted in 1,500 fatalities.

8/11.01.01 There is a three order of magnitude difference for the release of tritium between the MHTGR and ALWR.

MORNING SESSION—PROJECT DESCRIPTION

1/13.00.02 The PEIS needs to include more safety information related to the four technologies. The safety reports for each technology should be made available to the public.

2/13.04.17 The PEIS needs to include any advantages of using the APT and what is needed to decommission the APT.

3/13.04.03 Accelerators use spallation to produce tritium. However, this technology has only been researched using low power. The proposed APT will need to use high power and there is concern that the target will not be feasible.

4/13.00.02 As research and development progresses for the APT, costs will change. The APT has many uncertainties and this needs to be reflected in the cost estimates.

5/13.00.02 The APT has many uncertainties due to the lack of research and development. The MHTGR has been more thoroughly researched and developed compared to the APT, but the ALWR has the least amount of uncertainties. ALWR seems to be the best choice.

6/18.01 DOE should consider having no weapons and no production of tritium.

7/13.04.03 The PEIS should include the research and development of safety for the APT.

8/11.02.17 The comparison in appendix F between the probability of accidents for the APT and the reactors is not fair. The probability of accidents for the APT is 106 while the probability of accidents is in the hundreds for the reactors.

9/13.00.02 There is concern how cost versus efficiency/reliability is going to be compared for the four technologies.

10/13.00.02 The PEIS needs to include information on the reliability of the technologies.

11/02.08 DOE needs to get cost estimates from commercial electrical companies, and find out if the power pools can support the APT electrical requirements.

12/14.08 The PEIS should include a section on whether DOE will be selling electricity and how that will affect the commercial electrical companies in the area.

13/02.08 If the APT is supplied by a commercial electrical company(s), then DOE needs to consider what would happen if the electricity were cut off (i.e. how reliable are the commercial electrical companies).

14/02.04 The PEIS should include what size nuclear reactor would be needed to supply electricity for the APT.

15/02.04 The risk analysis needs to take into account the additional risk if a power plant was needed to produce the needed electrical power for the APT.

16/13.00.19 DOE should take advantage of the commercial reactors by purchasing a reactor to produce tritium rather than building another reactor.

17/14.01 There needs to be interaction between the PEIS for Tritium Supply and Recycling and the Fissile Material Disposition PEIS with respect to using a reactor (triple-play reactor) to burn plutonium and produce tritium and electricity.

18/13.00.19 DOE will save money by purchasing a commercial reactor to produce tritium and burn plutonium.

19/22.01 There needs to be a cost estimate for a tritium production and plutonium disposition facility together and a cost estimate for each facility separately. Finally, DOE needs to compare the three cost estimates.

20/11.00.21 There is concern about the creation of gamma radiation from spallation.

21/10.26 Concerned with what DOE is going to do with the waste from the production of tritium.

22/18.01 DOE should stop making nuclear weapons because DOE does not know of an environmentally safe process to dispose of the waste products from this activity.

23/10.25 DOE needs to consider if new processes, management/handling criteria, or containment will be required to dispose of the spent lead and tungsten targets from the APT.

24/10.26 The PEIS should include a discussion of the different types of wastes from the four technologies and how DOE is going to dispose of these wastes.

25/13.04.09 There is concern that activation products from spallation will contaminate part of the APT tunnel. If the tunnel is contaminated then the PEIS should include an analysis on the uncertainties with respect to the amount of contamination to the tunnel, whether or not the contamination will interfere with maintenance of the tunnel, or whether tunnel components will need to be decommissioned, and make it clear if the contaminated tunnel is included in the waste sections of the PEIS.

26/13.00.17 DOE should upgrade the K-Reactor at SRS for tritium production rather than build a new reactor. It would be cheaper and quicker to put the K-Reactor back on-line.

27/13.09.01 DOE should consider using the existing infrastructure at SRS for the tritium production facility which would save DOE money.

28/13.00.39 The cost of not using SRS for tritium production and recycling should be included in the cost analysis.

29/16.10 DOE should consider the advantages of using existing DOE sites infrastructure in the cost analysis for tritium production and recycling.

30/16.12 There is concern that the public will not get the cost analysis for the four technologies in time to give comments. The cost analysis should include decommissioning and revenues associated with any of the technologies, and any cost overruns with the APT.

EVENING SESSION—OVERVIEW

1/12.09 On March 15, 1994, Dr. Harold Smith relayed to the House Appropriations Subcommittee on Energy and Water Development that tritium requirements are based on START I stockpiles and not START II stockpiles as DOE claims today. Contact Dave Hedgepeth at (615) 321-9091.

EVENING SESSION—ENVIRONMENTAL EFFECTS

1/03.01 The document should clearly state where the data for each technology originated for the emissions analysis.

2/10.11 The tritium supply and recycling project would add only an incremental increase in wastes compared to previous DOE projects which have contaminated ORR. This seems to position ORR as a likely candidate by avoiding more prominent impacts at another site.

3/11.00.12 Risk assessments for the project may be insufficient considering the health effects at ORR are significant.

4/11.00.13 There is new scientific evidence that there exists a threshold of radiation and this may not be able to be accounted for in the document.

5/10.18 There is much uncertainty about the location of an onsite LLW storage facility since there is no progress on the storage problems that already exist at ORR.

6/10.02 Today's problem pertaining to waste disposal was considered not a problem of the future during discussions in the early 70s. This public assurance was false and the issue has yet to be resolved.

7/10.02 The reactor technologies present waste management problems since there are no methods to handle the wastes of the reactor technologies.

8/13.04.05 If the APT is the selected technology, DOE should assess the option of operating the APT at night and other off-peak hours to reduce operating costs.

9/03.01 If a nuclear reactor facility is selected, DOE should aim to limit air exposures to more stringent standards than those currently established. The air exposures should not exceed one-tenth of the existing standards to avoid future shutdowns in the event these standards are not achieved.

10/18.01 As a resident of ORR, I disapprove of weapons of mass destruction and am not an advocate of DOE mission.

11/04.02.07 In the western United States, the Pleistocene groundwater loss is a complex issue. Recent studies have shown a decline in groundwater levels and this suggests that the groundwater in this region is a nonrenewable resource.

12/08.10 In the past, DOE often over exaggerated the number of potential jobs associated with a proposed project to strengthen the selling point of the project. When compared to the New Production Reactor project, the Tritium Supply and Recycling Program seems to have a longer employment period making the Tritium Supply and Recycling Program attractive in job-starved regions. In addition, the predicted projections may not be representative of the number of people in the region that benefit from the project. It seems grossly exaggerated that 12,000 jobs would be created in the ORR region.

13/11.00.12 The document should include the projected construction worker fatality rates in the human health section.

14/08.03 The document should detail the number of jobs lost in regions which are not awarded the tritium supply and recycling project at their site.

EVENING SESSION—PROJECT DESCRIPTION

1/13.00.16 DOE should tell Russia to sell all the tritium they can at this time or otherwise we will build a reactor that will produce tritium. If they sell, then the United States would not be relying on Russia for defense purposes. The tritium purchased from Russia probably won't last for the next 50 to 60 years, but by the time the U.S. would need more tritium, there might be a new and better technology available for tritium production or the existing stockpile may be reduced even further.

2/13.00.16 DOE should consider purchasing tritium from foreign countries because this option would not only benefit the United States but would give some of the poor countries the needed revenue for their country.

3/13.00.17 DOE should consider putting the K-Reactor at SRS back on-line because it could keep up with the tritium needs if started immediately, and this would give time for a new technology to be developed or for a decision to decrease the nuclear weapons stockpile again.

4/13.09.06 The cooling tower at SRS should be included in the analysis of the PEIS for Tritium Supply and Recycling.

5/22.02 The United States should not use commercial reactors for the production of tritium because the United States has asked other countries not to use their commercial reactors for national security.

6/13.00.16 DOE should consider buying tritium from foreign countries at different times to attain the needed tritium. This could be possible if DOE really wanted to consider this option.

7/13.00.19 DOE has many reactors with a multitude of waste and environmental problems. Therefore, the PEIS should consider more closely the use of an existing commercial reactor, which might help prevent further environmental problems.

8/22.02 DOE should consider using a commercial reactor for producing tritium because it would save large amounts of money compared to building a new tritium production facility.

9/10.13 DOE should consider the possibility of reprocessing tritium from spent fuel.

10/13.04.03 The APT is unreliable and should not be used because there has never been an accelerator that has run on a continuous basis, ever produced the amount of tritium required by the existing stockpile, or ever used a high energy beam being considered.

11/13.04.03 DOE should be cautious about the APT and should not consider building it until more research and development has been done to show it is reliable.

12/13.00.02 DOE should build a small accelerator to test before they build a full size one that may or may not work which would be a waste of money.

13/14.08 If DOE is going to sell electricity then they will be competing with the private electrical companies.

14/13.00.02 Reliability is most important when choosing a technology.

15/13.00.14 The need for tritium may be reduced in the near future, therefore the PEIS should include other uses (secondary) for the chosen technologies.

16/13.00.32 The MHTGR should not be considered due to the amount of spent fuel it generates, the APT is too unreliable to be considered, and the HWR produces too much low-level waste.

17/13.00.17 DOE should consider using a commercial boiler reactor with lithium to produce the needed tritium for the nuclear stockpile and reserve.

PUBLIC HEARING, APRIL 20, 1995—NORTH AUGUSTA, SOUTH CAROLINA

AFTERNOON SESSION—OVERVIEW

1/13.09.01 There is a national movement to get back to the Constitution. We still have people concerned with animals and the environment while our number one concern should be burning plutonium to prevent the proliferation of fissile materials. We can burn the plutonium in a reactor and simultaneously produce tritium at SRS. SRS should be the chosen site because there is a concern that the people with the most experience in operating reactors for tritium production would be lost to early retirement.

2/15.04 Politicians from Georgia are not listed as officials to contact and there is concern as to how much influence politicians from Georgia will have on the final decision.

3/16.12 The PEIS affords the public an opportunity to respond to environmental impacts but the public should also have an opportunity to respond to other decision making factors, such as the cost analysis and the production assurance analysis.

4/18.01 The Nonnuclear Proliferation Treaty is to be renewed this year while the United States intends on continuing the tritium supply and recycling project. The United States should concentrate on nonproliferation and is not moving fast enough to dismantle weapons. The Tritium Supply and Recycling Program is untimely and contradicts the aims of the Nonnuclear Proliferation Treaty.

5/13.09 SRS has 40 years experience and environmental compliance with tritium. SRS contains extensive infrastructure to integrate DOE tritium requirements in addition to the strongest public and political support. The workers at SRS have the experience and knowledge to accomplish DOE's mission. There exists a new modern recycling facility which may support a tritium source. In the future, it would be easier and cheaper to site other programs in conjunction with the Tritium Supply and Recycling Program at SRS.

6/15.05 Despite many recent changes in the world, DOE, for political reasons, is forced to build a reactor which was promised during the 80s. Chapter 2 of the PEIS for Tritium Supply and Recycling needs to be expanded because the public has the right to know how much tritium is needed at the taxpayer's expense.

7/18.07 The government continues to practice "pork barrel economics" by suggesting the possibility of a multipurpose reactor which can dispose of plutonium, produce tritium and generate electricity. In addition, a multipurpose reactor would send a contradictory message to the international community. The United States would utilize a defense mission to produce commercial electricity while encouraging other nations to support nonproliferation.

8/16.17 The decision making process is not truly a public involvement process. The public does not vote and, therefore, the public does not have an opportunity to decide how tax dollars are spent.

9/13.09.01 The United States must maintain the capability to dismantle terrorist-backed governments to prevent attacks on the United States. Tritium is essential as a nuclear deterrent and it needs to be produced soon. If SRS is not awarded the Tritium Supply and Recycling Program, it would be a crime. There exists a talented work force at SRS and the community support is

unparalleled. DOE should seriously consider the multipurpose reactor but SRS should be the site, irrespective of the preferred technology.

FIRST AFTERNOON SESSION—ENVIRONMENTAL EFFECTS

1/13.00.39 The cost of upgrading the recycling facility at SRS is insignificant and should be considered a benefit.

2/13.00.39 DOE seems to have decided to build a recycling facility wherever the tritium source is built. Since a recycling facility already exists at SRS, the benefit is obvious.

3/08.04 There exists a qualified work force at SRS with 40 years of experience. This should be noted as a benefit in the PEIS.

4/11.00.07 The comparison of health effects between the APT and the reactor technologies is not a fair comparison. The human health effects which result from the high electromagnetic effects of an APT is unknown. The American Nuclear Society would not accept the comparison. In addition, the history of the five reactors at SRS has shown an excess of leukemia. The human health section would not be accepted by professionals in epidemiology. DOE is presenting a narrow analysis to the public by only displaying radiation exposure.

5/11.00.10 More fatalities will occur as a result of electrical accidents than from nuclear radiation.

6/15.10 Public interaction meeting is an impressive idea by DOE. In the past DOE has deviated from decisions stated in RODs. As a taxpayer, DOE should commit to their decision stated in the ROD instead of changing the decision and wasting money.

7/11.00.09 The PEIS should display the current regulatory limits to be met, the history of the regulatory limits, and predict what these limits may be in the future.

8/22.02 Commentor wants DOE to assess whether the multipurpose option would breach the long-standing policy of separating commercial and defense facilities.

9/02.04 The large electrical consumption of the APT seems to be a major discriminator among the technologies.

10/13.09 NTS requires the greatest infrastructure upgrade while SRS requires the least. This difference should be noted as a discriminator and a benefit for SRS.

11/16.05 DOE should hold each site to equitable standards in the analysis of environmental compliance while cost factors should be weighted less as far as a decision making factor.

SECOND AFTERNOON SESSION—ENVIRONMENTAL EFFECTS

1/13.00.37 The reactor technology is a proven technology while the APT is not.

2/10.14 The document does not adjust the environmental impacts for storage of spent fuel as a function of heat. Spent fuel storage is a function of heat and, therefore, the less heat generated by a reactor requires the least amount of storage.

3/10.02 Disposal of nuclear wastes is the most pressing international issue. There is a need to solve the problem of nuclear wastes.

4/10.15 DOE should present the percentage of spent fuel it must handle in the Tritium Supply and Recycling Program to the total amount of spent fuel it currently handles. This would present a more accurate perspective of the differences between the reactor technologies and the APT because these wastes may not present a significant increase in the amount of wastes currently handled.

5/02.03 Reactors should be credited in the PEIS for not creating impacts at a distant location from their operation.

6/02.04 The PEIS should assume the APT will need a new facility to sustain the required amount of electricity. To present a fair analysis in an environmental document, the generator which impacts the environment the greatest in the power pool region should be evaluated. Then assess the environmental impact of the new generator in the region, built specifically to support the APT, and present the results in the PEIS. It should be assumed the offending generator, usually a coal-fired plant, would then be taken off-line.

7/02.04 If the APT is the selected technology, the potential cost of constructing an extra power plant should be accounted as an extra cost. A multipurpose reactor would burn plutonium and produce waste but may also facilitate the shut down of the environmentally hazardous generator within the power pool.

8/13.00.05 The electricity requirement for the APT is large and the design is unproven. DOE should consider the multipurpose reactor.

9/02.04 The excess capacity for regional power pools is not extra electricity but electricity needed by these power pools. DOE projections for future growth in power pool regions may be inaccurate and this may cause utilities to build new facilities if an APT is chosen.

10/13.04.07 The document seems to unfairly bias the APT and this must be corrected to create fairness among the technologies.

11/13.04.03 The uncertainties in the undeveloped design of the APT is an unknown factor which will create an exponential amount of problems in the future.

12/13.09.05 The Defense Waste Processor is not included under SRS in the table in the executive summary.

13/13.09.01 There is 150 percent unanimous support for the multipurpose reactor at SRS because of what is does in addition to tritium production.

14/14.01 By separating the Tritium Supply and Recycling and Fissile Material Disposition Programs, which DOE has stated may intersect if a reactor technology is chosen, DOE may find that another costly analysis may be required to analyze a multipurpose reactor.

15/14.01 The Tritium Supply and Recycling and Fissile Material Disposition Programs may prove to have greater environmental impacts than a multipurpose reactor which would fulfill both missions. DOE should investigate the environmental impacts of a multipurpose reactor in more detail to create a fair comparison.

16/14.01 As a matter of national security, the disposition of plutonium should be addressed before we decide to produce tritium. The plutonium issue should be resolved first because DOE may not need tritium if this issue is addressed. Also, the multipurpose reactor is not fully analyzed in the document.

17/15.07 The public does should have an opportunity to input on other decision making factors.

18/13.09.01 Irrespective of the chosen technology, SRS should be the site because there exists the expertise, experience, and most likely the lowest cost. The cost analysis should be viewed by the public with an opportunity to comment.

19/15.07 The public should have an opportunity to review other decision making analyses before a preferred alternative is issued.

20/13.09.03 The document should have an analysis of the relative environmental effects if the tritium mission at SRS is terminated.

21/13.09.01 People have rights which should not take a backseat to the environment. SRS should be awarded as the site for the tritium mission since the site already deals with nuclear fuel and wastes from all over the world.

22/13.09.01 The location of an existing tritium recycling facility should be considered a site discriminator in favor of SRS.

23/08.04 If the tritium recycling responsibilities were removed from SRS, more than 800 people would lose their jobs, engendering long-term impacts at SRS.

24/11.00.03 Recent epidemiological research suggests that a large influx of people in a region may lead to higher rates of leukemia. This unknown phenomena may result from viral transmissions in an unstable population. The document should attempt to include this in the human health section.

First Afternoon Session—Project Description

1/13.00.18 The ALWR is not the most efficient technology for producing electricity (thermal). The MHTGR is more efficient.

2/13.04.03 The public does not have much confidence in the APT when DOE still needs 3 to 4 years of research and development on it. DOE should not make a decision on the APT technology until this technology is more reliable.

3/13.02.01 The PEIS should include a section describing the uncertainties related to the MHTGR.

4/13.00.17 DOE spent over $1 billion on the K-Reactor at SRS and should consider upgrading this reactor rather than spending another billion dollars or more on a new technology to produce tritium.

5/13.04.17 The PEIS should discuss any benefits of using an accelerator over a reactor (i.e. any other use than for producing tritium, burn plutonium, etc.)

6/14.01 The PEIS should describe if and/or how the Stockpile, Stewardship and Management PEIS will impact the decision on technical and site decision on tritium recycling.

7/14.01 How can DOE make a decision on the PEIS for Tritium Supply and Recycling when they have not made a decision on what sites to evaluate for the Stockpile Stewardship and Management PEIS.

8/13.09.01 Aiken Commerce Board supports a decision to place tritium supply and recycling at SRS.

9/14.01 How will the decisions on the Stockpile Stewardship and Management and Fissile Materials Disposition PEISs affect the time structure for the PEIS for Tritium Supply and Recycling decisions.

10/14.01 The PEIS should include a section combining the impacts associated with burning plutonium, producing tritium and electricity (triple-play reactor). The PEIS should also compare those impacts to producing tritium and burning plutonium separately.

11/14.01 DOE should delay the decision on tritium supply and recycling until a decision has been made on plutonium disposition.

12/14.01 The best decision could be the triple play reactor which is not being fully evaluated in the PEIS. The PEIS should more thoroughly evaluate the triple-play reactor.

13/16.11 The representatives in Congress need to have more input into the Secretary's decision on the PEIS for Tritium Supply and Recycling.

14/13.04.03 There is concern that if (after 3 to 4 years of research and development) the APT is still considered unreliable that this delay in constructing a new tritium supply facility could jeopardize our Nation's national security.

15/16.12 There is concern that the cost analysis, schedule studies, and production assurance studies will not be available in time for public comment.

16/16.12 DOE should consider having a formal process allowing the public to comment on the cost analysis, schedule studies, and production assurance studies.

17/13.00.02 There is a very high risk associated with large projects that have never been tested at full scale. DOE should not be considering marginal technologies.

18/02.01 The PEIS does not include impacts associated with the high power need of the APT.

19/13.00.14 If the APT were constructed and a few years later tritium was no longer needed, what would be the function(s) of the APT. The PEIS should include a section discussing this area of concern.

20/13.00.14 The PEIS should address the relative functions of each technology if tritium was no longer needed.

21/13.00.05 DOE needs to develop a cost/benefit ratio for the multipurpose reactor.

22/13.00.05 We need to consider getting rid of the plutonium problem in this country. DOE needs to seriously consider the triple-play reactor for production of tritium, disposition of plutonium, and production of electricity.

SECOND AFTERNOON SESSION—PROJECT DESCRIPTION

1/13.00.20 DOE should consider not making anymore tritium for nuclear weapons as an alternative.

2/13.00.20 The United States has not used tritium enhanced nuclear weapons for many years. DOE should consider converting back to the old style nuclear weapons.

3/18.07 DOE should consider using a plutonium trigger for weapons less than 20 tons of TNT equivalent. This portion of the arsenal would not need to use tritium, therefore the time needed for tritium production would be increased.

4/13.04.22 The PEIS needs to include a section explaining the source of helium-3 for tritium production and any impacts with the use of this isotope.

5/04.02.10 The PEIS needs to clarify the term n/a for the closed loop cooling system for the APT. Does it mean that the APT will not be located at a dry site?

6/16.01 DOE should consider the operating records of the individual sites as a criteria in the PEIS.

7/13.09.04 SRS is not the place to put the tritium supply facility.

8/16.01 The operation experience and expertise of each of the sites needs to be highly considered in the PEIS decision.

9/13.04.22 DOE should reconsider the selling of helium-3 because it may become a rare item for tritium production.

10/13.04.22 DOE needs to estimate the amount of helium-3 available and the percentage that will be recycled in order to know if there will be enough helium-3 for tritium production into the year 2060. These estimates need to include a safety factor for lost helium-3, and will there be enough available helium-3 in the case of an national emergency.

11/18.04 DOE should consider making excess tritium and selling it to other countries to offset the cost to the tax payers.

12/16.08 The design status of each of the technologies should be available to the public.

13/12.05 The PEIS should include a table listing the key discriminators for each of the technologies independent of the sites.

14/13.00.40 The unclassified graph of the Estimated START II Tritium Inventory and Reserve Requirements needs to be more clearly explained. Does the graph take into account the unavailability of tritium for the next 15 years, and is this a conservative estimate.

EVENING SESSION—ENVIRONMENTAL EFFECTS

1/02.04 The PEIS should evaluate the impacts of a power source which would most likely need to be constructed to support the electrical requirements of the APT. DOE should analyze the impacts

of a hydroelectric generator, probably the most environmentally safe, and a coal generator, the least environmentally safe, and then average the impacts to present in the document.

2/13.04.05 If the APT is the chosen technology, DOE should consider a hydroelectric generator to support the capacity margins in the power pool.

3/10.06 If the APT is selected, wastes produced from a coal plant to support the APT electricity requirements should be included in the waste analysis.

4/13.04.05 If the APT is selected, DOE should consider the construction of a power source onsite to support the APT's electricity requirements.

5/11.00.07 The document should include the health risks of the electromagnetic radiation produced by the APT.

6/11.02.17 The values of the consequences presented in the human health section seem inconsistent with past analyses, especially the unusually low values for the MHTGR.

7/11.02.17 The consequence values in the human health section are so varied because the frequency value used in the analysis is so large and unrealistic. The probability values are sensitive to the design and frequency. The more unrealistic frequency value would yield even more fatalities in the analysis. The risk values in the human health section are the more important figures and these values are extremely small, irrespective of the technologies.

8/11.02.17 In order to present perspective for the risk values, the risks of smoking, living in a brick house, and other various commonplace figures should be included in the document.

9/11.00.11 The fatality figures presented in the document are misleading because there is such a large disparity between the technologies.

10/11.02.17 The document should integrate the risks of all potential accidents identified instead of the two individual events analyzed.

11/11.00.14 Risks depend on the choices people make. For instance, radiation may cause cancer but people may choose radiation to cure cancer.

12/12.10 The document should include an analysis on safety, focusing on past performance of the potential sites.

13/04.02.07 The document should adjust the values for water usage at the sites since these values depend on the relative humidity at the sites.

14/13.00.05 Proliferation of fissile material is the greatest national security issue. The United States is responsible for preventing the spread of plutonium to terrorist groups. The Los Alamos National Laboratory has determined that plutonium cannot be deposited for safe storage in a geologic repository. The United States may prevent the spread of plutonium by burning it in a multipurpose reactor while reaping the benefits of electricity and producing tritium.

EVENING SESSION—PROJECT DESCRIPTION

1/13.09.11 The tritium supply and recycling facility should be placed at SRS because SRS has the land mass, site infrastructure onsite and offsite, cost record, safety record, community and state support. The people at SRS are committed and really want the facility put at SRS.

2/13.09.01 The State of Georgia supports SRS and the placement of tritium supply and recycling facilities at SRS. SRS has the infrastructure to support this facility. Georgia wants the recycling mission to be finished at SRS and this is the right time and place to put the tritium supply and recycling facility at SRS.

3/13.09.01 SRS has many trained laborers. The weather at SRS allows these laborers to work 12 months a year, as some places only allow 6 months of work a year due to inclement weather.

4/18.15 The public is concerned about the associated impacts to tritium supply and recycling if Start II is not ratified.

5/13.00.14 The PEIS needs to include a section addressing the benefits of each technology in the event that tritium is no longer needed.

6/13.04.17 DOE should consider the use of research accelerators to produce the needed tritium.

7/13.04.11 The PEIS needs to include a section describing Plan B in the event the APT is not ready after research and development was completed.

8/13.04.03 There is concern that the APT will suffer like the super collider because of all the uncertainties.

9/13.00.37 The ALWR or HWR should be chosen for tritium production rather than spending the tax payers money for research and development on a technology that has so many uncertainties.

10/13.00.37 The APT should be studied on the side, and a reactor should be used to produce tritium because it is a proven technology.

11/13.00.37 A reactor would be the best choice because the laborers are knowledgeable about reactors and there will not have to be as much training involved with a new reactor facility.

12/18.04 The PEIS needs to include a discussion of the effects of producing and selling electricity commercially.

13/13.00.05 The multi-purpose reactor is the best choice because it can produce tritium and dispose of plutonium.

14/13.04.06 The cost of disposing of plutonium needs to be included in the cost of the APT, since the APT is not capable of burning plutonium.

15/13.00.37 There is no reason to do more research and development with the APT when there are reactors that are proven to be reliable.

16/13.04.03 DOE should not be considering the APT because it has been proven not to work on a commercial level. DOE needs to consider the technical risk of operating its own fabrication fuel facility.

17/13.02.01 The MHTGR looks great on paper but does not work in reality.

18/22.03 The United States helped Canada design their CANDU reactors, and told Canada that we would take back the plutonium. Now Canada wants the United States to take their plutonium, make mixed-oxide fuel, and give it back to Canada to burn in their reactors. The United States must stop subsidizing the CANDU Reactor in Canada.

19/16.01 DOE must assess a cost to the risk of each technology.

20/04.28 A cost/benefit ratio needs to be included with the APT.

21/16.01 Would like to have a lifecycle cost of each technology included in the PEIS.

22/16.01 The cost of retraining the laborers who will be working in the facility needs to be included in the cost of each technology.

23/13.09.01 It took 10 years to get a training program that worked well in SRS. It would cost a lot of money for another training program to be developed at another site. Therefore, the tritium facility needs to be located at SRS.

24/13.09.01 SRS has the site infrastructure to support any of the four technologies. It would make no sense for DOE to place the facility at any other site besides SRS.

25/13.09.01 SRS is capable of supporting the APT if DOE concludes that it would be the best technology for tritium production.

26/13.09.01 SRS is the most pro-nuclear community and this community really wants tritium supply and recycling to be placed at SRS.

27/13.09.01 The tritium supply and recycling facility should be placed at SRS because SRS has a 40 year track record with producing large quantities of tritium.

PUBLIC HEARING, APRIL 20, 1995—AMARILLO, TEXAS

FIRST AFTERNOON SESSION—ENVIRONMENTAL EFFECTS

1/04.02.05 DOE should consider in the PEIS any temperature effects in the playas from any wastewater discharges.

2/02.04 DOE has used the wrong power pool in its analysis of the electrical needs of each technology. Southwest is the correct provider. The percentages shown as "percent power pool capacity margin" on the overhead may be incorrect.

3/04.02.01 DOE should consider other sources of water for the tritium facility. In particular, using wastewater from the city of Amarillo or Pantex itself is a viable alternative.

4/04.02.01 DOE should make as many technical and/or efficiency improvements in the APT technology as possible in order to reduce water usage.

5/04.02.01 The Final PEIS should include in its water resources section all alternatives that would reduce groundwater usage (using wastewater, improvements in the technologies, using closed loop cooling for the target end of the APT). This should be done to inform decision makers more fully and to portray the Pantex water resources analysis in a better light (as compared to other sites).

6/10.29 DOE should include in the Final PEIS an analysis of any effects a pipeline carrying wastewater from Amarillo to Pantex would have on the environment and surrounding communities. A cost analysis on this pipeline should be done as well.

7/04.02.02 DOE should consider the other parties at risk due to the new facility's enormous water consumption. These parties include farmers, the city of Amarillo, and other water users in the area. There may be additional costs (financial, environmental, and other) resulting from the aquifer drawdown and the PEIS should fully cover these costs.

8/04.02.02 If alternative sources of water are not available (wastewater, using closed loop cooling for the APT), there will be significant drawdown of the aquifer. DOE should analyze the effect this drawdown would have on the surrounding community and any private and public wells. In particular, DOE should ensure that nobody's water "runs dry."

9/04.02.01 DOE should take a look at the city of Phoenix's model of water usage.

10/04.02.01 DOE should include in the Final PEIS the number of gallons of wastewater available for the tritium facility.

11/04.02.01 DOE should answer the following question in the Final PEIS: would the aquifer drawdown be zero or negligible if wastewater were used for the tritium facility?

12/02.01 In the Final PEIS, DOE should clearly indicate that additional water will be needed due to increased electrical demand (including the amount of water a new power plant would consume). In general, DOE should include directly in its environmental section the environmental effects from increased electrical consumption or a new power plant.

13/04.02.10 DOE has overstated by 50 percent the water requirement for the natural-gas-fired power plant.

14/04.02.02 DOE should consider the increased water consumption resulting from the construction and operation of the facility itself.

15/10.03 DOE should be alarmed by the massive increase in LLW generation (from 25 yd^3 per year to 15,980 yd^3 for HWR). How many additional shipments will this require and is there enough room for this amount?

16/18.09 The pertinent facts seem to be obscured from the public. How many weapons and how much tritium are actually needed? The public should be aware of the actual numbers. More analysis should be performed on actual tritium and weapons needs. In particular, further reductions could be made, thus eliminating the need for a new facility.

17/13.00.15 Even if START II levels were cut by 50 percent, a need for tritium would still exist. A plan to meet that need would still be necessary.

18/13.08.01 Public support (as shown in various polls) is over 80 percent for the missions and activities at Pantex.

19/18.01 In the Nuclear Nonproliferation Treaty the United States made a commitment to reduce its stockpile and eventually eliminate all of its nuclear weapons. If the United States proceeds with this project, the wrong message will be sent to the other nations that are parties to the treaty. Based on our inconsistent action, they may decide to renege on their commitments as well. The United States should pursue a nuclear weapons policy that is consistent with the Nuclear Nonproliferation Treaty.

20/11.00.24 The risk assessments from exposure to hazardous chemicals at Pantex are incorrect. Refer to volume II, table E.3.428. The 0.01 number for total cancer risk is incorrect. DOE should check all the numbers in this table and make sure they performed the correct analysis.

21/02.05 A more detailed examination of the proposed transmission line for the tritium facility is necessary and should be included in the Final PEIS. For example, what route will the line take into Pantex? Will it be underground or above ground? Will it disturb anything? How much will it cost?

22/13.06.04 In the chemical inventory section for the proposed sites, the PEIS lists no chemicals for NTS. NTS must use some chemicals during its operations. DOE should check into this matter further.

23/13.00.15 Future tritium and weapons needs are based on the START II treaty. It is obvious from that treaty that we must begin the planning and implementation stages for the tritium facility now if we wish to meet those needs.

24/13.08.03 Certain people are using fear tactics in their campaign for the tritium facility. They claim that the Pantex area will suffer economic devastation if the tritium supply and recycling or plutonium disposition projects do not come here. This fear mongering is inappropriate. Pantex is ridiculed across the country for welcoming these projects and yet it continues to encourage them. The many negative effects from the tritium supply and recycling facility should be fully acknowledged by these people, especially the drawdown of the aquifer.

25/13.08.01 The business community in the Pantex area certainly does not feel ridiculed and does not believe that the presence of the Pantex site is a disincentive for business in general. The business community is in favor of more work at Pantex.

26/10.10 The additional solid waste from the new facility would not have a substantial impact on the landfill in Amarillo. It is but a small fraction of current capacity. The fact that the landfill's design life would be reduced should not be seen as a negative.

27/10.29 DOE should look at the effects and costs of a pipeline that would carry wastewater from an off-site treatment plant to the new tritium supply and recycling facility. If DOE considers using wastewater a viable alternative, it must also consider the effects of implementing that alternative.

28/13.04.10 The APT worker numbers (for construction and operation) are the lowest among the technologies. It seems, however, that the costs related to these workers may be on the low side.

SECOND AFTERNOON SESSION—ENVIRONMENTAL EFFECTS

1/07.02 A more evenhanded and consistent analysis of cultural and biotic resources in the executive summary and the PEIS is needed. There are subtle discrepancies in the analysis between the sites, and Pantex is unfairly penalized due to the use of biased language. DOE should check these sections for unnecessary bias and use consistent terminology and language.

2/06.02 The executive summary indicates the bald eagle could lose nesting habitat. This is not accurate and should be changed in the Final PEIS.

3/02.01 Although the increase in electrical demand may not have a substantial effect on the local or regional power pool capacity margin, it will have a substantial effect on the environment and on the cost of each technology. These effects should not be de-emphasized just because they are secondary effects from a power facility that will be used to support the tritium supply and recycling facility. They should be seen as direct effects.

4/02.02 DOE should consider alternative energy sources (wind and solar) for the additional power that is required for the tritium supply and recycling technologies.

5/13.00.42 DOE should consider using the coolant (water) from the tritium supply and recycling facility in the steam generation plant at Pantex. This could potentially save fuel.

6/04.02.01 DOE should consider using closed loop cooling for the target end of the APT. This would conserve much water.

7/04.02.05 The playas are referred to as dry lakes in the PEIS and yet they may be recharge areas for the aquifer. High explosives and nitrates have been found in the aquifer, indicating that this may indeed be the case. (Another person disagreed with this and said that the playas are not recharge areas.) DOE should investigate the connection between the playas and the aquifer.

8/04.02.07 In the PEIS, aquifer water levels should be shown as depths, not only as elevations.

9/04.02.01 The PEIS exhibits a bias against Pantex in the water resources section. It mentions that drawdowns would adversely affect the aquifer, but fails to mention that wastewater discharges could possibly recharge the aquifer. The PEIS should discuss this potential benefit.

10/04.02.05 Wastewater discharges into the playas are portrayed as degradations in the PEIS, but they may actually sustain species and play a beneficial role. Some of the playas may not exist at all if it weren't for the wastewater discharges.

11 No comment identified.

12/08.11 It appears that DOE has used the wrong economic multiplier on their overheads. The PEIS should be checked for this mistake as well.

13/08.03 In its economic analysis, DOE should consider jobs that will be created at facilities which will support the planning and engineering studies necessary for the tritium supply and recycling facility (for example Los Alamos).

14/08.03 DOE should consider the transportation, electrical, water, and other environmental impacts from out-of-region people who come to work at Pantex and live in the area.

15/08.03 It is possible that workers may be brought in from other areas (not those immediately surrounding Pantex). Too many out of region workers could actually deflate the economy. DOE should, for each site, compare the need for skilled workers created by the new facility with the pool of skilled workers in the surrounding area.

16/08.03 The Tritium Supply and Recycling Program could spawn new production or fabrication facilities that would support the tritium supply and recycling facility and its operation. DOE should include this in the PEIS.

17/11.00.12 In addition to the cancerous effects of the new facility, there are also noncarcinogenic impacts. These include genetic, chemical, and toxic health effects. The PEIS should include an analysis of these as well.

18/11.00.12 The proximity of current and future schools and housing projects to the new facility should be fully analyzed in the PEIS. The commentor is specifically concerned about radiological risks to school and housing posed by the tritium supply and recycling facility.

19/11.00.10 DOE should take into consideration the fact that, in general, construction and operation workers are healthier than the general population. This fact may influence the conclusions of the human health section.

20/12.07 In the Final PEIS, DOE should include a description of the old tritium facility, its current and planned disposition, the wastes it generated, and a comparison between the old and new tritium facilities. This may help DOE learn from past mistakes and educate the public as to what can be expected from the new facility.

21/16.12 A D&D comparison (including financial costs) between technologies should be included in the Final PEIS.

22/01.02 It is seems that Site C and the area proposed for the tritium facility may infringe on land that was leased from Texas Technological University. DOE should consider any complications this may present.

23/15.07 DOE should tailor the comment response document so that people can track their own comments. This would allow people to see how and if their comments affected the PEIS.

24/04.02.07 DOE should ensure that an adequate number of drawing sites (for the groundwater) is available on site.

25/06.17 A more evenhanded and consistent analysis of biotic resources in the executive summary and the PEIS is needed. There are subtle discrepancies in the analysis between the sites, and Pantex is unfairly penalized due to the use of biased language. DOE should check these sections for unnecessary bias and use consistent terminology and language.

FIRST AFTERNOON SESSION—PROJECT DESCRIPTION

1/15.01 Would like to have "formal" comment sessions (traditional hearing format) in addition to this new meeting format.

2/15.07 Would like to see the PEIS be formatted to allow public commentors to easily identify DOEs responses to comments.

3/13.04.17 Supports current design to leave enough "space" (land) for expansion of the accelerator (if needed). This would enable additional tritium production for defense or commercial purposes.

4/13.00.05 Supports the reactor design because of its ability to be a power source; additional electricity is greatly needed in this area (Amarillo community).

5/10.26 Would like to see the PEIS further break down waste numbers for each technology.

6/13.04.01 Supports the accelerator design.

7/14.01 Should delay this decision on a tritium production facility to allow other EISs to reach the same stage. At that point, decisions should be made reflecting an integrated approach to all EISs.

8/14.01 If a ROD is made for tritium, then subsequent EISs should also reflect this decision.

9/04.02.01 Believes that there are alternatives besides "dry cooling" for Pantex. Supports the possibility of using treated city sewage water for cooling. The community is greatly concerned about groundwater, especially at the Pantex Plant; recycling of sewage wastewater would be a great source of water and would help preserve the aquifer.

10/10.03 Would like to see PEIS figures for wastes broken down by type, volumes, disposal methods, and costs.

11/04.02.01 There are "one-pass" technologies that use one-seventh the amount of water specified in the PEIS.

12/18.01 DOE should postpone this decision for tritium and wait until policies that are up for reevaluation (e.g. nonproliferation) are decided. The results of negotiation could significantly reduce the tritium requirement, and thus eliminate a need for a production facility. Would also like to see a good faith effort to bargain with other nuclear producing countries for tritium.

SECOND AFTERNOON SESSION—PROJECT DESCRIPTION

1/04.02.01 Would like to see water recycled from sewage waste water be a part of environmental analysis. This option may give Pantex an extra advantage over its current analysis that water withdrawals would adversely affect ground water.

2/04.02.02 If groundwater is considered for use in NTS, then it may be a concern.

3/04.02.07 Would like to have documentation for reasoning behind numbers in PEIS, specifically groundwater numbers.

4/13.08.01 Local community is 80 percent in support of Pantex's programs and missions.

5/13.08.01 Would like to have tritium supply facility at Pantex because weapons are already assembled/disassembled there. Collocation would eliminate the need for transportation of any nuclear materials or wastes across state lines.

6/14.01 Would like to see consistency among PEISs. All EISs should have same assumptions. Decisions should also be coordinated.

First Evening Session—Environmental Effects

1/05.01 DOE should ensure that no capable faults exist within the surrounding area.

2/13.00.05 DOE should sell or make good use of the electricity generated by some of the technologies. There is no good reason why DOE should waste this resource or reject its creation.

3/13.04.05 DOE should consider using the APT at night or during off-peak hours. This would save money and decrease peak usage.

4/04.02.01 The cooling mechanism for the APT could be closed loop. It is theoretically possible. There is no reason DOE could not employ this cooling technique on the APT. DOE should not dismiss this possibility out of hand. A great amount of water would be saved.

5/04.02.01 Dry years (years of light precipitation) are causing more drawdown than DOE indicates. DOE should be more concerned about drawdown effects. DOE should study the high plains area and the method of wastewater recharge that is being used there.

6/10.02 DOE should be concerned about polluting the playas with wastewater.

7/04.02.07 DOE should indicate where the drawdown is measured from. Is it one mile from the facility? Closer? Farther? There may be areas of greater drawdown that DOE has not observed.

8/04.02.02 Forty-three inches of aquifer drawdown is outrageous. The community will not stand for this. Farmers need this water more than DOE does.

9/04.02.01 Wastewater discharge from the Hollywood plant could negate the drawdown effect.

10/13.04.09 DOE should look at the evaporation generated by the APT's cooling system and any environmental effects associated with this evaporation.

11/13.00.38 DOE should look at the environmental effects resulting from the reactors' radiative cooling mechanism.

12/04.02.01 Using wastewater for cooling purposes should be seen as an alternative, not as a mitigation technique. It should be included as one of the options for cooling the tritium supply and recycling facility.

13/04.02.01 The water resources section in the executive summary (ES-31) unfairly favors the other sites. It notes that "drawdowns would adversely affect aquifer water levels" at the Pantex site. It does

not include an explanation for why this is so. DOE should add that the recharge rate for the Ogallala aquifer is smaller than the other sites' recharge rates.

14/04.02.01 The wastewater alternative and its potential should be shown simultaneously with the groundwater usage data and the corresponding drawdowns. Currently, the PEIS misleads the decision makers by showing them only one alternative (groundwater) for cooling purposes. There are, in fact, two power plants in the area which use wastewater as a coolant.

15/04.02.01 The water resources section has not been presented fairly for Pantex. The section lacks a discussion of other, viable alternatives for the tritium supply and recycling facility. This discussion would include using wastewaster and closed loop cooling (fully or partially).

16/04.02.01 DOE should take a look at the red bed drilling and pumping that are in process in and around Pantex. This type of drilling allows for the occurrence of drawdowns even when the tritium supply and recycling facility is not pumping. The red bed is the layer of rock beneath the Ogallala aquifer.

17/04.02.02 The water consumption rate for the tritium supply and recycling facility exceeds the recharge rate of the aquifer. DOE should be concerned about the needs of farmers in the area. It is a bad idea to use more groundwater.

18/03.01 DOE should be concerned about increased pollution levels and the effect these could have on visibility and air quality.

19/03.01 The pollution numbers should include pollutants from the additional power plant that may be needed (or additional pollutants from an increased electrical load).

20/02.01 DOE should include the size (physical and electrical) of the additional power plant that may be needed.

21/09.06 DOE uses inconsistent terminology in the intersite transport section of the executive summary. The wording of the "relative transportation risk of tritium" paragraphs should be changed to make this section consistent.

SECOND EVENING SESSION—ENVIRONMENTAL EFFECTS

1/04.02.01 DOE should consider injecting treated wastewater into the aquifer. This would help balance the aquifer level.

2/04.02.01 The Hollywood Wastewater Plant and the Treatment Plant at Pantex could provide enough water for the APT. No groundwater would be used. DOE should seriously consider this.

3/08.05 The business community in Amarillo welcomes this project and the jobs that would come with it. The jobs would be filled by people from the community. Public approval of Pantex and its missions is over 80 percent.

4/10.03 DOE is using the wrong LLW figures in its "waste management" overhead.

5/16.12 DOE should include D&D environmental effects and financial costs in its environmental effects section. These effects and costs should not be shown in a later section. They should be shown up front.

6/16.12 The public should receive the cost studies and analysis with plenty of time for review before a decision is made.

7/22.02 DOE should revisit its nonproliferation policy regarding commercial and defense uses of nuclear energy. DOE should be able to produce and sell electricity from a facility whose primary mission is defense related.

8/02.04 There are cost and energy advantages associated with running the APT during off-peak hours. DOE should give this serious consideration.

First Evening Session—Project Description

1/16.07 Would like to see maintenance and operation costs of different technologies in PEIS. This would be helpful in the decision making process.

2/13.04.17 Would like to see the possibility of a modular accelerator design. Would like to see it used for other purposes such as civilian research.

3/14.01 Would like to see all three EISs evaluated together, especially with regard to costs. For example, it makes sense to simultaneously evaluate the triple-play reactor, being considered in this EIS, and the Fissile Material Disposition EIS.

4/20.04 Supports DOE policy of not redesigning weapons to use less or no tritium.

5/16.03 Would like to have DOE work more closely with contractors in preparing EISs; would like to see more continuous involvement. It would eliminate the problem of contractors initially providing data and then having to take time to explain the data when the EIS, such as this draft, is produced.

6/15.01 Supports new meeting format.

Second Evening Session—Project Description

1/10.09 DOE should not consider spent fuel as an asset.

2/10.02 Concerned about high level wastes from reprocessing and for storage.

3/13.04.17 PEIS should evaluate closed loop cooling as an option for accelerator technology. It could be done with engineering work.

4/12.04 When evaluating current designs, PEIS should consider terrorist attacks, i.e. aircraft attacks or trucks with weapons.

5/15.01 Supports this new meeting format.

6/13.04.17 In addition to main mission of tritium production, would like to see accelerator design, if implemented, be used for other purposes such as research or production of short-lived medical isotopes.

TSR–E–001
COMMENT LETTER

Date = Fri Apr 7 23:44:21 1995

sal = Mr.
fname = Robert
mname = W
lname = Braddy
title = Project Manager
company = Bechtel National
addr1 = 821 Century Way
addr2 =
city = Danville
state = Ca
zip = 94526
phone = 510-855-0964
fax =
email = rbraddy@bechtel.com
mlist = tritium-stockpile
iplan = revised
peis-summary = on
peis-maindoc = on
peis-appendix = on

1/18.05 | An important proces and an important decision.

TSR–E–002
COMMENT LETTER

---------- Date = Sat Mar 18 18:02:16 1995 sal = Mr. fname = Glenn mname = A lname = Niblock title = Principal company = Scripps Consulting Group, Inc. addr1 = 9474 Kearny Villa Road addr2 = Suite 103 city = San DIego state = CA zip = 92126 phone = 619-578-5441 fax = 619-578-1007 email = SCGI@ix.netcom.com mlist = tritium-stockpile iplan = revised peis-summary = on peis-maindoc = on peis-appendix = on ----------

1/15.03 | Internet access to order information is an excellent means of public access. ---------- Date = Fri Mar 24

TSR–F–001
COMMENT LETTER

From;
Dr. Raji Sinha
540, Dakota, SE
Albuquerque, NM 87108

Comments on Tritium Supply and Recycling PEIS:

Sir,

I have some comments on "Tritium Supply and Recycling PEIS", they are following;

1/03.08 1. It is hard to locate (to acquire from any agencies) any references addressed in PEIS.

Specific comment: On page (4-275; NS-0003) reference "EPA 1974a" is not even listed in the reference section (page 6-10).

2. Pantex Air Quality described on page 4-273 (Table 4.5.2.3-1) do not have any reference, that is how the results were arrived (what model was used). As Pantex never had monitoring system nor Pantex ever modeled these pollutants (Facility wide modeling).

2/11.00.16 3. In Table 4.5.2.9-2 (page 488) the MEI = 2×10^{-5} mrem and population within 50 miles = 5×10^{-5} mrem/yr are incorrect numbers used to calculate risk. As these numbers are arrived with an error in the input to CAPP88-PC.

I think before calculation some one should have checked the numbers whether they are correct.

3/03.09 4. NTS also do not monitor nor did any modeling for criteria and non-criteria pollutants. How the results on page 4-108 were arrived?

TSR–F–002
COMMENT LETTER

Genery S. Panning
HC 66 Box 53156
Pahrump, NV 89041

U.S. Department of Energy
P. O. Box 3417
Alexandria, VA 22302

COMMENT RE: Tritium Production

The Nevada Test Site is a large tract of land that is already controlled by the US government, remote from population centers, and has facilities and equipment available. There are skilled craftsmen, technicians and scientists already employed that could serve as an employee base for the tritium production and recycling program.

1/08.02 The Nevada Test Site is being phased out and many jobs have been lost; the tritium facility would bring much needed employment to southern Nevada. As a life-long resident of Nevada, I would welcome the tritium production facility.

Sincerely,

Genery S. Panning

TSR–F–003
COMMENT LETTER

To the US/DOE:

As a 30-year resident of Las Vegas, Nevada and having family members residing here also, I want to offer my full support toward the tritium facility's proposed siting at the NTS. It is my opinion that this project will create growth of the scientific community and produce an outcropping of science/technology related businesses and services in the southern Nevada area. This would help fill a much needed gap in the present overall workforce envelope where the hotel, gaming, and service related industry comprise the dominant percentage of the populus.

1/08.02

I further believe that the tritium facility can create an improved portrait of the DOE working together and contributing toward the positive growth of the community and its economy, as opposed to the community's currently perceived impact that DOE's only role is the championing of a "nuke dump" in their back yard.

John Swift
3541 Kensbrook St.
Las Vegas, NV 89121

TSR–F–004
COMMENT LETTER

April 4, 1995

To whom it may concern,

I recently read an article in the Times News in southern Idaho regarding the possible development of a tritium factory hosted by the INEL (Idaho National Engineering Laboratory). I would like to comment on this proposal. I disagree entirely that Idaho should have to host another potentially bio-hazzardous project. I firmly believe an end to Idaho's acceptance of US Naval nuclear waste storage, is long overdue. For many years, Idaho has accepted nuclear waste for storage and the people within this area (myself included) fear the damages that could exceed a realistic & irreversible acquifer contamination.

1/14.02

Idaho has burdened the nation's most undesirable waste for a noble amount of time. I believe other states should accept equal responsibility for the US Nuclear Program and begin hosting an equal share of the undesirable waste and justly for equal amounts of time. Idaho is a beautiful state. I among thousands of other Idahoans would like to see more environmental protection and less nuclear development.

2/20.06

If you have ever drank the fresh water from the under-ground acquifer, you too would reflect the importance of it's purity & preservation. Personally, I vote NO to any new nuclear projects or related waste storage. If anything, think reduction! After all, the cold war is over..... isn't it? God's backyard is a once in a lifetime garden of peace. Consider this an invitation to see for yourself what Idaho has to offer.

Sincerely,

TSR–F–005
COMMENT LETTER

MICHAEL T. SPAINHOWARD
7055 East Lake Mead Blvd., Apt. #1068
Las Vegas, Nevada 89115
(702) 436-6396

April 4, 1995

U.S. Department of Energy
P.O. Box 3417
Alexandria, Virginia 22302

To Whom It May Concern,

I am an employee of Reynolds Electrical and Engineering Co., Inc., of Las Vegas, Nevada, and work at the Nevada Test Site (NTS). I am writing in support of the DOE choosing the Test Site for the location of its tritium production and recycling facility.

The Nevada Test Site is a prime location for such a facility for many reasons. Primarily because the NTS already has in place and mission ready a number of both production and support related facilities. The NTS can easily boast of its trained workforce and can point to a long history of successfully completed nuclear related projects. The NTS' remote location allows for a greater margin of safety in relation to its proximity to populated areas. That same remoteness plus an excellent security force makes the NTS ideal for sensitive operations. In short, the NTS is the place for the tritium production and recycling facility. 1/13.06.01

I hope you will choose the Nevada Test Site.

Sincerely yours,

Michael T. Spainhoward

TSR–F–006
COMMENT LETTER

From: Charles Aquilina
To: casqui
Date: 4/5/95 1:47pm
Subject: tritium production

Nevada is the logical choice for the tritium work as the proximity to Yucca Mountain for waste storage, and the remoteness of the site from high population and even low population areas, make it the safest choice. 1/13.06.01

TSR–F–008
COMMENT LETTER **PAGE 1 OF 1**

April 13, 1995

US DOE
Box 3417
Alexandria, VA 22302
faxing 1-703-931-9222

Howdy People,

1/18.01 I must tell you that I'm opposed to the continued production of Tritium for nuclear bombs. With all the decommissioning of the bombs we all ready have and the extremely long shelf life of Tritium, I feel that is source enough for any needed Tritium. Since the "Nuclear Threat" has drastically been reduced the need for the same amount of nuclear bombs has also been reduced. Therefore, the nuclear bombs being decommissioned even though have less that 100% of the Tritium needed for a one to one swap of materials, the greater number of old bombs should more than be enough of a supply of Tritium for our nuclear arsenal in the future.

Please consider these comments in future planning by DOE.

Thanks

Richard M. Kuchn
3933 Palouse St
Boise, Id 83705

TSR–F–009
COMMENT LETTER **PAGE 1 OF 1**

April 20, 1995

To: US Doe
P.O. Box 3417
Alexandria, Va. 22301

From:
Verna Garrison
118 Notchaway Court
North Augusta, S.C. 29841
(803) 279-7453

To the Department of Energy,

As a concerned citizen in the Central Savannah Area which includes Augusta Georgia, North Augusta, South Carolina and surrounding areas I would like to voice my ideas on the placement of the reactor project being at the Savannah River Plant in Jackson, South Carolina.

As a community we have always supported SRS(Savannah River Site) and will continue to do so. SRS has been a main stay in our area for over thirty years and is a big contributer to our economy. The majority of the families have someone in the family that works at the " Bomb Plant" as some of the first workers call it. I was going to say employees but these people did the down in the trench work. As time went by and things got to look more habitable they become the employees and could enjoy the fruits of their labor. They now have sons and daughters as well as grandchildren working and supporing the Savannah River Site. It would be a great loss to our community for the employees as well as their families as there would such change.

1/13.09.01 The nuts and bolts of this is not personal but dealing with figures and from what I have been able to deduct it is most feasible in dollars to have the reactors here in the SRS. I think that this is the bottom line.

As a community we would like to let you know that we do now and have in the past felt that SRS was one of us and hope it will continue to be with our area and grow with our support.

Sincerely,

Verna Garrison

Verna Garrison
1-803-279-7453 (message recorded when away from phone)

TSR–F–010
COMMENT LETTER

April 20, 1995

Comments on the Tritium Supply and Recycling Programmatic Environmental Impact Statement

Technology

Either a reactor or an accelerator can be used to produce tritium. Whether one or the other of these methods is better overall is one question. Presumably, advantages and disadvantages that are determined by technical, economical, political, and other factors exist for both methods. Selection of a preferred method, therefore, comes down to an analysis of all factors, which is one intent of the Environmental Impact Statement. I have insufficient information readily available to comment on technical and economic factors, but submit that politically, an accelerator is likely to be better received by state and local governments and the public. In the minds of politicians and the public, reactors simply have a bad record. Reactors are associated with nuclear power plants and what is remembered about nuclear power plants are the accidents. To my knowledge, politicians and the public have voiced little concern over the safety of accelerators. If only for this reason, the preferred method for production of tritium should be an accelerator.

1/13.04.08

Location

Five sites are proposed for locating the facility for production of tritium. As with selection of a method for producing tritium, selection of a site comes down to an analysis of all factors. Certainly, advantages and disadvantages exist for each proposed site. Environmental factors for locating a facility at the Nevada Test Site (NTS) are within my sphere of qualification to comment.

A consideration is the existing insult to the environment at the proposed sites. The insult to the physical environment requiring cleanup at most, if not all, of the proposed sites is well beyond the insult at the NTS. It makes sense to site a new tritium production facility in a location where baseline environmental conditions are favorable.

2/13.06.01

The NTS is large, secure, and has the infrastructure to support a tritium production accelerator. Tritsite proposed for the accelerator is in the northern part of Frenchman Flat, a hydrologically closed basin in the southeastern part of the NTS. Unconsolidated deposits that fill this basin are thick, the water table is deep, and the risk of natural hazards that would have to be considered (e.g., faulting, seismicity, flooding, erosion, volcanism) based on available information is not large.

Stuart E. Rawlinson
2105 Tosca Street, #101
Las Vegas, Nevada 89128
(702) 228-4327

TSR–F–012
COMMENT LETTER

RE: Comments

Dept of Energy
Tritium Supply

Comments:

1. Would like for DOE to look at SRS as a prime source for tritium.
(a) Has the infrastructure needed
(b) Construction workforce
(c) Engineering and operations experience
(d) Community support
(e) Political support
(f) Land Mass for now & the future.
(g) also the infrastructure on the outside of SRS pertaining to housing, Shops, Realestate, supplies, warehouses, office complex

1/13.09.01

(2) Reactor seems more in line, but. gladly support the accelerator

2/13.00.38

(3) Getting rid of Plutonium needs to be issue for DOE. Our Nation has made a commentment to the World and should live up to this commitment.

3/18.01

Charles T. Haddock
3004 Country Club Hills
North Augusta, SC.

TSR–F–013
COMMENT LETTER **PAGE 1 OF 1**

1/20.07

Few reactors will be built, so combine needs
of a reactor is to be built, let it burn HEU or Pu
and let it not breed more Pu.

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 19524 WASHINGTON, DC
POSTAGE WILL BE PAID BY ADDRESSEE

U.S. DEPARTMENT OF ENERGY
ATTN: OUTREACH OFFICER
DP-25
1000 INDEPENDENCE AVENUE, SW
WASHINGTON, DC 20077-5650

TSR–F–014
COMMENT LETTER **PAGE 1 OF 2**

Victoria Woodard
2012 Tenth Street
Berkeley CA 94710
(510) 841-8952

April 27, 1995

Stephen M. Sohinki, Director
Office of Weapons Complex Reconfiguration, DP-25
U.S. DOE
1000 Independence Avenue, SW
Washington DC 20585

Re: Comments on the Draft PEIS for Tritium Supply & Recycling

Dear Mr. Sohinki:

DOE's preferred alternative in this PEIS should be No Action. DOE should not establish a new tritium supply capability.

1/13.00.01 There are 2 reasons that DOE should choose the No Action alternative. One is related to national security, the other to health.

2/18.01 1) By signing the Treaty on the Non-Proliferation of Nuclear Weapons, the United States agreed to pursue nuclear disarmament. Negotiations to extend the Non-Proliferation Treaty are taking place at the U.N. right now (in April and May 1995). Many non-nuclear weapons states want believable disarmament commitments from the U.S. before they will agree to continue abstaining from building nuclear weapons themselves. Building a new tritium supply capability would send a message that the U.S. is not serious about disarmament and could fuel a new arms race among states that are presently non-nuclear. That would jeopardize our own national security beyond our worst nightmares.

The fact that the United States' nuclear arsenal depends on tritium does not excuse us from our commitment to disarmament. DOE's dismantling of nuclear weapons at Pantex puts the U.S. commitment to disarmament into action. DOE should argue that dismantlement is its true mission.

3/11.00.36 2) DOE's past experience has proven that tritium cannot be produced, handled, or disposed of safely. According to Deadly Defense: Military Radioactive Landfills (1988), the following events occurred at Savannah River Site, where DOE was producing and disposing of tritium. On May 2, 1974, 180,000 curies of tritium oxide were released to the air in 1.5 minutes. In December 1975, 480,000 curies of tritium gas were released to the air in 4 minutes. As of 1988, about 1/4 of the 420,000 curies of tritium that had been discharged to seepage basins had migrated

to Four Mile Creek. The tritium plume in the groundwater under the burial grounds exceeded EPA's drinking water standard by 3,500 times.

3/11.00.36 continued

The statement on page 24 of the Executive Summary that no individual exposure data are available on worker chemical exposure dose is shocking. If DOE and its predecessors haven't kept good health records on their employees so they can prove that their operations are safe, the public is justified in withdraving its support of DOE's nuclear activities.

Regarding the estimated cancer risk among workers and the public at the various alternative sites and with the various alternative technologies: it is unacceptable for the federal government to knovingly proceed with a project that they know will cause these levels of cancer.

4/18.13

It is also unacceptable not to evaluate the impacts of radionuclides on biota both on and off site.

5/06.04

I hope you were sincere in soliciting public comments and will not brush aside what I have to say based on DOE's alleged mission. Help all create a safer, more healthy future by analyzing the various parts of your mission and focusing on benign aspects such as disarmament and environmental cleanup. Throw out the tritium supply proposal, which is guaranteed to make more problems than it will solve.

6/20.01

Sincerely,

Victoria Woodard

Victoria Woodard

320 Brydon Rd.
Dayton, OH 45419-1703
May 13, 1995

Mr. Stephen Sohinki
Director, Office of Reconfiguration
DP-25
U. S. Department of Energy
Washington, D. C. 20585

Dear Mr. Sohinki:

Thank you for sending me a copy of the Draft Programmatic Environmental Impact Statement (PEIS) for Tritium Supply and Recycling and for giving me the opportunity to comment on this document.

My comment are attached and I request that they be considered and addressed in the final PEIS.

Sincerely,

Paul Lamberger

Paul Lamberger

Specific Comments from Paul Lamberger

1/13.00.63 | 1. Pg. S-1, top of second column. Should "surveillance" be included as one of the functions of the Complex?

2/13.00.64 | 2. Same paragraph: There are other sources of recyclable tritium, such as RD&T scrap and tritium caught in effluent capture systems.

3/18.10 | 3. Pg. S-1, last paragraph. What is the basis for the year 2009 as the time when the new supply must be available? Is this based on START 2 levels, or something else?

4/14.07 | 4. Pg. S-2. Are the receiver sites for the Mound mission still accurate?

5/16.24 | 5. Pg. S-3, para 4. The ROD should also include a decision as to when to start to build the new supply and when it must be on-line.

6/16.25 | 6. Pg. S-4, para 5 contains an operational date for the new supply that appears inconsistent with the date given near the end of page S-1.

7/16.26 | 7. Please tell me how a person with a Q clearance should proceed in order to gain access to the classified Appendix CA?

8/13.00.65 | 8. Pg. S-5. In the Technologies Section I would like to see some information on the amount of electricity that could be produced and the amount of Pu that could be burned for each supply technology.

9/22.03 | 9. Same section: Has a CANDU reactor been considered? It is a heavy water reactor that also produces electricity commercially in Canada.

10/13.00.19 | 10. Pg. S-9, para 4. What fraction of goal quantity could all four of the existing DOE reactors produce together? How long will their commitment to existing programs continue? If the FFTF were modified, what would its lifetime (life expectancy) be?

11/13.00.51 | 11. Pg. S-11, Environmental Impacts. From the information in this Section, I calculated the electric power consumption for the APT at the various sites and found that it is lowest at SRS. Why is this?

12/16.27 | 12. Pg. 1-1, para. 1 contains the statement that there is no capability to produce tritium within the Complex. This may be technically correct, but DOE has significant capacity, as described on pg. S-9.

13/16.28 | 13. Pg. 1-2, top of second column: please specify the particular NEPA documents that will cover these irretrievable commitments of resources.

14/16.29 | 14. Pg. 1-2, Sect. 1.3, first para. How can a requirement for tritium depend on funding levels? Why isn't the operational date for a new supply set only by military needs, treaty commitments and the size of the existing tritium supply?

15/13.00.43 | 15. Pg. 1-3, Sect. 1.4.2 You should discuss why the Mound Plant would not be suitable for the Tritium Recycling work. Mound was the best tritium site in all of DOE and the capacity of the weapons production and recycling facilities are very close to those needed now.

16/14.01 | 16. Pg. 1-7, para. 6 mentions the FONSI that was published 9/14/93. This document, and the Nonnuclear Consolidation Plan, are flawed because they do not address the negative safety and environmental impacts resulting from the multi-year gap in reservoir surveillance.

17/18.15 | 17. Pg. 2-1, para. 3 should include a discussion of the effect of negotiated treaties etc. on the need for more tritium.

18/13.00.40 | 18. Pg. 2-2, Fig. 2.1-1 shows the tritium requirements decreasing until around 2011. What is driving this decline? Also, the amount in the reserve, as a per cent of the total supply, seems to be increasing over time. What is the explanation for this?

19/18.15 | 19. Pg. 3-2, Sect. 3.1.1, para. 3. Please expand this section on sizing to include the specific reductions in the stockpile, or limitations on the stockpile, as a result of specific treaties and international agreements. How much tritium is required to support the START I and the START II levels, as a per centage of the pre-START I levels? With this information it will be easier to understand why the new supply needs to come on-line at a specified date. For example, if the START II level is 25% of the pre-START I level and the last production of tritium was in 1988 then a new supply must be available in 2013.

20/16.30 | 20. Pg. 3-4, second item, which concerns storage of spent fuel : In the fourth sentence is the phrase "... , but no acceptance criteria has been established...". Since criteria is plural, the word "has" should be replaced be the word "have".

21/13.00.34 | 21. Pg. 3-10, Sect. 3.2.3. If the ROD will be based on the possibility of electricity production and/or Pu burning, then this document should explain the relative importance of these items and the weighing factors that will be used to reach the final decision.

22/22.03 | 22. Pg. 3-29, Sect. 3.4.2.1. Please include a discussion of why a power-producing HWR, such as the Canadian CANDU reactors, has not been considered. Given the objectives on page A-31, it would seem that basing the design on a modern design that is currently in commercial service, like the CANDU, would be preferable to using technology from 1950.

NUCLEAR CONTROL
INSTITUTE

1000 CONNECTICUT AVE. NW, SUITE 804, WASHINGTON DC 20036 202/822-8444 FAX 202/452-0892

Comments on DOE's Tritium Supply and Recycling Draft PEIS

Nuclear Control Institute[1]

May 15, 1995

DOE's Tritium Supply and Recycling draft Programmatic Environmental Impact Statement (DPEIS) describes plans to assess future tritium supply requirements and production alternatives. The Nuclear Control Institute (NCI) believes that any decision on a future tritium source is premature in the absence of a thorough public discussion of the need for tritium. Such a discussion cannot take place in a vacuum. It must be based upon publicly available information on tritium supply and specific future tritium requirements for the U.S. nuclear weapons arsenal.

1/16.01 NCI has requested that the Department declassify information on the nation's stockpile of tritium. Such declassification would constitute a significant further step in Secretary O'Leary's Openness Initiative, which has already proven helpful in facilitating public participation on issues related to the nuclear weapons complex. NCI wrote to Secretary O'Leary in November 1994 requesting that this information be declassified (a copy of the letter is attached).

The DPEIS posits the following claim:

> Current projections, *derived from classified projections of future stockpile scenarios*, indicate that recycled tritium will adequately support the Nation's nuclear weapons stockpile until approximately 2011 (figure 2.1-1). After that time, without a new tritium supply source, it would be necessary to use the strategic reserve of tritium to maintain the readiness of the nuclear weapons stockpile. . . . Eventually the nuclear deterrent would be lost.[2] [emphasis added]

[1] Nuclear Control Institute is a public-interest research organization concerned with the proliferation of nuclear weapons.

[2] U.S. Department of Energy, Office of Reconfiguration, Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling, Volume I, February 1995, p. 2-2.

This claim depends upon many assumptions regarding the amount of tritium currently in the arsenal and in reserve, the amount of tritium required for each weapon, and the future size of the U.S. arsenal. As the DPEIS points out, all these assumptions are based on information that is classified and unavailable to the public.

In 1991, Energy Secretary Admiral James Watkins testified before Congress that "the precise figure for the total amount of tritium in the stockpile is classified because it permits estimates of U.S. capabilities to maintain the viability and deterrence value of the nuclear stockpile. Declassification of this information would therefore jeopardize the national security of the United States."[3] This justification was questionable at the time, and certainly has been overtaken by events triggered by the end of the Cold War since 1991.

Nonetheless, DOE continues to classify this information. In June 1994, a DOE official claimed that information on U.S. tritium production was too "sensitive" to be released. Ironically, this statement was made at the press conference at which Secretary O'Leary released a substantial amount of newly declassified documents as part of the Openness Initiative, including the total amounts of fissile materials (plutonium and highly-enriched uranium) in the U.S. stockpile. This information also had been withheld by DOE under previous administrations on the grounds of national security. In personal communications with NCI, officials working on DOE's Declassification Review have reiterated the claim that information on tritium stockpiles and requirements is too sensitive to be declassified.

We believe declassification of tritium stockpile information would pose no danger to U.S. common defense and security interests. As Representative Lane Evans stated in support of his and Representative John Conyers' 1992 amendment to declassify certain information on fissile material and tritium stockpiles:

> Despite the [Bush] administration's arguments that this information is sensitive, releasing it would neither help our potential enemies or help other nations design or develop nuclear weapons. The cold war era Soviet threat drove the policy. Any justification for this secrecy disappeared with the breakup of the Soviet Union.[4]

Officials participating in the DOE Declassification Review, attempting to justify a decision not to declassify such information, have cited concerns that such declassification would pose a nuclear proliferation threat. The argument runs that, if historical information on tritium production and/or the total amount of tritium currently in the U.S. arsenal were to be made public, it would be possible for potential proliferants to calculate the precise

[3] Admiral James Watkins, Information submitted for the record of his testimony before the Senate Armed Services Committee, April 18, 1991, p. 70.

[4] Rep. Lane Evans, Congressional Record, June 3, 1992, p. H4093.

amount of tritium required for an individual nuclear weapon. With such information, the argument concludes, the ability of rogue states or terrorists to construct tritium-boosted nuclear weapons would be enhanced.

We believe this argument is without merit. First, general information on the amount of tritium contained in a single nuclear warhead is already in the public domain.[5] The declassification of general information on overall tritium stockpiles and requirements would not enable proliferants to refine more precisely their calculations of amounts of tritium needed.

Second, calculations of tritium requirements for individual weapons cannot be derived simply on the basis of total stockpile requirements. Presumably the amount of tritium required varies from one design to another,[6] and the U.S. nuclear arsenal has contained a wide variety of boosted weapons over the last four decades. It is not credible that proliferants could determine the tritium requirement for a single weapon by using the sort of rough calculation that appears to concern DOE (dividing the total U.S. tritium stockpile by the total number of weapons in the arsenal).

Third, even if one were able to calculate the precise amount of tritium needed, there is no proof that this knowledge would enhance a proliferant's ability to design weapons. Slight variations in the amount of tritium in a single weapon presumably might result in variable yields if the weapon were ever used, but presumably would not jeopardize the ability of the weapon to detonate.[7] Therefore, a proliferant would not need to know the precise amount of tritium required in order to design an effective tritium-boosted weapon.

In the interest of informed public debate, we urge DOE to declassify the following information:

The total amount of tritium currently in the U.S. nuclear arsenal;

---

[5] Thomas Cochran, Robert Norris, and William Arkin, "The Department of Energy's Savannah River Plant Reactors and U.S. Requirements for Tritium and Plutonium for Nuclear Weapons," Natural Resources Defense Council, October 19, 1988, p. 4: "We estimate that 20,000 to 22,000 warheads in the U.S. stockpile contain tritium. Each weapon has on average about 4 to 5 grams, with neutron bombs requiring a much larger quantity, perhaps as much as 25 grams."

[6] J. Carson Mark, Thomas Davies, Milton Hoenig, and Paul Leventhal, "The Tritium Factor as a Forcing Function in Nuclear Arms Reduction Talks," Science, September 2, 1988, p. 1168, footnote 2, make reference to "those weapons that contain the largest tritium charges," implying that the size of such charges varies from one design to another.

[7] Mark et al. (1988) make this clear when they note that tritium reservoirs in U.S. weapons could be "filled with a somewhat smaller quantity of tritium than is currently the practice without sacrificing weapon effectiveness." Mark et al., 1988, op cit., p. 1168, footnote 2.

The total amount of tritium held in reserve for use in the nuclear arsenal;

The number of nuclear weapons that, for the purpose of calculating tritium requirements, DOE assumes will be in the U.S. arsenal in the 2011-2015 timeframe;

The amount of tritium that DOE projects will need to be produced annually to maintain the nuclear arsenal after 2015.

As part of these comments, we are including two additional items pertaining to tritium's potential as a nuclear arms reduction device because of its relatively rapid rate of radioactive decay. One item is a letter to George Bush and Mikhail Gorbachev prior to their summit meeting in 1990, signed by 54 prominent diplomats, scientists and other experts, urging an agreement to halt production of tritium, as well as plutonium and highly-enriched uranium. The second is The Tritium Factor, the proceedings of a 1988 workshop sponsored by NCI and the American Academy for the Advancement of Science. This workshop analyzed NCI's "Tritium Factor" proposal—a call for a mutual tritium-production halt as a means of using tritium's decay to pace a reciprocal build-down of nuclear weapons.

The Clinton administration has recognized the importance of its fissile material production cut-off proposal at the United Nations Conference on Disarmament in Geneva, as well as in its diplomacy at the United Nations conference in May 1995 that extended indefinitely the Nuclear Non-Proliferation Treaty. Equal consideration should be given to a tritium production cut-off, as well. Such consideration requires the public availability of complete information on U.S. tritium supply and requirements.

TSR–F–018
COMMENT LETTER

April 21, 1994

To whom it may concern:

In reference to the Tritium Supply and Recycling Draft Programmatic Environmental Impact Statement and the future of Pantex, I wish to make a few comments. As shown by the terrorist activity in Oklahoma City, the world is still a volatile place. Being that Tritium supplies are needed to maintain our defense capabilities, I believe Pantex would serve as a great location for the following reasons.

First, the geographic location of Pantex is ideal, being centrally located. It has close proximity to a major airport and a major trucking route, I-40. This gives Amarillo or the Pantex facility a great advantage over other sites.

Second, the public support for Pantex is and has always been high. The public has confidence in the safe record that Pantex has demonstrated. The public is kept informed of various issues which affect them as related to the Pantex plant and its safety.

1/13.08.01

Third, the security and the facility set up and lay out makes it an ideal location for such endeavors. Many sites have several separate locations, where Pantex is on one site, and maintains a strong and secure location for such production.

Lastly, the expertise and educational background of the employees at Pantex are such that a Tritium production site, as well as multiple other defense oriented operations, could be successfully managed.

Overall, the impact that the Pantex Plant has on the area is great and for the most part positive. Additional missions are needed to give Pantex a bright future for the 21st century. This Tritium production should be one of these missions.

Sincerely,

Darryle L. Hunt
310 Canyon Crest
Amarillo, TX 79124

TSR–F–019
COMMENT LETTER

05/16/95 11:35 EXP. TECHNOLOGY DIV. 002

2803 Lawton
Amarillo, TX 79110
May 3, 1995

Sirs:

1/13.08.01

The Tritium Supply and Recycling Draft Programmatic EIS seems adequate to me. Upon considering the alternatives, I believe the Pantex Plant would be the best site for tritium production.

Patrick Phelan

Patrick Phelan

TSR–F–020
COMMENT LETTER
PAGE 1 OF 1

1/13.00.33 It also appears that some of the comments included in the PEIS are preferential toward certain technologies and certain sites.

If the preferred alternative already exists within the DOE bureaucracy collective mindset, the PEIS hearings are a farce and deceptively indicate public impact on this decision. DOE must look at all options with equal scrutiny.

2/13.08.01 Amarillo is a viable site for any proposed technology and because of the history of safety and environmental stewardship at Pantex, the public acceptance of this activity is high.

TSR–F–021
COMMENT LETTER
PAGE 1 OF 2

05/11/95 THU 10:33 FAX 202 586 8487 ++→ JULIE BOVARD 002
05-04-1995 09:12 7024+0284+1808 OFFICE OF AMO DOE NV P.02/03
04-28-95 01:48PM FROM SEN. BRYAN-D.C. TO 17020951847 P002/003

RICHARD BRYAN
NEVADA
[illegible]

United States Senate
[illegible]

April 28, 1995

Mr. Troy Wade
Chairman
Nevada Alliance for Defense, Energy, & Business
P.O. Box 97778
Las Vegas, Nevada 89193

Dear Troy:

1/13.06.01 After careful consideration, I am writing to lend my full support to efforts to bring a new accelerator for tritium production to the Nevada Test Site.

As we have discussed many times in the past, the NTS is a valuable resource to Nevada, and the nation, and has, over the years, provided many high quality jobs for Nevadans. The NTS has also made many major contributions to the national defense, and is well respected worldwide as a premier testing and research facility.

2/13.06.01 The accelerator production of tritium, one of the most important national defense missions of the Department of Energy in coming decades, will continue the NTS's long history of testing and maintaining our nation's active nuclear weapons stockpile. A tritium accelerator is well suited to take advantage of the unique capabilities of the NTS.

3/21.01 As you know, I continue to be concerned with a number of the alternative missions proposed for the NTS, largely due to my consistent opposition to the storage or disposal of surplus special nuclear materials or high level nuclear waste in Nevada.

4/13.04.01 Since the tritium accelerator produces no high level waste, and will not require the storage or disposal of such materials in Nevada, I am comfortable lending my full support to the project.

Of course, bringing the tritium accelerator project to Nevada will be a challenge. The Chairman of the Senate Armed Services Committee, Senator Strom Thurmond, and the Chairman of the House National Security Committee, Congressman Floyd Spence.

TSR-F-021
Comment Letter — Page 2 of 2

05/11/95 THU 10:37 FAX 202 586 0467 ... JULIE HOWARD 001
05-04-1995 08:13 702+295+1002 OFFICE OF AND DOE/NV ... P.03/03
04-28-95 01:48PM FROM SEN. BRYAN-D.C. TO 317028951547 P003/003

Mr. Troy Wade
April 28, 1995

Page 2

are both from South Carolina, and are actively working for the Savannah River site. In addition, the ranking member of the Senate Armed Services Committee, Senator Sam Nunn (D-GA), is from Georgia, which borders the Savannah River site. Nevada's strong representation on both the House and Senate Appropriations Committees, however, could provide another avenue for consideration of the NTS for this important project.

I look forward to working with you to develop the most effective strategy for bringing the tritium accelerator project to the NTS.

Sincerely,

Richard H. Bryan
United States Senate

FAX TRANSMITTAL # of pages ▸ 2
To Julie Howard From M.J. Byrne
Fax # 703/931-9222
FYI

TSR-F-022
Comment Letter — Page 1 of 2

Westinghouse Electric Corporation
Energy Systems
Box 355
Pittsburgh Pennsylvania 15230-0355

NDP-95-012

May 11, 1995

Dr. Stephen M. Sohinki
U.S. Department of Energy
P.O. Box 3417
Alexandria, VA 22302

Subject: **Comments on Draft Environmental Impact Statement for Tritium Supply and Recycling**

Reference: *1.* *DOE/EIS-0161, "Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling," February, 1995*

Dear Dr. Sohinki:

Westinghouse has reviewed selected parts of the reference draft PEIS and we have the following comments:

1/11.00.33

1) There is at least one error in the first paragraph of page S-21. The cancer risk value in the second line (column 1) should be 1.4×10^{-10} not 7.1×10^{-4}. The other numbers are part of the MACCS or GENII output and cannot be easily checked.

2/11.00.34

2) It should also be more clearly stated in the summary that:

a) The calculated consequences are based upon the accident occurring and that the accident, particularly the high consequence accident, is a low probability event. The probability is included in each summary paragraph, but not emphasized. A "risk-based" summary comparison, such as Tables 4.2.3.9-3 and -4 should be included in the summary. This may compensate for higher doses with lower frequencies.

b) Also, while this will affect every system, the summary presents the consequence levels as absolute, i.e. "this exposure would result in 230 cancer fatalities" (see page S-21, paragraph 1). The tables in Appendix F state that the numbers are mean values (based on variations in meteorological conditions for an accident occurring throughout the year), which is typical of this type of analysis. All values, i.e. doses, cancer risks, fatalities are mean values and summary should acknowledge this, therefore overlap of the consequence level from different systems is possible and likely.

34MML7051395-1

TSR–F–022
COMMENT LETTER **PAGE 2 OF 2**

NDP-95-012
May 12, 1995

Page 2.

3) In the appendices, the explanation of the complementary cumulative distribution functions is incorrect, although the error again affects each system. For the AP-600 system it is described on page F-13, second column. The following statements:

> "The curves show the probability that the number of cancer fatalities that may result when an AP-600 ALWR severe accident exceeds the value "N" on the horizontal axis. The curves assume that the accident has occurred."

Should be replaced by:

3/11.00.37

> The curves are based on the assumption that the accident has occurred and show the variation in cancer fatality magnitude based on the site meteorological conditions, i.e. to account for an accident occurring throughout the year. Therefore the actual probability of a specific consequence level (i.e. fatality magnitude) is equal to the probability of the accident times the conditional probability of the consequence level.

4) The tables and figures that contain information relative to latent cancer deaths (i.e. Figure 4.6.3.9-1) must also identify the risk alongside or as an integral part of the figure or table. Otherwise, this latent cancer information out of context may be misunderstood or misused.

I can be reached at (412)374-5150 if you should want to discuss these issues further.

Sincerely yours,

WESTINGHOUSE ELECTRIC CORPORATION

M. L. Travis, Manager
Nuclear Development Programs

/cad

Attachments

54M-MLT031295-2

TSR–F–024
COMMENT LETTER **PAGE 1 OF 1**

7101 Smoke Ranch Road, #2104
Las Vegas, NV 89128
May 13, 1995

U.S. Department of Energy
P.O. Box 3417
Alexandria, VA 22302

TRITIUM RECYCLING AND PRODUCTION FACILITY

The purpose of this letter is to give comments for inclusion in the programmatic environmental impact statement the Department of Energy is preparing for a proposed facility for recycling and producing tritium.

I encourage the Department of Energy to build a linear accelerator to produce tritium, rather than a reactor. I further encourage the Department to locate that accelerator at the Nevada Test Site.

1/13.04.01

The accelerator method of producing tritium has environmental, safety, and economic advantages over the reactor method. An accelerator would not generate high-level radioactive waste and would release about 95 percent less tritium into the environment than would a reactor. An accelerator does not store energy, unlike a reactor, and thus has the potential for fewer and less severe accidents affecting employees and the public. Because an accelerator would produce less waste and lead to fewer accidents and incidents than a reactor, an accelerator would have fewer associated costs and would be cheaper to operate than a reactor.

2/13.06.01

The Nevada Test Site, managed by the Department of Energy's Nevada Operations Office, offers physical and technical advantages, as well as research opportunities, that make it an ideal location for a tritium accelerator. For more than 40 years, the Nevada Test Site has been home to weapons-related Department of Energy projects important to developing and maintaining the United States' defense capabilities. The Test Site already has the necessary infrastructure and support systems in place, is secure and isolated from major population centers, and has room for a half-mile-long accelerator and the accompanying tritium-handling buildings. The Nevada Test Site also has available a trained work force of more than 5,000 scientists, engineers, and technical and administrative support personnel who have years of experience completing weapons-related projects for the Department of Energy. The Test Site also is within 100 miles of the University of Nevada, Las Vegas, which could provide exciting opportunities for collaborative research in the fields of science, engineering, and medicine.

In conclusion, I urge the Department of Energy to use accelerator technology at its new tritium recycling and production facility and to locate that facility at the Nevada Test Site.

Alexa Moyna

7778 Woodward
Woodridge, IL 60517
U.S.A.

Telephone: 708 985 0842

May 9, 1995

Stephen M. Sohinki
Director
Office of Reconfiguration, DP-25
Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

Dear Mr. Sohinki:

In your Draft PEIS for Tritium Supply and Recycling, you invited interested parties to submit comments. Here are mine:

1/18.01

In 1991, the U.S. had about 19,000 deployed strategic and tactical nuclear warheads. Strategic warheads are being reduced to 6000 under START-I and to 3500 under START-II (if implemented), while tactical warheads are being voluntarily withdrawn from service.

Tritium decays with a half-life of 12.3 yr, so that in 25 years its unreplenished inventory is reduced by a factor of four.

Thus, the original inventory of U.S. tritium should be sufficient to maintain a START-I warhead level until at least 2015—and longer if more treaties or voluntary nuclear-arms dismantlement are implemented.

From these fundamental considerations the following can be concluded: Tritium retrieval from warhead retirements and other potential sources of acquisition should comfortably overcompensate for losses from radiation decay and processing.

Therefore, decisions on new tritium production facilities could be postponed until the turn of the century.

Sincerely,

Dr. A. DeVolpi, physicist

FAX TRANSMITTAL
# of pages ▶ 2
To Julie Howard
From Linda
Dept./Agency T+
Phone # DP-25
Fax #
GENERAL SERVICES ADMINISTRATION
5/15

May 15, 1995

Citizen Comment
Linda Zentner
Novato, CA

Dear Evaluators:

In this day & age nuclear deterrents are needed. It is wise & prudent to provide the production & recycling of Tritium to maintain our stockpile on a moderate level while also complying with environmental safety & health (ES&H) standards. In a more perfect world, we could reduce to zero any ES&H risks. So as individuals working towards those ends, we must deal realistically with outside threats to life, liberty & the pursuit of peace and happiness of evolved, upstanding peopled countries, and do it cost effectively.

Listen closely to the local citizens of the site I am about to propose the DOE choose for this tritium endeavor. Balance the risks, educate people on the complex issues & the limitations so they (as well as the DOE) can find solutions to the problems presented. There are risks to maintaining our defense and they seem to be in porportion to the lack in evolution of consciousness (as well as conscience) of some individuals or countries. These weapons are deterrants - and I pray

(2)

That is all they will EVER be. We don't want to harm our own citizens or environment, but the lowest level risks & safe management will balance out in the face of possible larger risk does outweigh the smaller risks we accept in this proposed action.

1/13.08.01 With an eye toward proceeding with building/upgrading tritium facilities at Pantex, I urge the utmost care in worker, population, & environmental (air, water, land, animal) protection. And, to have the best emergency/accidental plans & preparedness & to keep them active, current, & thus, improving all the time.

2/06.01 The Pantex site will impact the fewest people, as the population is the lowest now & in the projection for 2020. Since it is the highest in effecting wildlife, we need to seek experts & organizations to solve the problems construction will pose. Chevron's presence once threatened hawks & they found a solution.

1/13.08.01 continued This site offers the least risk in shipment of tritium as assembly can be done there. Solid mix LLW generation, liquid sanitary waste, solid sanitary waste, solid LLW generation are all the lowest for this site. Personal rem dose is the lowest & worker/worksite annually are the second lowest in risk factors when using the APT technology. And the APT located there would cause/(cost) the fewest changes in tritium production.

(3)

3/04.02.01 Since the Pantex is a dry site there would be better containment of all waste and offer better biological, thermal & atmospheric breakdown. At the Pantex site the studies show there will be no liquid release - offering containment and less spreading in the atmospheric-water cycle. No breakdown discharges either.

Unemployment at this site will decrease the most. Also there is no seismic threat.

No surface water will be used at this site, and I only wonder if the aquifer (Ogallala) is contained on-site and if there is seepage into other water ways.

4/09.03 Shipments of solid LLW to NTS (or ses?) should be carried out with the utmost precaution, and personnel screening.

APT is my proposed technology in that is the only one where spent nuclear fuel is not generated - I term this the highest level, longest lasting waste.

5/13.04.01 APT generates the lowest risks of cancer (exposure) & cancer fatalities to the population, workers & site - often it is negligible. There is no liquid LLW generation, the lowest increase in solid LLW, & the least shipments of solid LLW. It has the lowest statistics of waste generation, & lowest producer of tritiated heavy water. And lowest in accidents. It is wise to move forward with new, better, safe technology.

God Bless! We CAN Do - our BEST - There are Solutions!

May 15, 1995

U.S. Department of Energy
P.O. Box 3417
Alexandria, VA 22301
ATTN: Comments – Tritium Supply and Recycling
Draft Programmatic Environmental Impact Statement

To Whom It May Concern:

I am submitting the following comments for consideration in the Tritium Supply and Recycling DPEIS process.

POLITICAL APPROPRIATENESS

1/19.01 Decisions regarding the production and recycling of tritium for defense purposes need be reformulated in keeping pace with the proposed legislation to drastically reduce the deficit and balance government spending. DOE and the Department of Defense both surely embrace the tritium projects, even so, the projects may well represent political faux-pas actions.

2/18.15 Global nuclear disarmament should also be considered an important variable in the decision whether or not to fund any such facility that will produce tritium, the "trigger" mechanism of nuclear weaponry: just days ago the nuclear powers and other affected nations agreed to extend the nuclear Non-Proliferation Treaty in perpetuity. It would be devastating on an international political level should the department forego the Clinton administration policies regarding non-proliferation.

ECONOMIC ISSUES

3/13.00.01 Supposedly, the existing tritium supply and reserve will last for a period pinpointed between sixteen to twenty-one years if not longer before becoming seriously low. There is time enough to make a decision on this issue without needing to feel rushed. During this period of legislative department elimination, it does appear economically offensive to contemplate erecting a new costly facility devoted to generating tritium, especially when it could be imported.

4/22.01 The economic cost-benefits of the DPEIS alternatives to producing tritium haven't been fully considered. Several alternatives, including ones dismissed, appear to be quite cost-effective: the idea to utilize and upgrade existing DOE tritium recycling facilities and reactors or accelerators; the idea to purchase foreign-source tritium such as from a NAFTA partner, Canada; purchasing irradiation services from existing commercial facilities. These alternatives and others should be further explored.

PUBLIC INVOLVEMENT ISSUES

5/15.01 The public needs to be involved from the onset of the decision-making process regarding this issue. DOE should therefore encourage input from the public as well as disseminate information regarding

5/15.01 continued its implementation plan. Consultation with the American Indian tribes located nearby potential tritium facilities also needs to be considered. DOE should consider holding group briefings in addition to public scoping meetings in areas nearby the location sites where tribes could be impacted by this action.

TECHNOLOGICAL DISCRIMINATORS

6/13.00.07 The various facility designs under consideration such as Accelerator production of tritium (APT), Heavy water reactor (HWR), Modular high temperature gas-cooled reactor (MHTGR), and Advanced light water reactor (ALWR) all seem to impose harm in one way or another to the surrounding environment, including plant, animal, and human life forms. If it is decided that tritium production and recycling is necessary to achieve a goal that the public is in agreement with, then the least harmful design and method should be selected.

ENVIRONMENTAL CONCERNS

7/16.21 The impacts of tritium to the environment, from initial material collection to end bi-products needs to be considered in the supply and recycling tritium process. National Environmental Policy Act regulations should be addressed where the proposed federal action would impact the public health, welfare, and environment. Some questions regarding site discrimination to consider:
How will endangered species as well as other species be affected by tritium processing and how will these species be protected from harm?
How and what government and emergency measures will be undertaken should a radiological accident involving tritium processing occur?
How, where, and when will tritium end products to be stored and disposed of?

I look forward to studying this issue further.

Sincerely,

Laura Hopkins
651 Lexington Place
Washington, DC 20002

TSR–F–031
COMMENT LETTER

UNITED STATES DEPARTMENT of the INTERIOR
BUREAU OF LAND MANAGEMENT
Las Vegas District Office
4765 Vegas Drive
P.O. Box 26569
Las Vegas, Nevada 89126

In Reply Refer To:
1793 (NV-063)

MAY 15 1995

U.S. Department of Energy
P.O. Box 3417
Alexandria, VA 22301

To whom it may concern:

The following are comments for the Tritium Supply and Recycling EIS, Draft.

For Table C-3 make the following minor changes (which are underlined):

1/06.14

Plants

Amargosa Penstemon	*Penstemon fruticiformis ssp. amargosae*
Kingston bedstraw	*Galium hilendiae ver. kingstonense*

2/06.15 Have you any records for Parish's phacelia (*Phacelia parishii*) for the NTS? This annual has been recently added to the Federal candidate plant species list.

3/13.04.01 If this project is located on the NTS, the preferred method expressed by most at BLM would be the Accelerator Production of Tritium method because it uses the least water, disturbs the least amount of land, and would generate the least waste.

4/15.09 A preferred alternative was not designated for the reasons stated in the document. While this is understandable given the scope of the project, it makes the document difficult to evaluate. For instance, if the DOE does not give a high probability to locating the project at the NTS then persons reviewing the document will not invest as much of their valuable time in reviewing the document.

Thank you for the opportunity to review this document. Please refer questions to our Environmental Planning Coordinator, Gayle Marrs-Smith at (702)-647-5156.

Sincerely,

District Manager

TSR–F–032
COMMENT LETTER

THE FUTURE IN OUR HANDS

NASHVILLE PEACE ACTION

P.O. Box 121333 Nashville, TN 37212 (615) 321-9075, 321-9091

COMMENTS on the Draft PEIS for Tritium Supply and Recycling
by Nashville Peace Action
May 15, 1995

Comments submitted by: Dave Hedgepeth
Nashville Peace Action
P.O. Box 121333
Nashville, TN 37212
(615) 321-9091

submitted to: Stephen Schinki, U.S. Department of Energy

I. INTRODUCTION

The debate over the reconfiguration of the nuclear weapons complex, begun in the late 1980s, is still raging despite the fact that nuclear weapons production facilities are losing their purpose and going out of business. The Hanford Site, the Savannah River Site, the Mound Laboratory and more have turned into or are turning into purely Environmental Management sites, to be cleaned up after fifty years of environmental destruction. The Department of Energy's (DOE's) preparation in the early 1990s of two Reconfiguration PEIS's resulted in nothing, except admittance by DOE that the world had changed and that new facilities were not needed.

Lessons about our changing world seem to be lost on DOE and the Nuclear Weapons Council, who are now pushing a new tritium production facility. These are the experts, the ones who pushed for reconfiguration in the 1980s, only to find that the facilities were unneeded. The American people were not experts, but could see the writing on the wall, a wall that was torn down in Germany. With the exception of persons who stood to benefit economically from new nuclear weapons facilities, the public told DOE at public hearings in 1991 and 1993 that new facilities were not needed. DOE and the federal government listened, and the public's perceptions prevailed.

The American people continue to make arguments against new facilities, similiar to the ones we have made for several years. We hope our perceptions continue to prevail.

1/18.15 1. The United States has insufficiently planned for future cuts in the nuclear weapons arsenal. By the time the U.S. fully implements START II in 2003, our arsenal will contain about 8,000 weapons including spares. By the year 2010, when a new tritium production facility is operable, our government very likely will have negotiated further cuts in the arsenal. Such cuts will push the so-called need for tritium back even further than 2010. In fact, in a meeting with Everett Beckner on May 9, representatives of the Military Production Network were informed that an arsenal of 1,000 weapons would push the date back well beyond 2010.

1/18.15 continued

The U.S. should continue to seek quick ratification of START II and negotiate deeper cuts. This would make the world a safer place and greatly reduce the need for additional tritium. Given the trend toward nuclear disarmament (and the law that requires it--i.e., the Nuclear Non-Proliferation Treaty, specifically Article VI), and given the fact that two Reconfiguration PEIS's essentially have been abandoned in favor of reality, DOE and the Nuclear Weapons Council should not pursue a Record of Decision on the Tritium Supply and Recycling PEIS; or they should take "NO ACTION" as the preferred alternative.

2/13.00.01

2. New production could sour nuclear non-proliferation efforts. Many nations will see that the United States, in our efforts to maintain a large arsenal well into the next century, is not serious about nuclear arms control. This sends exactly the wrong signal to send to other nations, and could hurt other U.S. efforts to stem the spread of weapons of mass destruction.

3/19.01

3. New production is fiscally irresponsible. While Congress frets over how to cut the deficit, it should look first to wasteful and potentially harmful weapons programs like a new tritium production source, which receives $50 million in the President's Fiscal Year 1996 budget.

4/16.14

As Congress makes its decisions for FY 1996, it should have a full budget analysis from DOE to see how much this facility will cost in out years. Unfortunately, DOE is choosing not to release budget numbers until an unspecified date, even though it has specified all kinds of other information such as land resources, site infrastructure, radiological impacts, etc.

DOE should make clear to Congress and the American people how much this facility will cost, and let even those who believe tritium production is necessary determine how bad of a taste the multi-billion dollar price tag leaves in their mouths.

Nashville Peace Action believes that a new tritium production facility is unwarranted, and would be counterproductive. We recommend that "NO ACTION" be taken at this time; and that the Record of Decision for this PEIS reflect that alternative.

II. TRITIUM SUPPLY AND RECYCLING PROPOSAL

The Executive Summary states that "Under No Action, DOE would not establish a new tritium supply capability. The current inventory of tritium would decay and DOE would not meet stockpile requirements of tritium" (p. ES-3). This statement is true if and only if the U.S. maintains a START II arsenal indefinitely. Such an occurrence is unlikely given political realities. DOE should analyze various stockpile levels, not just the most conservative ones.

Also on p. ES-3, DOE states that the PEIS will address the possibility of building a multi-purpose, or "triple play" reactor, "defined as one capable of producing tritium, 'burning' plutonium, and generating revenues through the sale of electric power." Such a reactor would be counterproductive in at least two ways:

5/13.00.55

a. it would arguably violate U.S. policy. DOE states on p. ES-22 of the Executive Summary, in order to make the argument that existing civilian reactors should not be used to produce tritium, that it is "the long-standing policy of the United States that civilian nuclear facilities should not be utilized for military purposes. Such use of commerical reactors would make the United States non-proliferation efforts much more difficult because other countries could demand equal footing." If a primarily military facility is used to generate commercial electricity, the line between the military and commercial sectors is blurred, with potentially harmful consequences.

b. it could be cost-prohibitive. Plutonium is more dangerous than uranium reactor fuel. If plutonium is used as fuel, the total costs should be evaluated, not just how much revenue will be generated. The RAND Institute estimated in 1993 that mixing plutonium with waste would cost $100 million/100 metric tons, versus $560 million for running the same amount of plutonium through a reactor.

III. PURPOSE OF AND NEED FOR THE DOE'S ACTION

The Executive Summary on P. ES-5 says, "The current Nuclear Weapons Stockpile Plan, which was approved by President Clinton on March 7, 1994, authorizes weapons production and retirement through fiscal year 1999....Even with a reduced nuclear weapons stockpile and no identified requirements for new nuclear weapons production in the forseeable future, an assured long-term tritium supply and recycling capability will be required."

As stated above, tritium supply is needed if and only if the United States maintains a START II arsenal indefinitely. Recycling could continue well into the twenty-first century if the arsenal drops below START II levels.

6/18.08

The Nuclear Weapons Stockpile Plan has been left in the hands of the experts, who are unresponsive to comments from the public, Congress and possibly even DOE (DOE's Defense Programs, despite being a member of the Nuclear Weapons Council, claims to play a passive role on that Council). The Plan should remain classified, but a) an unclassified version should be subject to impartial review, and b) the Council should promote an open debate on the necessity of a START II arsenal. The public, after reviewing the options, might be quite ready to accept an arsenal

of 1,000 weapons, thus delaying the need for new tritium production and massive costs.

7/13.00.09 DOE says on p. ES-7 that "The analysis indicates that it will take approximately 15 years to research, develop, design, construct, and test a new tritium supply source before new tritium production can begin." This statement may be true of the reactor options, but is not true of the accelerator. In the public hearing at Oak Ridge on April 12, we learned from DOE that Accelerator Production of Tritium could begin in 2006, 4-5 years before reactor production. Of course, it is also true that if the accelerator is chosen by DOE as the preferred technology, then DOE could wait 4-5 years before beginning construction. In that waiting period, further arms reductions could be made that would push back the date for a new tritium production facility, improving U.S. non-proliferation efforts in addition to potentially saving billions of dollars.

IV. TRITIUM SUPPLY AND RECYCLING

8/08.10 DOE uses this section in the Executive Summary to, among other things, outline the total number of construction and operation workers for each of its technology alternatives. DOE's estimates, however, seem to be overestimates. Overestimation is a significant problem, in that jobs are often the primary if not the sole reason that various locales lobby to be the site chosen for nuclear weapons facilities.

Most of DOE's estimates are seemingly based upon assumptions made when DOE was developing plans for the New Production Reactor in 1991. In the current draft PEIS, Volume II, DOE notes on p. A-31, "Design bases for each of the tritium supply technology options have been previously developed and are as follows:

* Heavy Water Reactor (HWR) -- All requirement documents developed in the New Production Reactor program for the HWR.

* Modular High Temperature Gas-Cooled Reactor (MHTGR). All requirement documents developed in the New Production Reactor program for the MHTGR.

* Advanced Light Water Reactor (ALWR) -- All requirements developed for the New Production Reactor program and the data, as gathered, from the Surplus Fissile Materials program.

* Accelerator Production of Tritium (APT) -- All requirement documents developed in the Tritium Supply and Recycling program for the APT as amended."

At the April 12 public hearing in Oak Ridge, DOE gave the

public a copy of a "Socioeconomics" chart (in an "Environmental Impact Discussion Group" packet) that discusses employment generated by various technologies. Presumably the chart is based upon documents developed in the New Production Reactor program.

In the Appendix of these comments is part of a paper written by William J. Weida, a Professor of Economics at Colorado College, who uses the same documents used by DOE to determine employment statistics. Dr. Weida's estimates come out lower than DOE's. DOE should give accurate estimates of jobs generated--if Dr. Weida's projections are inaccurate, DOE should refute them.

8/08.10 continued

V. SITES

9/16.21 In most of its PEIS's, DOE tends to make everything look neat and tidy. Nashville Peace Action objects to the fact that DOE fails to mention that the sites under consideration for a new tritium production facility are Superfund sites. Further, one reason that the Savannah River Site is in such poor shape is its past tritium production activities. Defense Programs may believe that it doesn't need to talk about such mundane matters. We believe that an Environmental Impact Statement is incomplete without broad, if not thorough coverage of past activities.

We also are not going to play the game of "Not In My Back Yard." Just like we don't reject spent nuclear fuel for Oak Ridge without considering the people around other potential dumping grounds, but rather look at the entire nuclear waste picture to try and help make wise decisions, so we believe that a tritium facility should not be built anywhere. The facility is unneeded, and the jobs could be created in other more productive and less dangerous ways.

VI. ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

DOE eliminates from consideration "Purchase of Tritium from Foreign Sources" (Executive Summary, p. ES-20). Given the facts: that Canada has been a friend and ally for decades; that our two nations have a Defense Production Sharing Agreement; and that Canada has produced various defense items for the United States to purchase, such elimination seems unreasonable.

10/13.00.16 Forget the probability that Canada will be our ally for decades to come. What would be the cost of purchasing as much tritium as possible from that nation to last for ten or so years beyond 2010? Such a purchase would put off a decision to build a new tritium production facility, saving money and providing time for further arms reductions.

DOE also rightly eliminates the "Redesign of Weapons to

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COMMENT LETTER

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05/24/95 WED 15:40 FAX 202 586 0467 →→→ TETRA TECH 007

Mr. Steve Sohinki/Page Two

4. Consideration should be given to the fact that current industry proposals envision a privately financed multi-purpose reactor that would require minimal government funding and would result in a charge to the government only when tritium was actually produced as needed. The accelerator, on the other hand, requires a $2.5 billion to $3 billion Federal investment in a time of great budget austerity and focus on budget deficit reduction. 4/13.00.31

Finally, Citizens for Nuclear Technology Awareness wishes to state on the record that our organization strongly supports locating the new tritium source at the Savannah River Site in South Carolina. Savannah River has the expertise, the history of tritium operations, the infrastructure, and unparalleled community support for hosting this mission. It is a natural, logical conclusion for the government to reach, and we trust the Department of Energy will see this decision as an obvious one. 5/13.09.01

As for the technology itself, we favor a technology that can be counted on to get the job done reliably with the lowest possible cost to the taxpayers. We believe this technology is the multi-purpose reactor, not the accelerator which has not been proven in its ability to produce tritium and which has no opportunity for private sector financing.

We appreciate the opportunity to present these comments. Please let us know if we can provide any further information.

Sincerely,

Michael Butler
Executive Director

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COMMENT LETTER

PAGE 1 OF 3

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1/16.31

- The DOE manpower and associated contractor support, after ROD, to support each technology should be listed in the PEIS.

DOE personnel and their contractors are resources that are paid for by taxpayers and should be accounted for. This listing may put to bed the concern that DOE tends to create programs that will maximize the number of jobs retained/created in DOE via study and development programs with DOE employees and associated contractors.

Comments on
Tritium Supply
& Recycling PEIS

William F. [illegible]
[illegible] Circle
[illegible], SC [illegible]

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COMMENT LETTER **PAGE 7 OF 7**

32/13.04.07	21	A-102	The comment relative to the paper study status of the accelerator based disposition of Plutonium seems to apply generally to the APT. Even here the bias of the authors shows with statements on the great potential of this option.
33/11.00.15	22	E-14	The 170 person-rem for the reactor and tritium extraction is inconsistently high. System 80+ conservatively estimated 79 person-rem and defended this number successfully to NRC as shown on Pg. 12-11 of the FSER (NUREG 1462).
34/13.03.10	23	F-1	The process described ignores the fact that the two large ALWRs have received FSERs and are proceeding through certification.
	24	F-8	System 80+ has a FSER and NRC approved values should be used. The System 80+ designer should have been consulted before the PEIS was published.
35/13.03.09	25	F-26	If data could not be found in System 801 NRC docket, it should have been requested from ABB-CE.
36/11.00.19	26	F-26	The 1x10^{-3} frequency of occurrence is not consistent with the releases shown for a large pipe break. For the releases given, numerous safeguards would have to fail -- which would lower the frequency of occurrence to the 10^{-6} range.
37/13.00.62	27	I-40, 41	Typo's under no action - INEL should be NTS and ORR and Pantex should be SRS.
38/11.02.07	28	I-77	It seems inflammatory to include statements such as "If this accident occurred, this exposure would result in a total of -------- cancer fatalities.

TSR–F–047
COMMENT LETTER **PAGE 1 OF 2**

05/24/95 WED 10:40 FAX 202 586 0467 ... INTRA TECH 001

Citizens for Nuclear Technology Awareness

FAX TRANSMITTAL # of pages ▸ 2
To Jule Howard From Booth

May 15, 1995

Mr. Steve Sohinki
Director
Office of Reconfiguration DP-25
US Department of Energy
1000 Independence Avenue SW
Washington, DC 20006

Dear Mr. Sohinki:

Citizens for Nuclear Technology Awareness (CNTA) was very pleased to participate in the Department of Energy's public hearing on the new tritium source PEIS in North Augusta, South Carolina, on April 20, 1995.

As you may know, CNTA is a non-profit grassroots citizens organization with more than 900 members in South Carolina and Georgia. Our members are very concerned about the future of the Savannah River Site, and we are actively engaged in public education and public information programs pertaining to potential new missions for the Site.

We wish to offer the following comments on the PEIS for the record:

1. The public information materials used by DOE officials in briefings concerning the PEIS refer to cost and schedule studies which were being done in conjunction with the PEIS. It is CNTA's position that the results of these cost and schedule studies are vital to making an informed decision about a new tritium technology and a preferred site. We believe that no decision should be made until the results of those studies are available, they have been shared with the public and there is opportunity for public comment. 1/16.07

2. In the cost-benefit analysis, consideration should be given to the benefit the Government would receive in being able to dispose of plutonium while meeting future tritium production needs. If the multi-purpose reactor can carry out the plutonium disposition mission, that benefit should be included in consideration of the multi-purpose reactor as an option for producing tritium. 2/13.00.05

3. The future need for electricity in the Southeastern part of the United States should also be assessed as part of the Environmental Impact Statement. The fact 3/02.04

1323 Pendleton Street
Columbia, SC 29201

TSR–F–046
COMMENT LETTER

COMMENTS ON THE PEIS

	Comment #	Page #	Comment
12/14.01	1	S-3	The Multi-purpose Reactor should be evaluated vs. the total impact of separate tritium supply and a plutonium disposition technology (1 Facility vs. 2). DOE should also consider other possible tritium supply needs for other defense missions, critical non-defense missions and/or energy security. The ITER program, for instance, could require a significant tritium quantity.
13/13.04.03	2	S-5	The 15 yr. schedule seems optimistic for the accelerator based on the lack of technical maturity of the concept for this application.
14/13.05.03	3	S-19	The 64217 MGY blowdown for a large ALWR is inconsistent with Table 4.6.3.4-1.
15/08.10	4	S-21	The estimate for employment at a MOX facility seems to be high. However, if pit disassembly & conversion are included, then the number might be more reasonable.
16/13.00.58	5	3-1	It seems inconsistent for the PEIS to confuse its evaluation by considering 3/16 of 1988 goal (nominal) and then say that 3/8 of the 1988 goal is the basis for the PEIS. This nominal goal seems to only benefit the APT.
17/13.04.07	6	3-3	The statement that the phased APT could begin operation in 2008 implies that other technologies could not begin operation until 2010 seems questionable, considering the maturity of the large ALWR's and the pre-conceptual design status of the APT.
18/02.03	7	3-4	The PEIS should consider the fact that any electricity generated from a reactor will offset a fossil fueled power plant that would have to be constructed in the region. The avoided impact of the power plant should be credited in the PEIS for the reactor.
19/13.04.03	8	3-7	The decision not to consider non-evaporative cooling towers based on technical uncertainty seems to demonstrate significant technical uncertainties for the APT.
20/13.03.07	9	3-36	The assumption of one 600 MWe ALWR, with no downrating in power output, while producing 3/8 goal quantities of tritium, does not seem credible.
21/13.03.11	10	3-36	The 1-2 years to check out the reactor isn't necessary for System 80+.
22/13.03.12	11	3-38	The electrical load (house load) for a large ALWR is produced by the reactor. A 1300 MWe reactor is "net", after this house load is accommodated.
23/13.04.03	12	3-40	The design status of the APT design is reflected in statements such as "the number and arrangements of building and support areas are illustrative only and can change significantly as design progresses". This again emphasizes that the design may not be mature enough to be included in the PEIS.

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24/04.02.02	13	3-59	The APT exceeds the lowest estimates of recharge rates for the aquifer at NTS. Considering the lack of design maturity for the APT, a contingency should be added to insure that this has not been underestimated.
25/11.00.08	14	3-81	The dose information for the large ALWR is not consistent with System 80+, based on NRC approved calculations.
26/13.00.61	15	4-13	The paragraph on uncertainties is misleading on maturity of design. The inference is that the sources being different present an uncertainty and the issue of the maturity of the APT design is ignored.
27/05.05	16	4-385	The dewatering because of construction activities for the APT could be a significant problem, as could be the potential spread of activation products in the soil. Should the APT design proceed, it is possible that the required under ground depth may increase, resulting in further environmental impact.
28/11.00.10	17	4-421 4-385	The severe accident risk for ALWR's is stated as being low when compared to the risk of cancer fatalities from all other causes. The comment that "the results of the analysis indicate that the tritium supply technology with the highest severe accident sequence is the ALWR" seems misleading and should be deleted.
29/13.00.05	18	4-447 4-467	For the ALWR's for PU disposition, at least two small ALWRs would have to be used, to carry out the same amount of Pu disposition as the large ALWR. For a large ALWR, it is not necessary to require a full core refueling, with a major reduction in fuel disposal.
30/13.04.21	19	A-54 A63 A67	The storage concept for 3-year transport of spent fuel is not consistent with DOE's Multi-Purpose Canister (5 yrs.). The spallation that occurs in the APT's beam stop, when it is accepting the full power beam for an unlimited time, could be significant. The spallation and activation products (including Mercury 194) have significant half-lives. The high power of the beam could result in orders of magnitude increase in waste products compared to existing accelerators. NRC should be requested to review the design and determine the classification of the waste. The PEIS should quantify all wastes generated in the APT.
31/13.00.35	20	A-99	The National Academy of Science was not requested to review tritium production. The NAS comment relative to cost savings was from a concern about quickly initiating the Pu mission and the assumption that savings of combining the missions would not be significant. That assumption is proving to be incorrect. Further reading of the NAS report, in fact, includes statements relative to the lack of maturity of the accelerator design that are more pertinent, but ignored by the preparers of the PEIS.

6/13.04.02 continued

In addition, consideration should be given to the fact that legally it will be the responsibility of the NRC to classify the radioactive wastes generated by the various components of the APT. The magnitude of the continuous power that the APT target will see is orders of magnitude greater than existing accelerators that operate on intermittent and lower beam power. The different targets under consideration will impact the APT power requirements and will result in different environmental impacts -- all of which should be considered. Concerns about waste products, e.g., Mercury - 194, should be properly addressed.

7/13.04.07

Shorter Schedule - The APT is touted to have a shorter construction schedule than a reactor, because it can be built in phases (i.e., the accelerator could operate at a reduced level at first). However, this is questionable until a design exists that is sufficiently mature that it can properly be evaluated. Furthermore, the environmental impacts during construction are a function of the APT design and until it is more well defined, this cannot be properly assessed. On the other hand, the large ALWR's are based on a strong experience base and through industry/DOE programs they have been designed to even further improve constructability. The ALWR has been treated very conservatively in the draft PEIS, despite its maturity, while the APT has been treated optimistically, despite its immaturity.

8/13.04.28

Capital Cost - While the PEIS does not consider costs, it implies that the APT design evaluation is based on assumptions that will lead DOE to an unrealistically low cost estimate for the APT -- especially compared against more mature technology, e.g., as the large ALWRs that have already been priced for overseas sales. Furthermore, it should be obvious to all concerned that an electricity producing ALWR will result in lower cost to the federal government than an electricity consuming accelerator.

9/18.04

Proliferation Resistance - DOE has repeatedly expressed concerns about sending the wrong signals to other nations by using excess weapons plutonium in a reactor or mixing tritium production with electricity generation. Although we believe that those concerns are easily addressed, it should be noted that even the APT's non-proliferation credentials may come under scrutiny. The APT would be able to produce weapons-usable fissile material from source material (e.g., natural uranium), if substituted for the tritium producing targets. Since accelerators and accelerator technology are not addressed under current law controlling export of such technology, then developing this technology could possibly pose a greater proliferation threat than using ALWRs, which have become a world wide standard and are a controlled, known technology.

The draft PEIS questions whether electricity should be generated by a tritium producing reactor. DOE should recall that the N reactor produced electricity, through a split ownership arrangement, even though it was producing a Special Nuclear Material. In the current situation, however, tritium is not even a Special Nuclear Material. It is not a proliferation threat. Therefore, there is no logic for questioning whether electricity should be generated.

10/14.01

Separate PEISs for Tritium Production and Plutonium Disposition -- DOE's refusal to consider combining the mission of Plutonium Disposition and the mission of Tritium Supply could result in decisions to proceed with two separate projects whose combined Environmental Impact would

10/14.01 continued

greatly exceed that of a combined mission, such as a Multi-Purpose Reactor. We believe that other documents being prepared for the Record of Decision should take this into account.

11/16.07

Lack of Cost Estimates --The draft PEIS does not provide any economic evaluations for the technologies considered. Without such information, it is not possible to weigh the relevance of any differences between the technologies. Economic evaluations should also consider combining plutonium disposition and tritium production and the impact of privatizing the facilities on costs to the government.

The draft PEIS seeks to preempt NRC licensing standards by placing significance upon accidents that might happen every 100,000,000 years. In section F.2, the PEIS discusses "high consequence accidents" for ALWRs. Although the nature of the assumed accident is not described, it is assumed to occur twice every 100,000,000 years. Why this particular accident frequency was chosen as significant is not explained in the draft PEIS. Other sections of the PEIS refer to the results (even in the executive summary), as if the results conveyed some significance -- when, in reality, they do not.

In establishing the safety goal for ALWRs, the NRC stated that "the overall mean frequency of a large release of radioactive materials to the environment from a reactor accident should be less than 1 in 1,000,000-per year of reactor operation." Subsequently, the Electric Power Research Institute (EPRI) proposed that ALWRs meet a conservative goal of keeping accident frequencies less than once every 1,000,000 years for any accidents that produce releases exceeding 25 rem whole body dose over 24 hours at 0.5 mile from the reactor (i.e., the site boundary).

In the NRC's Final Safety Evaluation Report for the System 80+ design, the NRC concluded that the probability of exceeding the 25 rem criterion was once every 20,000,000 years. This probability is about 20 times better than the EPRI goal. The NRC also noted that "the risk is very low compared to the current generation of operating plants". Furthermore, the total exposure over a 50 mile radius was estimated to be 17 person-rem over a 60 year plant life -- based upon population and weather data developed by EPRI to bound 80% of the reactor sites in the United States. Using the conversion factors proposed in the draft PEIS, such an exposure would result in no measurable latent fatalities.

Based upon these, and many other findings, the NRC issued a Final Design Approval of the System 80+ design in July 1994. There is no logic for the draft PEIS to attempt to preempt the NRC's safety findings by placing relevance upon extremely low probability accidents. Instead, the PEIS should simply incorporate the results of the NRC's approval of the design.

ABB

May 15, 1995

Mr. Stephen M. Sohinki, Director
Office of Reconfiguration
U.S. Department of Energy
DP-23
1000 Independence Ave., SW
Washington, DC 20585

Dear Mr. Sohinki,

ABB Combustion Engineering has reviewed the Draft Programmatic Environmental Impact Statement (PEIS) for Tritium Supply and Recycling and is pleased to have the opportunity to provide our comments. We offer our comments in a summary of the most significant shortcomings, followed by a table of more specific comments.

These comments should be considered as additional to the comments that I provided for the record at the April 5 DOE Workshop in the Forrestal Building. In some cases, there is overlap.

Please feel free to call me (203-285-5207) if you wish to discuss these comments or require any clarification.

Sincerely,

George A. Davis
Project Manager
System 80+ Deployment, U.S.

GAD:sb
Enclosure

ABB Combustion Engineering Nuclear Power

ABB Combustion Engineering Summary Comments

1/13.04.03

Design Maturity -- The PEIS compares mature designs (large ALWR's) with other technologies that decrease in maturity: small ALWR's, Heavy Water Reactors, Modular High Temperature Gas-Cooled Reactors, and the Accelerator for the Production of Tritium (APT). The immaturity of the APT design does not seem sufficient to allow DOE to properly assess the Environmental Impact with sufficent accuracy for the APT to be considered seriously along side the other more mature technologies. For example, the PEIS, Pg. 3-7 of Vol. 1, dismisses Los Alamos National Laboratory as a site for the APT because the "technical uncertainty regarding the feasibility and practicality" of using non-evaporative cooling towers for a continuous wave APT render this option unacceptable as a source for the nations only supply of tritium. The technical uncertainty conclusion should apply generally to the APT and should raise questions about relying upon the APT as the nation's only source for the supply of tritium. Until more is known about the APT, no balanced evaluation between it and the other technologies can be conducted. The APT has been promoted as safer than reactors, environmentally benign, available on a shorter schedule, with a lower capital cost and more proliferation resistant. We offer the following comments on these areas.

2/13.00.21
3/13.00.02
4/11.02.04

Safety and Licensing - Licensing of the APT by the NRC should be assumed as the basis for the PEIS and discussions held with NRC to establish a Licensing Design Basis for the APT. The large ALWR's which have completed NRC review have a solid basis for evaluation in the PEIS. While the APT's technology maturity status is decades behind the ALWR, some conclusions based on LWR experience with NRC can be drawn. The PEIS's treatment of accidents in ALWR's (assuming that all safety systems fail) versus accidents for the APT (here the PEIS assumes that key safety systems work) is a prime example. The non-conservative assumptions that the APT requires no containment, the APT's non-seismic design, the lack of environmental qualification for equipment, and the lack of fire protection are just a few examples of design features that will be challenged by NRC and result in a more expensive design for the APT.

5/13.00.02

Although the threat of intevenor delays in the licensing of a new nuclear plant is often cited as a schedular uncertainty, we should not lose site of the fact that even the accelerator has been delayed by intevenors (at Los Alamos). In the Los Alamos case, the research accelerator was much smaller than that proposed for APT.

6/13.04.02

Environmental Impact - The draft PEIS does not consider the environmental impacts of generating the 500 megawatts of electricity that will be required to run the accelerator at full power. Adding this much demand to any utility's grid, during the 2010 to 2050 operational period of the facility, will require the addition of new generating capacity. The environmental impact of constructing the plant and burning fossil fuels are significant and cannot be ignored -- even if the actual site location of the power source is not yet known. Likewise, the PEIS does not consider the environmental benefits of the electricity generated by the reactor options, in avoiding construction and operation of new fossil fueled facilities.

Specific comments

2/12.05 Figure 1.4-1, page 1-4. The Oak Ridge Reservation should be identified as "at Oak Ridge, TN" (not "near Oak Ridge, TN"), just as Los Alamos National Laboratory is described as "at Los Alamos, NM".

3/08.15 Figure 4.4.3.8-5, page 4-240. The socioeconomic analysis projects that under most of the alternatives that would site a new tritium facility on the Oak Ridge Reservation, increases in revenues to the City of Clinton and the Clinton schools would greatly exceed increases in required public expenditures, while for all other Oak Ridge area governments increased revenues would be about the same as increased expenditures. There is no apparent reason why Clinton would experience disproportionately beneficial impacts; for example, Clinton would not be among the government units receiving "use" tax payments from the tritium supply facility, which would be located in the Roane County portion of the City of Oak Ridge. This prediction therefore may be erroneous. Please check for errors in the economic model and its assumptions.

Sincerely,
For the Board

Ellen Smith
Chairperson

cc: Mayor and Members of City Council
Jeffrey Broughton, City Manager
Amy Fitzgerald, Local Oversight Committee

South-Central Nevada
Federal Complex Advisory Board
P.O. Box 153
Tonopah, Nevada 89049-0153

ESMERALDA COUNTY
LINCOLN COUNTY
NYE COUNTY

May 12, 1995

The Honorable Hazel R. O' Leary
Secretary of Energy
Department of Energy
1000 Independence Avenue, S.W.
Room 7a257
Washington, D.C. 20585-0001

RE: Selection of Nevada Test Site for Location of New Tritium Production Facility

Dear Secretary O'Leary:

1/13.06.01 The South-Central Nevada Federal Complex Advisory Board (SNFCAB) strongly endorses selection of the Nevada Test Site as the location for DOE's new tritium production facility. A decision to locate this important strategic facility at NTS would provide important benefits to the Nation, State of Nevada and counties which host or are adjacent to the site. Location of the tritium facility at NTS will help to ensure that the Nation maintains its nuclear weapons testing readiness capability. An NTS location would enable important weapons stockpile surveillance, weapons assembly, disassembly and modification activities to be performed without the need to transport tritium great distances between production, storage, and user sites. NTS is strategically located in proximity to key national laboratories and is characterized by its large size and extensive underutilized infrastructure. The tritium facility would provide critical employment, income and technical benefits to the State of Nevada and localities not otherwise attainable from waste management activities which are seemingly destined for NTS.

Your decision to locate DOE's new tritium production facility at NTS will make technical and fiscal sense for the United States. Such a decision would demonstrate to Nevadan's that DOE is committed to maintaining a quality presence in Nevada.

Sincerely,

Wade Barton
Chairman

cc: Mr. Steve Sokinki, Director
Office of Weapons Complex Reconfiguration

TSR–F–040
COMMENT LETTER

05/16/95 TUE 15:57 FAX 202 586 0487 +++ TETRA TECH 002

Ehrlich Edward H.

From: Wiedekamper Donald C.
To: Ehrlich Edward H.
Subject: PWR Tritium DRAFT Comments
Date: Monday, May 15, 1995 11:42AM

General Electric has reviewed the sections of the Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycle which apply to ALWRs and feed material conversion. Generally speaking the information in these sections is of relative high-level and most details have been omitted with the exception the licensing and accident areas. The following specific comments are provide on this draft PEIS:

1/13.00.44 1. Volume 1, Page 4-449, second column, first paragraph. The next to last sentence in this paragraph, "For a multipurpose reactor the fuel fabrication portion would also be required," applies to any reactor based disposition technology, not just the multipurpose reactor.

2/13.00.45 2. Volume 1, Page 4-488, first column, first paragraph. This paragraph implies that PWRs are " more readily adaptable" to tritium production than BWRs. This statement appears to reflect a bias or subjective decision that PWRs are better for tritium production than BWRs. This type of statement needs to be fully supported with a complete explanation of the specific statement or otherwise deleted. Furthermore, a comment which implies a "selection "decision on reactor types needs to consider a comparison of all relevant considerations for each reactor type, not simply adaptability. If adaptability is to be discussed, all other relevant considerations should be equally evaluated in depth. As an example, each of the following items need to be considered for each reactor type:

3/13.00.46
a. Performance - meeting mission goals, and impact on secondary goals
b. System /plant changes required for the mission
c. Operational Changes
d. Safety issues,accident behavior, and licenseability
e. Environmental impact
f. Schedule
g. Costs

2/13.00.45 continued There are many areas where the BWRs/ABWR will demonstrate superior performace as compared to PWRs for tritium production

4/13.03.03 The limited database available to evaluate Tritium production in advanced light water reactors that was created as a adjunct to the Pu disposition evaluations are not an indepth evaluation of these reactor types for the mission. They were done as GO-NO-GO evaluations. Certainly the one, or at best two, conceptual designs for Tritium production were not intended to optimize performance and cannot be used for quantitive comparisons. If an LWR option is endorsed in the Tritium PEIS, further detailed evaluations should be made to establish a specific LWR technology or design.

5/13.03.04 3. Volume 2, Page A-52, first column, fourth paragraph. The 1,100 MWe value for ABWRs should be 1,300 MWe.

6/14.01 4. The combination of tritium prodiction and plutonium disposition may result in some operational problems. For example, the IAEA will most likely want to oversee the Pu disposition activities but may possess to tritium production activities will not be open for inspection. Coupling of classified and unclassified activities (i.e. Pu removal from pits) may provide some operational difficulties.

P.2 [illegible]

TSR–F–041
COMMENT LETTER

CITY OF
OAK RIDGE

ENVIRONMENTAL QUALITY ADVISORY BOARD

POST OFFICE BOX 1 • OAK RIDGE, TENNESSEE 37831-0001

May 8, 1995

Stephen Sohinki
U.S. Department of Energy, DP-25
1000 Independence Ave. SW
Washington, DC 20585

Subject: Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling

Dear Mr. Sohinki:

The City of Oak Ridge Environmental Quality Advisory Board has reviewed the subject environmental impact statement and offers the following comments:

General comment

1/13.07.02 The EIS assumes that a new tritium facility on the Oak Ridge Reservation (ORR) would be located in an undeveloped portion of West Bear Creek Valley and West Chestnut Ridge. This site was identified as a candidate site for a consolidated weapons complex when DOE was considering alternatives for consolidating weapons activities and established a number of siting criteria for a consolidated weapons complex. The EIS provides no information on the process that led to selection of this particular site; in particular, it does not explain why a stand-alone tritium facility on the ORR would be located at this site. Assumed land area requirements for the consolidated weapons complex were much greater than they are for the tritium-supply facility, so one would expect that more ORR sites would be feasible as locations for a tritium-supply facility. Costs and environmental impacts could be substantially reduced if a new tritium facility were located in one of the developed portions of the ORR, where the new facility could be served by existing infrastructure (i.e., at the Y-12 Plant or the K-25 Site, which have experienced the elimination or reduction of past missions), instead of on a greenfield site. Reuse of an already developed site would be a means of avoiding several of the potential adverse impacts that are identified in the EIS. In the final EIS please consider the alternative of locating the tritium facility at one of the existing developed sites on the ORR. If there are reasons that it is deemed unreasonable to locate a tritium facility at one of these sites, please explain what they are.

PSR

PHYSICIANS FOR SOCIAL RESPONSIBILITY

Comments on the Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling

Tracy Ann McCaffery, Senior Research Analyst
Physicians for Social Responsibility

15 May 1995

Over the past few years, the American people have been asked twice before to address the U.S. Department of Energy (DOE) on this topic – reconfiguration of the nuclear weapons complex. Although the PEIS's name has changed and DOE states that it has abandoned the so-called "Complex 21," a new tritium source *is* a new weapons plant. A new tritium source is unnecessary to maintaining our "national security," is a threat to human health and the environment, is an unneeded expense during a time of fiscal restraint, and is a threat to future international arms agreements. This is a time when the U.S. government should be concentrating on cleaning up the nuclear sites across the country -- not building new environmental "sacrifice zones."

There are several reasons why building a new tritium source would be a significant mistake for the United States.

1/18.01 First, it sends exactly the wrong signals to the international community that the U.S. intends to actively pursue re-armament -- and not disarmament. Just last week at the close of the Non-Proliferation Treaty Extension Conference, the U.S. government once again committed itself to pursue a nuclear weapons-free world. It is hypocritical for the U.S. government to state that it intends to put an end to nuclear weapons while at the same time planning to produce tritium for a stockpile 20 years from now that is *exactly* the same size as its present stockpile. Inevitable further arms cuts in the U.S. stockpile would delay the need for a new tritium source. Pursuing further cuts would make the world a safer place, and greatly reduce the need for additional tritium.

2/20.01 Second, in this time of fiscal constraints, it is at once wasteful and unnecessary to spend what will amount to billions of dollars on an unneeded tritium source. While the DOE fights for its very existence and to maintain its Environmental Restoration and Waste Management budget, it is foolish for the DOE to consider building a new production facility. A new tritium source would itself cost billions to build, would produce additional waste and would create another environmental "sacrifice zone." It is ridiculous in the extreme to even consider such a scenario.

Tritium Draft PEIS Comments (continued)

There are several alternative methods of obtaining tritium in the unlikely event that the U.S. finds a need for additional tritium 20 years from now.

3/13.00.16 a) Purchase tritium from foreign sources. The DOE is not considering this option because it claims that this does not provide a "guaranteed" source. In fact, however, Canada -- which would be an excellent source of tritium – is part of the U.S. defense industrial base. Through previous agreements between the two countries, Canada is treated in much the same way as any U.S. supplier for other defense goods. For DOE to dismiss this option because of "uncertainties associated with obtaining tritium from foreign sources," certainly calls into question the reliance that the U.S. government has put on Canada as a production source for numerous other defense goods.

b) In any national security "emergency" tritium could be produced in any civilian reactor in the U.S. While this option should be avoided, the DOE has developed light water reactor target technology which could be used in an emergency to produce tritium. The DOE has dismissed this option because of a "long-standing policy of the United States that civilian nuclear facilities should not be utilized for military purposes" -- while this is certainly a good policy, a "national emergency" by definition would be a circumstance that would take precedence over this policy.

Either one of these options could be used if, in the unlikely event, the U.S. stockpile has no reductions in size in the next 20 years, and if there were a national "emergency" that required immediate production of tritium.

4/13.00.01 It is for the above reasons that I urge the DOE to pursue the "no action" alternative as described in the draft PEIS.

Physicians for Social Responsibility is a national organization of nearly 20,000 health professionals and supporters with more than 80 chapters working to prevent nuclear war and protect the environment and human health. PSR – formed in 1961 to end nuclear weapons testing – is the U.S. affiliate of International Physicians for the Prevention of Nuclear War, recipient of the 1985 Nobel Peace Prize.

5. Jonathan Medalia, "Nuclear Dilemmas: Nonproliferation Treaty, Comprehensive Test Ban, and Stockpile Stewardship," Congressional Research Service, December 1994, 94-1107F.

6. See "Redefining Stockpile Stewardship," Greg Mello for Tri-Valley CAREs, Livermore, CA.

7. Ibid.

8. The actual language of Article VI of the NPT is: "Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a Treaty on general and complete disarmament under strict and effective international control."

The JASONs paraphrase this as "The NWS [nuclear weapons states] will reduce their nuclear weapons stockpiles and will reduce, over time, the reliance of their national security policy on nuclear weapons, thereby decreasing the discriminatory nature of the non-proliferation regime" (p. 18). The legal commitment made by the U.S. and the other nuclear powers to nuclear disarmament is entirely discounted by the JASONs.

Aside from this, the JASONs' "interpretation" is illogical: If a NWS like the U.S. decreases its arsenal to only 1000 or even 100 nuclear weapons, as versus zero for a non-nuclear weapons state, this does virtually nothing to "decrease[s] the discriminatory nature of the non-proliferation regime."

9. Dorian Fort, personal communication.

10. It is not just the JASONs that recognize the importance of expanding the political constituency of the nuclear weapons program. In 1993, Dr. Immele of LANL waxed glowingly about the new corporate "sponsors" of the LANL weapons program in his "State of the Nuclear Weapons Program" address in December, available in video from LANL. Numerous other examples could be provided.

11. Marylia Kelley, personal communication. In the case of the NIF, and the inertial confinement fusion (ICF) program in particular, the Arms Control and Disarmament Agency (ACDA) recognized these direct proliferation dangers as early as 1980 in their FY 1981 Arms Control Impact Statements (written for the committees on Foreign Affairs and Foreign Relations of both houses of Congress). As they put it then, "If an advanced non-nuclear weapon state with an ICF research program undertook a nuclear weapon program, it might subsequently be able to move more quickly to develop boosted fission and thermonuclear weapons than would otherwise be the case."

The subject of direct proliferation impacts is discussed more fully in Mello, op. cit.

12. For examples, see William E. Burrows and Robert Windrem, Critical Mass: The Dangerous Race for Superweapons in a Proliferating World, Simon and Schuster, NY, 1994.

13. Ray Kidder, "Maintaining the U.S. Stockpile of Nuclear Weapons During a Low-Threshold or Comprehensive Test Ban," LLNL, 1987, UCRL-53820, p. 23.

14. Mello, op. cit.

15 Kidder, op. cit.

16. Dr. Dan Kerlinsky, personal communication.

17. These men all speak with great authority on this issue. Nobel Laureate Hans Bethe directed the Theoretical Division at Los Alamos during the war and has consulted at LANL up to the present day; Carson Mark was his successor and directed that Division for 26 years; Norris Bradbury was Oppenheimer's successor and directed Los Alamos for 25 years; Richard Garwin has been a consultant to Los Alamos since 1950 and is highly regarded for his analysis of a range of defense issues; and Andrei Sakharov, preeminent among Soviet weapons designers, was responsible for the independent development of the Soviet thermonuclear bomb.

18. *Hohlraum* is a German word which means to physicists what "black body" does in English: an idealized non-reflective cavity which radiant energy is accordance with its temperature. The interior of a nuclear weapon, and the hollow target cylinder at NIF, resemble and are called hohlraums.

19. It is best not to say who, because even so senior a scientist as Dr. Steven Younger at LANL has already been called on the carpet by Assistant Secretary Reis for his true statement that NIF has nothing to do with safety of nuclear weapons, made at the September 8, 1994 DOE NIF workshop.

20. The original design specifications of Building PF-4 of TA-55 at LANL were reported by John Fleck of the Albuquerque Journal on December 8, 1993. In 1978, PF-4 had a capacity of 100 kg Pu per month for casting and machining, or about 20 weapons/month. Since then, occupational radiation exposure limits have decreased from 5 rads/yr to 2 rads/yr, and PF-4 has been reconfigured, both of which decrease this capacity, according to LANL.

A presentation by Larry Woodruff of LLNL to the Galvin Panel on August 8, 1994 entitled "Downsizing the Capacity of the Nuclear Weapons Complex" shows a capacity for making 150 pits/yr in the downsized complex, i.e. at LANL. While LLNL now has the capacity make pits, the presentation to the Galvin Panel, along with interviews with LLNL personnel by Dr. Kerlinsky of that Panel, make it clear that LLNL anticipates transferring its pit manufacturing technology to LANL.

The LANL FY1995-2000 Institutional Plan says on p. 51 that LANL's Pit Rebuild Program will be capable of building pits for W88 warheads "by FY1996."

21. The statement of Dr. Harold Smith, Assistant Secretary of Defense for Atomic Energy, to the House Appropriations Subcommittee on Energy and Water Development, March 15, 1994 contains the following.

> The Nuclear Weapons Stockpile Plan, which outlines specific requirements for the nuclear weapons program...requires an active nuclear stockpile that supports the START I limits through 1999 and then transition to START II in subsequent years. ...[The Plan requires the U.S.] to maintain the capability to reactivate weapons from the inactive stockpile if necessary, to maintain a policy that provides an assured supply of tritium...
>
> In the absence of a new source, in [deleted] the U.S. may not have sufficient tritium to support the nuclear weapons stockpile and required reserves consistent with START I commitments...The current goal is to make a decision on a new source for tritium in FY95 with initial funding for the development of that source beginning in FY96." (pp. 737 and 741, Vol. 6, Energy and Water Development Appropriations for 1995, emphasis added)

In his oral remarks that day, Dr. Smith emphasized that the U.S. must be able "to secure to START I in the 21st century" (Ibid, p. 415). This cannot be done without a tritium supply consistent with a START I arsenal.

Dr. Victor Reis, Assistant Secretary of Energy for Defense Programs, shed additional light on the subject during that same hearing in response to a question:

> If one assumes...that a new [tritium] facility is to be built, then based on the current stockpile plan and the conservative view that a new tritium production source could take as long as 15 years to produce new tritium, a funding decision would be necessary in FY1996. That would allow the facility to be in production 3 years before strategic reserves of tritium are exhausted. (Ibid, p. 458)

Congressman Myers was hearing different dates from DOE and DOD regarding the acquisition of a new source of tritium, and asked for clarification. Reis gave an enigmatic reply, then Smith said, "There is plenty of discussion going on between the two Departments, between Dr. Reis and myself. The driver here is the assumption on whether or not we want to have the ability to maintain or restore to levels consistent with START I." (Ibid, pp. 423-424, emphasis added)

It appears that there is adequate tritium to support a START I arsenal until 1996+15 years for construction +3 years, i.e. until 2014. The "START II arsenal" appears to include the capacity to bring enough reserve weapons back into the active arsenal to reconstitute a START I force level.

The JASONs' Chapter 10: Special Nuclear Materials (SNM) and Processing

This chapter does not share with the preceding and succeeding ones the assumption that new weapon designs are inevitable and desired; in fact, it assumes quite the contrary.

> ...the primary—if not the sole—nuclear weapons manufacturing capacity that must be provided for in an era of no nuclear testing is the remanufacture of copies of existing (tested) stockpile weapons...the ultimate goal should be to retain the capability of remanufacturing SNM components that are as identical as possible to those of the original manufacturing process and not to "improve" those components. This is especially important for pits...(p. 81)

If nuclear weapons must be manufactured at all, this is the best way to do it.

The JASONs point out that it is the finished pit that must be the same as the proof-tested model, not every manufacturing detail or process along the way. And they suggest that a production capacity of "ten or so" pits per year is adequate for the present time (p. 85).

This is a scale of activity consistent with practical maintenance of an arsenal. While it does not imply rapid drawdown of that arsenal, as we might wish, this approach is compatible with such drawdown. It is highly unlikely that a smaller scale of effort would meet current political realities. In any case, Los Alamos already has a nascent capacity to manufacture pits at least ten times this great.[20]

The JASONs do not take up the issue of how best to make tritium. They correctly point out that a number of options exist for procuring this material, and that any need for it may be postponed by further stockpile reductions. They appear to err, however, in saying that

> Dismantlement of U.S. nuclear weapons under START II and correspondingly large reductions in tactical nuclear weapons will result in a recovered amount of tritium adequate to supply the needs of the remaining operational stockpile until close to the end of the first decade of the twenty-first century. (p. 83)

The best information available to us strongly suggests that current supplies of tritium are adequate to maintain the larger START I, not just the START II, arsenal, until approximately 2014.[21]

The JASONs conclude this chapter by saying that

> Having an open research program on the physics and metallurgy of uranium and plutonium is highly undesirable from the perspective of nuclear proliferation. Consequently, we see the SNM manufacturing component of the stewardship program as a narrowly defined, sharply focused engineering and manufacturing curatorship program. (p. 85)

There is absolutely no reason that this excellent, common-sense approach cannot be applied to the other elements of the stewardship program as well, thus eliminating the "need" for expensive new SBSS facilities with their attendant proliferation impacts.

In fact, if this approach is to stand at all, it logically must be applied to the stewardship program as a whole. For what is the point of designing improvements in weapons if it is decided in advance not to make them? And making them would be a bad idea, for the sound reasons the JASONs articulate in this chapter. So not just the assumptions, but the conclusions of this chapter—with which we find little fault—are quite inconsistent with the rest of the report.

The JASONs' Chapter 11: Advanced Computing for Stewardship

Aside from the dangerous assumptions incorporated into this chapter on p. 89 (quoted on page 4 above) and what may be applied from our other comments to the question of the purpose and need for weapons computing advancements, we offer few additional comments.

Obviously, the proliferation dangers of weapons codes that have been brought up to date, documented properly, and translated to run on inexpensive and universally-available computers are increased in the event of any security breach. This is a specific case of a general rule: the more weapons activities that are going on, and the more open these activities are, the greater the likelihood that somebody will steal or be given something important.

Concluding Remarks

The JASONs are clearly enamored with science, and they clearly want to see the weapons labs fully funded to do work they consider interesting. Their approach to the issues surrounding stockpile stewardship is too narrow and too vague, however, to be of much use in evaluating even the technical questions, let alone the policy and nonproliferation questions. It is hoped that the DOE will seek further clarification of these issues before continuing its marketing of science-based stockpile stewardship, based as it is upon specious assumptions and the questionable goals of keeping weapons scientists busy and producing new weapon designs. These activities are costly and dangerous to this country and others.

Endnotes

1. Personal communication with Dr. Victor Reis, October 1994.

2. This history is from Gregg Herken, Counsels of War, expanded edition, Oxford University Press, NY, 1987. Quote is from p. 211.

3. Christopher Paine of the Natural Resources Defense Council made this point in a conversation with the present author.

4. This exchange occurred at the DOE workshop on NIF, Washington DC, September 8, 1994; Joe Cirincione personal communication.

fact that nuclear weapons "operate" only with unimaginable horror is not a noticeably important factor in the JASONs' thinking about NIF.

Their discussion of NIF's importance as a "*proof-of-principle*" experiment appears overblown. Ignition of deuterium-tritium pellets has already been achieved in experiments at the Nevada Test Site. The NIF would not so much demonstrate the principle as demonstrate—what? That inertial confinement fusion (ICF) is feasible? No, not this either. Perhaps this: that ICF can be funded, papers can be published in the subject, and careers can be pursued by real people with real ambitions. ICF is, by all accounts, a remote and unlikely source of energy, one that has already been superseded by proven renewable sources that do not share its enormous costs, its environmental and social externalities, its proliferation problems, or its uncertainties.

The attainment of ignition is not the major problem in developing fusion energy, in any case. It is the engineering and materials problems in any practical ICF system that are more likely to be insurmountable at anywhere near a realistic life-cycle cost per unit energy produced.

While the JASONs downplay the uncertainty of ignition, some scientists at both LLNL and LANL do not.[9] The margin of uncertainty in the minimum energy needed to overcome instability and other difficulties may be significantly larger than the 1.8 megajoules NIF will deliver. Therefore, the statement on p. 41 that "...the attainment of ignition in NIF will demonstrate..." seems too confident and a little premature. It betrays the lack of objectivity that concerns us throughout this report.

There is no question that NIF could provide interesting experiments in several fields of physics. But a closer look at the JASONs' zeal for creating a user community for NIF (pp. 43-47) goes far beyond science to reveal the JASONs as a special interest lobby, calling for an active sales effort for the NIF project. They wrap up this four-page discussion by saying that:

> ...the growth of this nascent enterprise [user communities] needs to be further encouraged by way of the vigorous dissemination of information about the capabilities and accomplishments of the ICF program and about the scope of activities to be undertaken at the NIF....If scientific goals are to be a significant component in the justification of the construction of the NIF (as we strongly believe they should be), then the ICF community bears a special responsibility in fostering an "out-reach" program....Succinctly stated, the NIF represents a credible and powerful opportunity to strengthen otherwise disjoint efforts in the weapons, the ICF, and the university communities. (p. 47)

Why are the JASONs so interested in promoting NIF? Why are they, here and elsewhere, so preoccupied with the "credibility" of cross-linking the nuclear weapons community with ICF and university science? Why is it necessary to encourage a "vigorous" program of disseminating information about NIF—can't scientists decide for themselves whether it can help them? Why is it so desirable to recruit the ICF "community" to support NIF? The simple truth to which these questions point is that, when it comes to NIF, the JASONs themselves view their role as promotional, not objective.

The weapons applications of NIF, which the JASONs leave to last, are not convincing. There is no need to quantify the "effects of low tritium concentration" (p. 49) and no need to study cracked radiation cases (p. 50). Replacing the latter is cheaper than studying whether or not to replace them, and retiring them is the safest and cheapest solution of all.

The defects of the JASON analysis of the nonproliferation impacts of NIF have been discussed above. It is important to make one addition here. Contrary to what the JASONs say, "balancing non-proliferation objectives of the United States with responsible stewardship under a[n] SBSS program" (p. 50) is not the problem. Given that weapon safety and reliability "problems" are not difficult to solve and the requirement for an effective deterrent rather easy to meet, responsible stewardship can only be defined as that form of stewardship which best supports nonproliferation goals. Stewardship should be a subset of nonproliferation efforts.

The JASONs' Chapter 8: LANSCE, Stockpile Surveillance, and Materials Science

The JASONs assume that weapons will remain in the stockpile far beyond their lifetime, and therefore will require intensive study of issues relating to aging. It is not clear why this need be the case.

This chapter, like most of the others, does not really begin with the needs of the stockpile surveillance program but with what a particular facility—the Los Alamos Neutron Science Center (LANSCE)—might be able to do for the program. Again, the approach is one of a major facility looking for missions to justify it, and several possibilities are suggested. The JASONs are lukewarm, however, about these possibilities and make any endorsement of LANSCE contingent upon several "ifs."

The claim that a 1 mm resolution in neutron radiography would "perhaps" be enough to see cracks, etc. in pits seems optimistic (p. 61). A 1-mm crack is very large. It would be better to begin with, or at least mention, the needs of the program rather than the capabilities of the projects already being promoted.

The JASONs' Chapter 9: Pulsed Power

There is no real need for any of these facilities for stewardship of the existing stockpile, and the JASONs have not provided any justification for them. Further weapons effects testing, beyond what is already known, is a relic of warfighting strategies and should be dropped from the stockpile stewardship program. Likewise, the (further) study of cracks in implosion need not be of particular interest. If one wants reliable weapons of mass destruction, replace the cracked ones. Better still, help meet our treaty obligations and retire them. And why not? The START II strategic arsenal of 3500 weapons is enough to create a 5-psi overpressure spike—a lethal amount—over most of the area of all the cities over 500,000 people in the world. To deter one or two countries requires a very tiny number of weapons.

temperatures and pressures at or approaching those of a nuclear explosion, data which would definitely be useful in the design of weapons.[11]

International scientific cooperation is in general a very good thing. But scientists at the weapons labs of the various countries have more in common with each other than they do with their respective governments, as Dr. Hecker at Los Alamos National Laboratory (LANL) once remarked about Russia. The U.S. weapons labs have already been the source of a great deal of knowledge for foreign weapons programs.[12] Why open the door wider?

The JASONs' Chapter 5: Stewardship Program Elements

To provide a justification for enhanced SBSS capabilities, the JASONs refer on p. 24 to the "limited" number of cases where nuclear testing was needed to remedy or validate the remedies to stockpile problems of the past. These cases–fifteen in number–are extensively discussed by senior Livermore weapons scientist Ray Kidder in his 1987 study of weapon reliability under a test ban, and his conclusions–(1) that these resulted from rushing inadequately tested designs into the stockpile, and (2) that these problems are all lessons learned, i.e. of historical, but not predictive, importance–still stand.[13] As discussed elsewhere at length, there are no known safety or reliability problems in the U.S. arsenal.[14]

Certainly we need to retain, at least for now, some nuclear weapons scientists, as the JASONs point out on p. 24. It is not clear that we need to retain the thousands of scientists, engineers, and technicians now working in this program. If the intent is merely to retain our existing knowledge and expertise about nuclear weapons, there are cheaper and less provocative ways to do it than SBSS, namely by emphasizing retention of unique knowledge in archives and in a relatively few staff members. The emphasis should be on uniqueness, not quantity.

The JASONs' Chapter 6: Hydrotesting

The JASONs' treatment of hydrotesting and the proposed Dual-Axis Radiographic Hydrotest (DARHT) facility at LANL provides further examples of their lack of careful analysis. The JASONs believe that this facility will provide "capabilities of importance" (p. 4) to the SBSS program. In fact, they appear to offer unqualified support for all the hydrotest upgrades planned for this century, drawing the line at the Advanced Hydrotest Facility planned for the out years. But nowhere do they say why these capabilities are important.

In Kidder's 1987 paper we find the following.

> During the past decade [1977-1986], new boosted primaries have been designed and developed by the weapons laboratories...performed satisfactorily the very first time they were tested, the observed yield in no case falling short of that expected by more than...(See Tables H1 and H2 and Fig. H1) The one new primary that failed was of a more complex, less predictable design than the others. This primary was subsequently redesigned, tested, and failed again. None of the primaries in the existing stockpile employ...

> This experience demonstrates that the ability of the weapons labs to predict the performance of newly designed, as yet untested, boosted primaries of the kind currently in stockpile is indeed impressive–there were no significant surprises. This could hardly have been the case had these primaries been sensitive to differences that inevitably exist between the weapon configuration calculated and the weapon tested.[15]

This "impressive" capability existed between seven and seventeen years ago, in the design of new primaries. It is not clear why it is not enough to simply maintain existing primaries today.

Kidder's last point, which speaks to the insensitivity of primary yield to minor variations in manufacture, was corroborated by a manager (name withheld) at Los Alamos, who told Dr. Korlinsky of the Galvin Panel that deliberately "off-spec" pit(s) had been manufactured at Los Alamos and tested successfully at the Nevada Test Site.[16]

Then why are all these new facilities needed? The JASONs answer this question on p. 27.

> Such information [from hydrotests integrated with code development] will lead to greater confidence in our understanding of weapons and, perhaps ultimately, to a willingness to make relatively simple changes in primary design without underground tests. (emphasis added)

Once again, it is not simple maintenance of a deterrent through remanufacture of existing weapons that is driving the "acknowledged need" (p. 28) for increased radiography capability, but the desire to design and certify new weapons in the absence of nuclear tests. It is the "design community" (p. 29) that has this "need," not the stockpile surveillance program, and certainly not the nation. The surveillance program has never depended upon hydrotesting, let alone advanced hydrotesting, to do its job.

Overall, it is far from "clear" that "improved hydrotesting is crucial to continued confidence in the safety and reliability of nuclear primaries" (p. 32). As far as reliability is concerned, this statement is contradicted by the data collected and presented by Kidder. And in Kidder's paper, the JASON opinion is contradicted by that of Hans Bethe, Carson Mark, Norris Bradbury, Richard Garwin, and Andrei Sakharov, all of whom felt that simple remanufacturing–without advanced new hydrotesting facilities–was completely feasible.[17]

The JASONs' Chapter 7: The National Ignition Facility

The JASONs find the NIF "exciting" (p. 37). They are crazy about it. And crazy is hardly too strong a word, for they quickly gush: "Nuclear weapons operate under conditions...of great interest to astrophysics." Yes, no doubt this is true, but it is hardly the central point, and it is not reassuring to hear it put quite that way. Avoiding the "operation" of nuclear weapons is what this report is, or should be, about. In their passion for hotter hohlraums,[18] they neglect the human. It is not the JASONs' chilling objectivity which is distressing here, but their chilling lack of objectivity. Their enthusiasm is about physics, not nuclear weapons policy. And the

weapons development. This was thoroughly discussed at the September 8 workshop mentioned above, with Dr. Drell in attendance. It is worth reviewing the whole issue briefly from first principles.

The basic goal of nonproliferation, as it is perceived officially in the United States, is one of preventing other countries from acquiring nuclear materials and, especially, nuclear weapons. Most countries, of course, have no interest in taking on the dangers, cost, and opprobrium of nuclear weapons. But it is not the Danish bomb that is of concern. To effectively prevent proliferation in every case, even the difficult ones, a variety of tools are required: international treaties, national laws, bi- and multi-lateral agreements, and unwritten norms--all of which must, to be effective, carry with them an implicit or explicit possibility of political, economic, criminal, or military sanctions, directed against countries, companies, or individuals as appropriate. Positive rewards for compliance with nonproliferation norms also can be and have been used.

These potential sanctions, in their variety and comprehensiveness, are the real deterrent to proliferation in the most important cases. They must be credible to work. They are not likely to be credible if they are not very broadly based among nations, especially among the nuclear powers. And surely it is difficult to get very broad-based cooperation in enforcing tough nonproliferation sanctions if we ourselves violate the norms we would enforce. We cannot get treaties implemented by others that we do not follow or intend to follow. Nor can we easily enforce, except at great and often prohibitive cost, provisions of treaties--like the NPT--that we ourselves do not honor.

Let's get real: we will not stop nuclear proliferation unless we have tough laws and effective sanctions, actively supported by nearly every nation involved. This requirement is incompatible with our ongoing violation of the NPT, and with the maintenance and "improvement" of our own large nuclear arsenal, especially as this arsenal is accompanied by a declaratory policy of possible first use and configured to make this threat real.

The conflict between U.S. nuclear policy, including SBSS, and U.S. interests in nonproliferation is therefore much more fundamental than the perception that we might develop more advanced nuclear weapons. This perception would, of course, simply make our nonproliferation and credibility problems even worse, while advanced weapons and weapons science would provide no deterrent against a proliferant threat.

The JASONs faulty and superficial analysis of the nonproliferation problem leads them to a questionable recommendation for relieving the well-deserved "suspicions" of the non-nuclear weapons states. The JASON approach: declassify most of the SBSS program.

This strategy attempts to remove the potential complaints of the non-nuclear weapons states--which could, after all, have negative ramifications for SBSS funding--by simply inviting them to the weapons technology table. Any problems concerning proliferation of technology out of the SBSS program would be solved, in effect, by a redefinition of proliferation. Proliferation done officially wouldn't count anymore.

History provides a warning: in every case since 1950, programs to build fusion bombs have been conceived, hidden, and matured within the womb of fusion energy programs. If we follow the JASONs' advice, we may have fusion weapons being developed under the cover of fusion energy programs--using data, codes, and techniques developed and disseminated in and by the U.S.

Aside from the rationale the JASONs provide, another political motivation for the declassification they propose is that it will to create a broader user community--and hence a broader constituency--for the stewardship program and its funding. This is particularly the case for NIF.[10]

Of particular concern is the possible declassification of all but "critical" parts of the weapons codes (p. 21) in order to allay the "suspicions" of the non-nuclear weapons states. Even if these suspicions did comprehend the entire nonproliferation impact of the SBSS program, which they don't, why would the declassification of technical arcana allay anything? More to the point would be the declassification of policy and planning documents, such as the nuclear stockpile memorandum.

Looking at the problem of nonproliferation impacts of the U.S. nuclear weapons program as a whole, non-nuclear states' concerns--which are a matter of public record, not merely a possibility--could be better addressed by:

- a stronger and more successful effort toward a CTB;
- a change in U.S. declaratory policy on first use;
- the elimination of tactical weapons;
- bilateral reductions in strategic forces below START II;
- a ban on weapons-usable fissile material production;
- a limit on stockpile stewardship to the minimum that is actually needed; and
- opening U.S. weapons facilities to credible domestic and international inspectors, perhaps from Canada, Australia, or other appropriate non-nuclear-weapon states.

To succeed in its nonproliferation goals in the long run, the U.S. needs to accept the same level of transparency that it demands of other nations. Publishing major portions of U.S. nuclear weapons codes has not exactly been on the top of anybody's non-proliferation wish-list, however.

The JASONs assert that most new proliferators could derive no immediate benefit from these codes. Even if this is true, what about China, or Israel, or Japan--or India or Pakistan, for that matter? Wouldn't the knowledge that scientists from these countries get by using the NIF and its related computer codes train them to do secondary physics, just as U.S. scientists are trained? Or perhaps they could take the now-unclassified codes and modify them for weapons analysis, saving themselves person-years of work on the way to deliverable boosted fission or thermonuclear bombs. When the JASON declassification proposal was brought up in the context of NIF at DOE's September 8, 1994 NIF workshop, a senior DOE classification officer rose to vigorously contest the appropriateness of declassifying information from experiments at

Finally, it is by no means clear that an "improved understanding of warheads" is necessary or desirable for U.S. or global security purposes. Knowledge is not free of costs, and investments in the U.S. nuclear weapons program will have a variety of serious costs: to the federal fisc, to the effectiveness of the world's nonproliferation regime, to the environment, and to every other kind of scientific pursuit. It is not knowledge, but wisdom, that is in short supply in the nuclear weapons business. The JASONs have not improved this situation.

The JASONs' Chapter 2: Basic Assumptions

Much has been made, in the JASON report and elsewhere, of President Clinton's July 3, 1993 statement that "we will explore other means of maintaining our confidence in the safety, the reliability and the performance of our own weapons" (emphasis added). Note that the President said "explore;" he did not say "we will establish, for the indefinite future, a Cold War level of funding for science-based stockpile stewardship"--which is how his statement is being taken by the JASONs and others in the nuclear weapons community. The next sentence in the President's speech has been ignored, by both DOE and the JASONs:

> We will also refocus much of the talent and resources of our nation's nuclear labs on new technologies to curb the spread of nuclear weapons and verify arms control treaties.

Unfortunately, there has been no such refocus. The attitude at the weapons labs is instead typified by a conversation recently overheard by a UNM professor between lab managers on an airplane flight in which the two gentlemen assured one another that they would "outlast" the Clinton administration's attempted refocusing.[9]

The JASONs assume that old, more "robust," stockpile designs could be introduced into the stockpile, apparently with modifications to allow more modern "engineering and manufacturing practices" (p. 12). It is far from clear that this would be acceptable to the military. The assumption that new or redesigned warheads should and will be introduced and built is one that pushes the cost of stockpile stewardship very high, both in dollars and probably also in reliability. It is entirely unnecessary.

Missing from this chapter and this report are any quantitative assumptions about the arsenal or any descriptions of the warheads it will contain. The JASONs say the arsenal will continue to decrease in number and variety--but how? Failure to specify their assumptions about the arsenal more closely makes the reader suspect that the SBSS program they review is independent of the stockpile and its real-world requirements and problems.

Since the criteria by which the JASONs evaluated the SBSS program (their Chapter 3) have been strongly criticized for their narrowness already, we turn now to nonproliferation concerns.

The JASONs' Chapter 4: Nonproliferation

The JASONs understand that

> Ultimately, non-proliferation can only be successful if the NNWS [non-nuclear weapons states] are persuaded that their national security is better served without nuclear weapons than by possessing them (p. 19).

How can all these countries possibly be persuaded of this when the nuclear weapons states (NWSs) assert just the opposite for themselves--that nuclear weapons are central to their national security? These NWSs are of course not just armed with nuclear weapons, but also with qualitatively and quantitatively superior conventional weapons as well. Yet still they assert that nuclear weapons are indispensable. Nowhere do the JASONs face or even acknowledge the fundamental contradiction between their statement above and U.S. plans, not just to maintain its nuclear arsenal indefinitely, but to continually "improve" it, an effort the JASONs acknowledge, approve, and seek to facilitate.

The JASONs, in their rush to bless DOE's plans, have fundamentally misread the politics of nonproliferation. After squirming their way past the clear language of the NPT and failing to address the fundamental contradiction of U.S. nonproliferation policy, they limit their concerns about the proliferation impact of SBSS to basically just one:

> One worrisome aspect of the SBSS program is that it may be perceived by other nations as part of an attempt by the U.S. to continue the development of ever more sophisticated nuclear weapons. (p. 19)

But this is hardly the entirety, let alone the root, of the problem. They compound their error with arrogance in the next sentence:

> This perception is particularly likely to be held by countries that are not very advanced technologically since they are less able to appreciate the limits on advanced weapons design that a lack of testing enforces.

Yet on the same page, the JASONs confirm this "perception":

> While the potential for future developments cannot be excluded, the SBSS activities should not be interpretable as laying the basis for the development of newer generations of nuclear weapons...(emphasis added)

It appears that the only policy consistent with all these confused statements is a policy of deception, which is the height of folly. Such deception would have to be aimed at the American people as well as other nations, and cannot succeed even temporarily. Clandestine vertical proliferation would be implicitly or explicitly used as an excuse by some horizontal proliferant some day, and would, by its very nature, threaten the integrity of the nonproliferation regime, which requires clarity and transparency to work. Such a policy would be very costly to U.S. national security.

The impacts of the SBSS program on nonproliferation efforts are certainly not confined to problems caused by the "perception" or "interpretation" that the U.S is engaged in further

certify new nuclear weapons. These states may view a large stewardship program as preparing to pursue the nuclear arms race by other means, circumventing the spirit of a CTB.[3] (emphasis in original)

This information is widely available. We must assume that the JASONs simply weren't interested in it or didn't take the time to obtain it. Unfortunately, the JASON study is replete with unsupported judgements such as the ones Dr. Drell described to Mr. Ciriacione.

Unlike the JASONs, we cannot hope to convince by mere prestige. Nor do we have their access to classified information–information which is always carefully selected as it is provided to them. Our comments therefore seek to point out inconsistencies and to draw the reader's attention to facts and testimony the JASONs may have overlooked. We urge the reader to look beyond the knowledge of physics that went into the JASONs' report and to face the policy choices to be made regarding the future of the nuclear weapons program.

Overall Comments

"Compensation" (note the pun) for the ending of underground nuclear testing is understood by the JASONs to be the "basic principle" of the SBSS plan, to be achieved by "improved diagnostics and computational resources that will strengthen the science-based understanding of the behavior of nuclear weapons" (p. 1). Yet when the subject of nonproliferation is broached a few pages later, the JASONs say that the SBSS program

must avoid the appearance that, while the U.S. is giving up nuclear testing, it is as compensation introducing so many improvements in instruments and calculational ability that the net effect will be an enhancement of our advanced weapons design capabilities." (p. 17, emphasis in original)

It is not clear how the SBSS program can "compensate" on p. 1 and "avoid the appearance...[of] compensation" on p. 17. This contradiction is a fundamental theme underlying much of the JASON report and indeed much of the SBSS program. It reflects poorly on the thoughtfulness with which the JASONs approached their subject. This quote makes clear, as we will see again below, that the JASONs think any nuclear weapons research and development (R&D) effort–short of one giving the appearance of designing advanced new weapons–does not conflict with nonproliferation efforts.

While the JASONs do not want the SBSS program to "be perceived as an attempt by the U.S. to advance our own nuclear weapons with new designs for new missions" (p. 3, item 2, emphasis added), we find later in the report that

Over time it may become desirable to introduce design changes in some components of the present stockpile...It will require considerable computational analyses of both primaries and secondaries in order to develop even a limited capability for redesign of warheads without proof-testing. (pp. 89-90)

We have already seen elsewhere[4] how DOE, while publicly abjuring new weapons, is actually seeking to design and fabricate a new so-called "robust" warhead and has design teams working on several other concepts as well, some of which do indeed involve new designs and new missions.

So the "threefold" purpose of SBSS (p. 2) must really be expanded to "fourfold," with the additional purpose being to provide, to the greatest degree that is consistent with a CTB, the capability to certify new weapons. The Pentagon made this requirement crystal clear in its September 22, 1994 briefing on the Nuclear Posture Review, which included the following viewgraph language:

DOD requirements to DOE:
...
–Demonstrate capability to refabricate and certify weapon types in enduring stockpile
–Maintain capability to design, fabricate, and certify new warheads
... (emphasis added)

This language is echoed by the JASONs on p. 12, where they assume that "The US nuclear infrastructure under the SBSS will retain a capability to design and build new weapons, which could be deployed should the need arise..."

Quite apart from this contradiction, it is not clear why it is necessary to "compensate" for the termination of underground testing, since: a) the reliability and especially b) the safety of existing nuclear weapons do not require such compensation, as is discussed elsewhere in depth.[5] Improved diagnostics and computational resources are certainly not necessary to maintain reliability or safety; maintenance of a small core of technical staff, with continuing investments in surveillance and a small remanufacturing capability would be effective for these ends. The purpose of a CTB is to end the testing of new weapons, not merely shift its location.

The JASONs regard a "strong" SBSS program as an "essential component for the U.S. to maintain confidence in the performance of a safe and reliable nuclear deterrent under a comprehensive test ban" (p. 3). Nowhere do they, however, specify just how "strong" the program should be, nor do they ever clearly state why particular SBSS elements are actually needed. The entire question of need is simply dismissed with a wave of the hand and an invocation of the mantra of safety and reliability.

The JASONs assume that the same aging warheads will need to remain in the stockpile for "at least several decades" (p. 1). It is not at all clear why this need be the case. Warheads can simply be rebuilt whenever their reliability falls below some desired level. Furthermore, the United States has rightly committed to eliminating all its nuclear warheads in Article VI of the Non-Proliferation Treat (NPT). It is hard to understand why the JASONs see no conflict between keeping a nuclear stockpile for "at least several decades" and the clear language of the NPT. In this connection, note that their periphrasis of that Article on p. 18 bears shockingly little resemblance to the actual treaty language.[6]

Introduction

In November of 1994, 17 members of the JASON group published their study of the Department of Energy's (DOE's) science-based stockpile stewardship (SBSS) program, which is in its first year of implementation. Even in its draft form, DOE was very pleased with the results of the study and was, in October of 1994, looking forward to reprinting it for wide distribution.[1] The JASON study is likely to be influential in the policy debates of 1995 and beyond and so deserves careful scrutiny.

The JASONs are an elite group of academic defense advisors periodically convened to study selected scientific issues for the military. Their origins lie in the secret studies sponsored by the Pentagon in the late 1940s and early 1950s, most often coordinated by the Massachusetts Institute of Technology (MIT). The first of these was Project Lexington in 1948, which started the ridiculous nuclear-powered bomber program. This was followed by Project Charles, which studied civil defense against nuclear war, and then by many others. By 1966, the JASONs had become a permanent institution, enthusiastically advising McNamara regarding the promise of the "electronic battlefield" in Vietnam, an effort later described by one JASON as "very naive–extraordinarily naive."[2]

It is not clear from whence the name of the group was taken; one long-time JASON recently joked that it comes from the legend of Jason and the golden fleece. The JASON office is at the MITRE corporation, reflecting its MIT roots.

The point of this brief history is that even bright and well-meaning groups like the JASONs are often wrong, sometimes very wrong. They are especially vulnerable if the questions posed to them are too narrow or if those questions imply a narrow range of answers, all of which are yes. Such is the case in the present study.

Quoting from the abstract,

> The DOE asked JASON to review its Science Based Stockpile Stewardship program with respect to three criteria: 1) contributions to important scientific and technical understanding and to national goals; 2) contributions to maintaining and renewing the technical skill base and overall level of scientific competence in the defense program and the weapons labs, and to the broader U.S. scientific and engineering strength; and 3) contributions to maintaining U.S. confidence in our nuclear stockpile without nuclear testing through improved understanding of weapons physics and diagnostics.

Pointedly, the DOE did not ask the JASONs their opinion about which elements of the proposed SBSS program were necessary, or even to rank them in importance. Where multiple projects were being advanced toward the same end (as, for example, in hydrotesting) DOE did not ask the JASONs which facility or facilities to fund. DOE did not ask the JASONs to evaluate any other approach to maintaining the arsenal other than SBSS, or whether big-ticket SBSS projects could take resources from stockpile surveillance and remanufacturing. DOE did not ask how

many scientists and engineers were necessary to retain in the labs' nuclear weapons programs, with which skills, and DOE did not ask in detail about the nonproliferation impact of the SBSS program. Unbelievably, the JASONs were apparently not asked, nor did they volunteer; to evaluate the programs and projects proposed on the basis of cost.

In short, the DOE appears to have not asked any of the hard questions it should have asked to help set its programmatic priorities and overall funding level. Quite the contrary: it is difficult to see the above questions as anything but an invitation–indeed a requirement–to glorify SBSS, using the outline conveniently provided by DOE. The charge to the JASONs assured that their report would be positive and devoid of any detailed tradeoffs between policy options. And so it is.

While the narrow technical qualifications of the JASONs cannot be impugned, it is not obvious that the JASONs comprise a truly independent review. Many of the authors of this report have worked or still do work for institutions which receive substantial funding from the DOE.[3] Some are the recipient of awards from the DOE. Dr. Sidney Drell, chairman of this and other studies on related subjects for the DOE, works at the Stanford Linear Accelerator (SLAC), which receives some $180 million annually from the DOE. This is not to imply that Dr. Drell or any of the other authors of this report are dishonest. But it is difficult for any of us to provide an entirely dispassionate analysis when the funding, perhaps even the survival, of institutions to which we have devoted ourselves could be at risk.

Neither is it obvious that the JASONs have in every case carefully thought through, or sought expert advice on, some of their conclusions. An illustrative case concerns the nonproliferation impact of SBSS activities. When Dr. Drell was asked by Joe Cirincione of the Campaign for the Non-Proliferation Treaty what scientific data he could provide to support his assertion that the National Ignition Facility (NIF) need not, in the eyes of other nations, compromise U.S. commitments under Article VI of that treaty, he replied that he had obtained no data–that he and the other JASONs had relied entirely on personal judgement and intuition for their conclusion in this area.[4]

Conversely, Jonathan Medalia of the Congressional Research Service reports that:

> Many nonnuclear nations...view a halt to all nuclear explosions of all types for all time as the *minimum* scope of a CTB [comprehensive test ban]. Some want to go further, restraining stewardship to cement shut the door to testing and encourage further denuclearization. For example, Indonesia would ban computer simulations of nuclear tests; Egypt, Germany, and Sweden would ban preparation for nuclear tests; and Iran, Nigeria, and Pakistan would close test sites. Nuclear states feel themselves to be on a treadmill of rising expectations...
>
> At the same time, a large stewardship program might jeopardize indefinite NPT [Nuclear Non-Proliferation Treaty] extension. Many nonnuclear states want the scope of a CTB drawn to eliminate the nuclear nations' *ability* to design, test, and

Ask Few Questions, Get Few Answers: The JASONs' "Science Based Stockpile Stewardship" Study

DRAFT

A Review for Tri-Valley CAREs

by

Greg Mello

February 14, 1995

Ask Few Questions, Get Few Answers:
The JASONs' "Science Based Stockpile Stewardship" Study

A Review for Tri-Valley CAREs by Greg Mello, February 1, 1995

Summary

DRAFT

- The Department of Energy (DOE) asked the JASONs, a respected group of academic defense advisors, to evaluate its science-based stockpile stewardship (SBSS) program. The JASONs were not asked, however, about the relative merit of specific projects in SBSS, or which of these projects--if any--were essential, or to evaluate projects by their benefit-to-cost ratio. As a result their report is not very helpful in evaluating the DOE program.
- The JASON group cannot be considered "independent," since many of the group, including the chairman Dr. Sidney Drell, are closely connected to the DOE.
- In the JASONs' view, "compensation" to the weapons labs for the loss of underground testing is the "basic principle" of the SBSS plan. They recognize, however, that if other nations view SBSS as compensation, this could conflict with U.S. nonproliferation goals.
- The JASONs nowhere demonstrate the need for most aspects of SBSS to maintain a deterrent.
- The JASONs assume that new nuclear weapons must be developed and deployed and that SBSS is necessary to accomplish this. At the same time, the JASONs do not want the perception of this activity to be widely shared.
- The JASONs' analysis of the nonproliferation impacts of the SBSS is quite abridged. They essentially ignore the requirements of the Non-Proliferation Treaty.
- The JASONs propose declassifying many of the technical details of the SBSS program in order to defuse nonproliferation concerns. A senior DOE declassification officer strongly disagreed with this approach, citing direct proliferation risks. The JASONs' declassification proposal seems calculated to gain more scientific users of the new machines and therefore more political support for them.
- The JASONs endorse most of the proposed new facilities that will be the foci of the SBSS program, including all the hydrodynamic testing upgrades planned for this century and the National Ignition Facility (NIF). Yet they offer no reasons why these facilities, including NIF, are in any way necessary. They call for a public-relations campaign to sell NIF within the scientific community.
- The JASONs' prescription for plutonium capabilities calls for a narrowly-defined "curatorship" and for exact reproduction of existing designs, contradicting the rest of the report.

2/18.01 continued

Clearly undercutting the need for a tritium-producing facility; conversely the proposed construction of such a facility contradicts the covenants to uphold arms reduction signed yesterday. Failure to meet treaty obligations will jeopardize U.S. non-proliferation efforts.

Likewise the urgency of need for tritium, not to support just the START II arsenal but also an upload hedge of approximately the same size, weakens the START I agreement and the prospects for the disarmament in Russia. Thus this tritium facility may seriously weaken U.S. national security, a result exactly contrary to the intent of its planners.

Finally we come to #3, cost. This facility competes with other projects in Defense Programs, such as the NIF, and with programmatic responsibilities throughout DP. It competes with environmental cleanup, and any fair analysis of its impacts should include the billions of dollars of cleanup that will not occur, or will be deferred (with concomitant extra "overhead" costs) due to construction of a tritium production facility.

3/16.14

The absence of cost figures from this document is a calculated attempt to avoid political attack. That cost will be very great, in the billions of dollars. The material goal-all, tritium, decays, so early production carries a financial penalty — in this case a penalty of roughly $200-400M/yr; if interest costs on construction are added to operating costs. This is a serious penalty for making tritium too soon and the nation should know about it.

Finally, I should mention that Los Alamos National Laboratory (LANL) just disposed of 10^6 curies of tritium. Recovery was not deemed important. One can only wonder what other tritium is wasted.

I urge the Department to avoid potential controversy and litigation by clarifying the need, cost, and proliferation consequences of its proposed tritium production facility. Thank you for your attention.

Greg Mello
Los Alamos Study Group

Table 1: The Projected U.S. Stockpile After Implementation of START II

Weapon	Use	Yield (kt)	Number	Design Lab	Produced	IHE	FRP
B61-7	Strategic bomb	10-350? (Hansen: 500)	450	LANL	1985-? (pits 1966-1971)	yes	no
B61-mods 3/4/10	Tactical bomb	1-150? (H: 300)	100	LANL	1979-1990	yes	no
W76	SLBM C4/D5	100	1,280	LANL	1978-1987	no	no
W80-0	SLCM	5 & 150	350	LANL	1984-1990	yes	no
W80-1	ALCM	5 & 150	400	LANL	1982-1990	yes	no
B83	Strategic bomb	low to 1,200	500	LLNL	1983-1990	yes	yes
W87-0	ICBM	300	500	LLNL	1986-1989	yes	yes
W88	SLBM D5	475	400	LANL	1989-1990	no	no
Reserve Stockpile After START II (estimate of Norris and Arkin)							
W76	as above		1,000	as above			
W78	ICBM	335	1,000	LANL	1979-?	no	no
B53-1? B61 & B83 W80-1	gravity bombs and ALCMs	5 to 1,200; 9,000 if B53-1	1,500	both	B53: 1962-1965	B53: lacks IHE, FRP, and full electrical safety	
Total weapons after START II: about 8,500 (includes spares)							

IHE: Insensitive high explosive
FRP: fire resistant pit
LANL: Los Alamos National Laboratory
LLNL: Lawrence Livermore National Laboratory
ICBM: intercontinental ballistic missile (Minuteman III in this case)
SLBM: submarine-launched ballistic missile
ALCM: air-launched cruise missile
SLCM: submarine-launched cruise missile
C4: Trident I C4 missile
D5: Trident II D5 missile

Sources:

Tom Zamora-Collins and David Albright, ISIS Report, October 1993; Christopher Paine, "CTB Negotiating Issues With Implications for Nuclear Nonproliferation," Natural Resources Defense Council, April 1994; Stanley Norris and William Arkin, "Nuclear Notebook," Bulletin of the Atomic Scientists, Jan/Feb. 1995; Chuck Hansen ("H" above), U.S. Nuclear Weapons: The Secret History, Orion Books, 1988.

This table was prepared for Tri-Valley CAREs, Livermore, CA by Greg Mello

May 12, 1995

Mr. Steven Sabinski, Director
Office of Reconfiguration
U.S. Department of Energy
1000 Independence Ave. SE
Washington DC 20585

Re: Tritium Supply and Recycling PEIS

Dear Steve —

Please bear with these comments in long hand. I'm writing them in the public reading room of the Forrestal Building, without access to a computer. They will be brief:

The decision to build a tritium production facility is one that has important impacts in three areas:

1. The environment, interpreted broadly;
2. The international regulatory climate, as regards
   a. non-proliferation, and
   b. bilateral arms reduction with Russia; and
3. The federal fisc, both
   a. within DOE and
   b. in the federal accounts taken as a whole.

I trust that others will comment in depth on the first area, which is the focus of the PEIS you have prepared; I will not.

1/18.08 All these areas of impact ultimately rest on the "Purpose and Need" section of the PEIS, in the sense that the PEIS and related decision documents implicitly or explicitly weigh the costs — the impacts — of the proposed action against the benefit, i.e. the purpose & need.

The "Purpose and Need" section of the PEIS is weak, crippled as it is

by classification barriers. It is possible that the PEIS has been fatally crippled in this, i.e. that it is an analysis of an action which, in its most central and salient essence, has not been disclosed. That is, the PEIS is an unclassified ranking of the impacts of a classified action. Whether the alternatives chosen are "reasonable" cannot be ascertained, and so public review becomes damaged almost beyond repair; if not in fact beyond repair.

Critical information which has been withheld includes:

- the size of the active stockpile and its tritium requirement;
- the size of the inactive stockpile and its tritium requirement;
- the current inventory of tritium, the steady-state production rate required, and any surge capacity required;
- 1/18.08 continued the uncertainty in these figures, i.e. the degree of "hedge" they embody; and
- the quantity of "reserve" tritium, as per Figure ES-4.

Without this information, it is not clear that a new tritium facility is needed at all at this time. It may well be that a new facility is not needed to maintain the declared U.S. deterrent force — the START II arsenal of 3500 strategic and a few hundred tactical, nuclear weapons — until (approximately) the year 2026. This date is one tritium half-life beyond the date needed to maintain the START II arsenal with typical hedge of about 4500 weapons, as estimated by the Natural Resources Defense Council. Eliminating the typical hedge appears to give an additional twelve years, thus allowing enormous cost savings. Please see the attached stockpile table and footnote 17 of the attached paper critiquing the JASONs stockpile stewardship study.

2/18.01 In the context of a weekly-scrutinized need for the a tritium production facility, the potential proliferation impacts of such a facility loom large. The DOE should foster a proliferation analysis of this project, such as it has done for its program of reclaiming foreign reactor spent fuel. The agreements reached yesterday as part of the Non-Proliferation Treaty (NPT) renewal commit the U.S. to further progress on in nuclear disarmament;

E. Recommendations

Peak Loads

For peak load requirements, the simple cycle combustion turbine offers the greatest benefit to risk ratio of any technology. If the utility's system is such that the full benefit of the large simple cycle combustion turbine can be utilized, then it becomes the better choice. The greatest risk associated with either of these options is the uncertainty of future natural gas pricing.

2. Intermediate Loads

For intermediate load requirements, the large simple cycle combustion turbine and combined cycle plant provide the most value. The greatest risks involve the uncertainty of future natural gas pricing. The fuel risk in this mode of operation is much greater than in peaking, since much more gas is consumed.

3. Base Loads

For base load requirements, the combined cycle combustion turbine is the best choice. However, this analysis indicates that the low cost and high efficiency large simple cycle combustion turbine should also be seriously considered. The proven pulverized coal plant is more expensive, however, it has the advantage of having a more secure fuel supply with stable and predictable fuel costs.

Technology	Remarks
1. Large Combustion Turbine (CTL)	This new generation of large, high efficiency combustion turbines appears competitive in all operating modes and warrants serious consideration. However, a detailed analysis of the Southwestern's existing generating mix and load/reserve requirements is necessary to determine whether this technology can cost effectively be deployed on Southwestern's system.
2. Combustion Turbine (CT)	The most efficient and cost effective technology now available for peaking loads, this is the most suitable generation source for Southwestern's future needs.
3. Combined-Cycle Combustion Turbine (CC)	Best suited for intermediate and base loads, but can also meet peak load requirements. The minimum required size of a combined cycle plant ranks it behind the combustion turbine for Southwestern's situation.
4. Pulverized Coal (PC)	As a proven and dependable technology having a very secure fuel supply; the large incremental size of this alternative and the current forecast of natural gas prices, diminish its cost effectiveness. However, it remains an option for baseload applications.
5. Wind Turbines (WIND)	The most viable of the renewable energy sources appropriate to Southwestern's service area. The application of wind as a capacity resource is limited by the intermittent and non dispatchable nature of the area's wind regime.

Data Base for Technologies

Description	[illegible]	[illegible]	[illegible]	SOx	VOC	NOx	PM	CO	CO2
Atmospheric Fluid Bed (W-Coal)	AFB	40	78	0.4000	0.0040	0.2500	0.0300	0.0300	230.00
Battery Storage - HLP93	BAT	20	42						
Biomass Energy Systems	BIG/CC	20							
Combined Cycle	CC	30	60	0.0006	0.0240	0.0350	0.0200	0.1100	112.00
Combustion Turbine Small (80 MW)	CT	25	46	0.0006	0.0240	0.0350	0.0200	0.1100	112.00
Combustion Turbine Large (198 MW)	CTL	25	46	0.0006	0.0240	0.0350	0.0200	0.1100	112.00
Compressed Air Storage System	CAES	30	84	0.0006	0.0240	0.0350	0.0200	0.1100	112.00
Integrated Coal Gasification (W-Coal)	IGCC	30	78	0.0006	0.0240	0.0350	0.0200	0.1100	112.00
Molten Carbonate Fuel Cell	MCFC	20							
Municipal Solid Waste - Mass Burn Plant	MSW	20	78						
Municipal Solid Waste - Refuge Derv Fuel	MSW(r)	20	78						
Pressurized Fluid Bed	PFB	40	78	0.4000	0.0040	0.3000	0.0300	0.0300	206.00
Pulverized Coal (W Coal)	PC	40	81	0.4000	0.0040	0.3000	0.0300	0.0300	225.00
Solar Photovoltaic (Flat Plate)	PV	20	42	0.0000	0.0000	0.0000	0.0000	0.0000	0.00
Wind Turbines 25% C. F.	WIND	20	42	0.0000	0.0000	0.0000	0.0000	0.0000	0.00

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COMMENT LETTER

Southwestern Public Service Company Emissions Inventory Worksheet for1994
SPS Plant: Tolk Station
USING AIRS/AFS for CO,VOC; AP 42 for PM
Fuel Analysis for SO2; Stack Tests and AIRS for NOx

TACS Acct. No. ==> LB04478
08-May-95 01:00 PM

Summary Plant	Data Source*	Total Fuel Consumption: Natural Gas MMCF	MMBTUs	Coal 1,000 Tons	MMBTUs	Oil MGals	MMBTUs	Annual Total MMBTUs
Unit 1	767	38.3	3.88E+04	1,985.5	3.44E+07	N/A	0.00E+00	3.44E+07
Unit 2	767	37.5	3.78E+04	1,963.2	3.40E+07	N/A	0.00E+00	3.41E+07
			0.00E+00		0.00E+00		0.00E+00	0.00E+00
			0.00E+00		0.00E+00		0.00F+00	0.00F+00
Auxiliary Boiler	Auxiliary Units Use Factors for Units between 10 and 100 MMBTUs/ Hr							
	OL	0.768	7.97E+02	N/A	N/A		0.00E+00	7.97E+02
	OL	N/A	0.00E+00	N/A	N/A		0.00E+00	0.00E+00
	Emergency Units Use Factors for Internal Combustion Engines							
Emerg.Gen. 1	MM	N/A	0.00E+00	N/A	N/A	1.714	5.87E+02	5.87E+02
Emerg.Gen. 2a	MM	N/A	0.00E+00	N/A	N/A	1.714	2.31E+02	2.31E+02
Emerg.Gen. 2b	MM	N/A	0.00E+00	N/A	N/A	1.714	2.31E+02	2.31E+02

Fuel Characteristics
Coal bals. from Fuel Testing --
SPS System Lab Average of 1994 Values
BTU/Lb 8,644.5
Lb. SO2/MMBTUs 0.740
Ash % 5.80%
NATURAL GAS avg. BTU from Fuel Testing
BTU/cf 1,011.7
OIL avg. BTU from Fuel Testing
BTU/GAL 135,800
Lb.SO2/MMBTUs = 0.12

* Data Sources: 767 = EIA Form 767 for Current Year of Emissions
: OL = Operators Log of Hours of Operation x Fuel Rate
: MM = Hour meter

Summary Of calculations	Emissions Tons/Yr Basis--> EPA	SO2 Fuel Analysis	VOC AP 42	NOx STACK TEST	CO AP42	PM AP 42	Total Emissions
Plant							
Unit 1	1-1	12,730 TONS	70 TONS	6,872 TONS	596 TONS	516 TONS	20,764 TONS
Unit 2	2-1	12,587 TONS	69 TONS	5,858 TONS	590 TONS	510 TONS	19,614 TONS
Auxiliary Boiler	AUX BLR	0 TONS	0 TONS	0 TONS	0 TONS	0 TONS	0 TONS
Emerg.Gen. 1	1-3	0 TONS	0 TONS	1 TONS	0 TONS	0 TONS	1 TONS
Emerg.Gen. 2a	2-3	0 TONS	0 TONS	0 TONS	0 TONS	0 TONS	0 TONS
Emerg.Gen. 2b	2-4	0 TONS	0 TONS	0 TONS	0 TONS	0 TONS	0 TONS
ASH SYSTEMS							
Unit 1	1-2					0 TONS	0 TONS
Unit 2	2-2					0 TONS	0 TONS
						0 TONS	0 TONS
ASH PITS	ASH					26 TONS	26 TONS
Plant Totals		25,317.0 TONS	138.0 TONS	12,731.0 TONS	1,186.0 TONS	1,052.0 TONS	40,425.0 TONS

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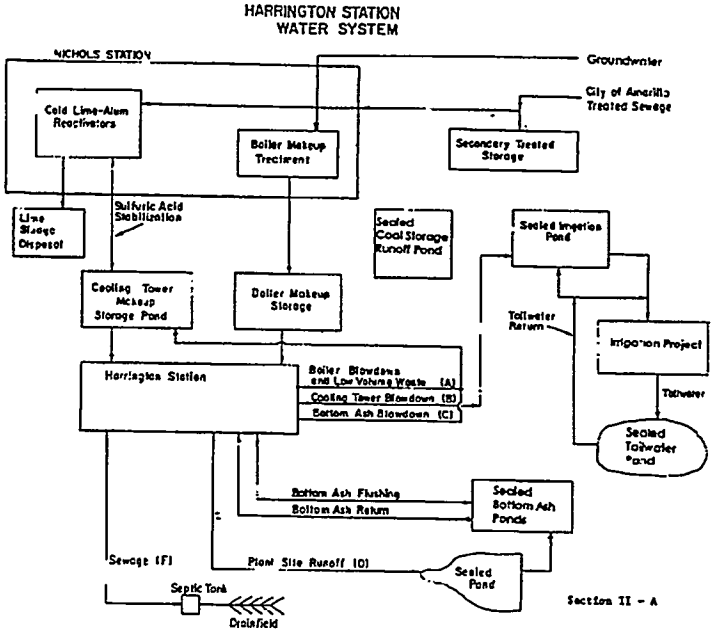

18/13.04.18 continued

interconnections) supplies. Nor do we think a dedicated plant would be able, for instance, to cope with the cyclical nature of accelerator operation.

Nonetheless, we will note for DOE some of the operating parameters of plants (coal-fueled and gas-fueled) on our system or projected for future use on our system, as general guides for further consideration of the dedicated power plant option. (SPS is ready to provide more detailed information to the Department on such plants, if desired, during preparation of the final PEIS.)

Most recently constructed coal-fueled units

Southwestern brought its two-unit, pulverized coal-fueled Ray Tolk Generating Station, at Muleshoe, Texas, on-line in 1982 (Unit 1, 565 MW) and 1985 (Unit 2, 565 MW). Southwestern's then in-house engineering arm (now a subsidiary, Utility Engineering, Inc.) designed and oversaw construction of the units. The installed cost of Unit 1 was $493/kw; the installed cost of Unit 2 was $510/kw (AFUDC included). These costs were about one-half the national average cost per installed kw for similar plants.

Our "fast-tracking" design of each of the units required about two years; construction required about 44 months per unit. We estimate permitting today could require 30-36 months.

Tolk Station utilizes low-sulfur Western sub-bituminous coal. It is equipped with fabric filters ("baghouses") for particulate control. The low-sulfur coal is used for sulfur dioxide control. Resultantly, the plant is widely recognized as an environmentally "clean" plant. A copy of the emissions inventory for the station, for 1994, is attached.

Over the past four years, Tolk station has required an average of 117 employees, to operate and maintain both units.

Total O&M cost of production at Tolk for calendar 1994 was $21.35 per Mwh. Total O&M cost, less fuel, for calendar 1994 was $1.64 per Mwh.

Station power used at Tolk in 1994 represented 4.8% of gross generation.

Projected coal-fueled and natural gas-fueled units

Southwestern recently filed with the Public Utility Commission of Texas a "Notice of Intent" (NOI) to construct future generating facilities. The NOI process in Texas, in part, requires consideration of all available means of generation, elimination of uneconomic and otherwise impractical technologies, and characterization of the potential environmental impacts of "better" technologies. Southwestern is attaching two relevant pages from our NOI. The plants characterized in the filings would be state-of-the-art. However, relative to projected coal-sulfur content and related coal-plant sulfur dioxide emissions: Southwestern in our NOI considered a wider range of Western coals than we utilize at any units today. Depending on the sulfur content of the coal(s) burned, sulfur dioxide emissions from coal-fueled plants could be even lower than shown.

14/06.13 continued

open water") -- practically is unwarranted. It is the nature of playas to undergo temporary depth changes and limited increases (and decreases) in open water areas. The plant species in and on playas are adapted to such changes, which have occurred down through the centuries. Such changes at any given lake can occur quickly -- for instance, following major thunderstorms; such changes can occur very slowly -- for instance, during (infrequent) long rainy seasons or during occasional long droughts. Such changes do not "disturb" playa plant communities.

Relative to endangered or threatened or special status species, an area in which planners must be vigilant: The draft reports (Table 4.5.2.6.1) 10 Federal- or state-listed species that may be found on the Pantex site or in the vicinity (and appendix table C-5 lists 8 other such species identified in the region). Importantly, the draft notes (4-279) that *no* critical habitat for threatened and endangered species exists on Pantex, and that (4-280), "There is little undisturbed habitat at Pantex that would accommodate any of the threatened, endangered, and other special status species listed in table 4.5.2.6-1."

The draft also reports there are no Federal- or state-listed plant species known to occur on Pantex (although there are three cactus species at Pantex "that *may be proposed for a watchlist* of potentially threatened plant species" (4-280).

15/06.05

Clearly, siting the tritium program at Pantex would not further threaten or endanger protected species.

Individual animals (for instance, slow moving reptiles or small mammals) might be taken by construction activities; but even this possibility could be avoided (by surveys and by capture and transplantation) if deemed appropriate.

The only consistently occurring Federal-listed species at the Pantex site is the bald eagle. The eagle is highly mobile; the playa habitat it has used at Pantex is abundant nearby and common throughout a great region. Neither construction nor operation of the tritium program reasonably would be expected to adversely affect the species.

A representative of a second Federal-listed species, the whooping crane, was reported at the site, the draft relates, in 1990. The rarity of occurrence of the species on the site mitigates concern that it may be harmed by the program. (Southwestern, however, corrects its written comments filed

15/06.05 continued

in Amarillo in April in this regard. We remarked the (likely to be downlisted) eagle was the only Federal-endangered species of concern at the site. We note the reported sighting of the crane.)

Relative to aquatic species, it appears the only effect of siting at Pantex would be positive: some small increase in the availability of habitat for amphibians (4-309).

4.5.2.7 and 4.5.3.7 Cultural and Paleontological Resources

16/07.05

Southwestern concurs with the draft that there possibly are undiscovered cultural and paleontological resources at the site, which might be affected by construction of tritium supply and recycling facilities. We also concur that such resources could be protected by typical mitigation measures.

4.5.3.10 Waste Management

17/10.10

Relative to the draft's discussion of waste management, Southwestern would note, first, that Pantex's existing pollution prevention and waste minimization programs, coupled with recycling activities, have significantly reduced waste streams; further efforts in that regard, outlined in the draft statement, are expected to even more significantly reduce wastes from the plant site. Second: The possible increased use of (and shortened life of) the City of Amarillo solid waste facilities is not of significant consequence. In this region of the United States there is abundant land available for solid waste disposal.

4.8.2 Dedicated Power Plant for Accelerator Production of Tritium

18/13.04.18

SPS counsels against the dedicated power plant option for APT technology. At the Pantex site, we are confident, there would be no cost savings from construction and utilization of a dedicated plant (SPS's highly competitive industrial power rates, especially for interruptible power, we believe preclude any possible savings). Nor do we think a dedicated plant would be as reliable as SPS grid (and

Again at 4-273, the draft reads, "The Ogallala aquifer beneath Pantex has not been classified by EPA. However, it is the only source of drinking water in the area." Actually, a more accurate report might read, "However, it is the source of drinking water for Pantex."

12/04.02.01 continued

Similarly, at 4-276, following the report that Amarillo pumped 4.9 billion gallons from the aquifer in 1991, the draft says, "The Ogallala Formation is also the source for municipal and industrial water to nearby towns and cities ...." Again, given the widespread use of Canadian River water by the region's towns and cities, the report would better characterize the aquifer as "a source," rather than "the source" of water for area municipal purposes.

4.5.2.5 and 4.5.3.5 Geology and Soils

The draft correctly characterizes the soils that underlie Pantex as Pullman-Randall association "*very low permeability clays and clay loams.*" This fact greatly mitigates possible concerns (4-305) about percolation to groundwater of treated wastewaters discharged to playas.

13/05.04

The Department also correctly characterizes the seismicity of the Pantex area as low. However (p. 4-278) one of the subject basins is the "Palo Duro Basin," rather than the "Palo Verde."

4.5.2.6 and 4.5.3.6 Biotic Resources

At 4-279, the draft characterizes the Pantex playas as "important to migratory birds and ... valuable habitat for nesting and wintering birds and waterfowl." We suggest the characterization overstates the case for the five lakes; after all, there are an estimated 20,000 to 30,000 playas in the region. All are essentially similar -- saucer-shaped, shallow, undrained, but, primarily because of evaporation, relatively ephemeral. All grow in size, and diminish in size, with at least some regularity on a seasonal basis. All support the same, or highly similar, plant and wildlife communities, and typically provide domestic livestock watering places as well. Given the great commonality of habitats provided by the great numbers of playas, there is little practical reason for environmental concern about the

14/06.13

effectively minor changes that might occur at the Pantex playas were the Tritium program to be sited at Pantex.

The draft correctly notes (4-307) that relative to biotic resources, "The potential impacts (of siting the program at Pantex) would be minor since the expansion would occur in the already developed main plant site."

However, we question the apparent concern suggested by the sentence (4-307), "Wastewater discharge to the playas could cause a general degradation of the naturally occurring ephemeral wetland system at Pantex and an increase in open water habitat." We understand the objection to mean: "Every playa lake 'should' dry up sometimes; the treated wastewaters entering the playas may make them more permanent -- even increase water habitat where in some years there might be none."

Actually, "in nature," some playas do not dry up. We are thankful for this, because the permanency of those lakes in certain years may in fact be "important to migratory birds and ... valuable habitat for nesting and wintering birds and waterfowl." In fact, in certain years, those permanent lakes may be critical to individual fowl. Therefore, we can not anticipate "environmental harms" occurring if any or all of the Pantex playas become less ephemeral than at present.

14/06.13 continued

(We recognize those playas already have been and are affected to some degree by wastewater and storm water discharges; probably, the lakes are of *increased* value to wildlife as a result.)

In any case, the potential changes posed by more discharge to the lakes would be changes in degree, not in kind, and -- given the climate of the area -- they would be temporary.

The draft recognizes this point in discussion of a concern for plant life at the playas (4-309): " ... temporary impacts to the playas could include shifts in the composition of wetland plant communities and limited increases in the area of open water. The plant community shifts would favor plants tolerant of longer and deeper inundation. Furthermore, disturbed plant communities provide an opportunity for establishment of invasive exotic plant species."

Here, again, we think the concern expressed -- limited as it is ("temporary impacts ... limited increases in the area of

the southwest, and the annual average wind speed is about 14 miles per hour. These relatively strong winds, combined with favorable atmospheric stability, promote atmospheric dispersion of contaminants and pollutants. Because of the favorable dispersion characteristics of the area and the low density of population, automobile and industrial pollution is minimal, and air quality is good. The area appropriately is classified as "attainment" or "unclassified," and there are no Prevention of Significant Deterioration (PSD) Class I areas in the vicinity.

Although 4.5.3.3 suggests, "Based on the emission rates presented in appendix table B.1.4-4, Prevention of Significant Deterioration permits may be required for each of the proposed alternatives at Pantex," SPS finds *no* evidence that PSD permits could be triggered by the Pantex Tritium program. We suggest the Department will want to revise 4.5.3.3.

11/03.04 continued

Additionally, estimated impacts of toxic/hazardous air pollutants from any of the tritium supply technologies and recycling facilities at Pantex clearly would comply with applicable air quality regulations and standards, which protect human health and welfare and the environment with an ample margin of safety.

The Pantex area by wide margins is in compliance with all air quality standards -- with the one exception of the 30-minute standard for hydrogen chloride (exceeded occasionally at the Pantex Burning Grounds, when high explosives components are destroyed; the site's proposed waste explosives treatment/disposal facility is expected to reduce the hydrogen chloride emissions so that even the short-term standard is not exceeded). There appears to be nothing in the Tritium program that would degrade the Pantex area's air quality.

Equally, nothing in the program is anticipated to degrade the area acoustically.

Further Discussion of 4.5.2.4 and 4.5.3.4 Water Resources

12/04.02.01

The premise of the draft PEIS discussion of water resources required for the Tritium program at the Pantex plant is that *only* Ogallala aquifer-supplied water would be available, and that resulting additional potential depletion of the aquifer

could be problematic. However, as has been clearly established by public comment in Amarillo and written submissions, the premise is incorrect and the concern unwarranted. More than sufficient quantities of treated wastewater available free-of-charge from the City of Amarillo can supply the program *without* causing additional, program-related, use of the aquifer supplies.

Importantly, too, as previously noted, the great majority (some 70%) of the City of Amarillo wastewater originally is *not* Ogallala aquifer-dependent; rather, it is surface water captured at the Meredith impoundment of the Canadian River. The primary source for the potentially recycled "waste" water, then, is a renewable source.

Of interest, too: A fundamental reason the City of Amarillo uses aquifer water in a mix with Canadian River water is the relatively high salinity of the Canadian River water (the "fresh" aquifer water effectively dilutes the river water, making the final product more potable). These conditions are expected to change: It may well be that in the relatively near future the Bureau of Reclamation will complete a planned "Canadian River Salinity Control Project." The project, when completed, is expected to significantly reduce the need for Amarillo (and other affected towns and cities across the High Plains) to add aquifer water to their water supplies. To the extent the project is successful, use of Ogallala formation water by area municipalities will be reduced. That would lead to a reduction of even the presently expected aquifer-supplement to the Hollywood Road wastewater supply.

12/04.02.01 continued

A couple of notes relative to clarity and accuracy of the PRIS:

The draft at 4-273 states, "In 1990, the recoverable volume of water in storage in the Ogallala aquifer was estimated at approximately ... 417 million acre feet ...." In fact, that estimate is of the recoverable volume of water in the Ogallala in Texas, only. The Texas Water Resources Institute of Texas A&M University, College Station, Texas, reports in *Groundwater in the Great Plains* (author: Ric Jensen; undated, but citing references published in 1991), "... the massive High Plains or Ogallala Aquifer ... contains roughly 3.25 billion acre feet of water that can be recovered" (p. 22).

7/01.07 continued

Citing the Tritium program structures at Pantex would *enhance* that visual resource.

4.5.2.2. and 4.5.3.2. Site Infrastructure, and 4.8.1 (Infrastructure related to) Sale of Steam from Tritium Supply Technologies

The draft incorrectly identifies the regional electrical power pool from which Pantex, through SPS, draws service. SPS is connected to the Southwest Power Pool, and has additional intertie access to the Western Systems Coordinating Council and the Electric Reliability Council of Texas. DOE will want to review Table 4.5.2.2-2, which is intended to characterize the generating source types that could supply the tritium program-related load at Pantex, and Table 4.5.3.2-2, which would summarize the program's impacts on the regional electrical power pools.

Nonetheless, the Department can be assured that capability for the projected loads exists through the Southwestern Public Service grid and interconnections.

8/02.04

Notably: At Pantex, siting of new tritium supply and recycling facilities would require only minor modifications to the existing site infrastructure (4-295).

SPS anticipates that additional off-site electrical transmission lines would be required to strengthen supply to (or, in the case of electricity-producing reactor technologies, from) Pantex.

Were this company to construct or supervise construction of needed additional transmission lines, the lines would follow existing rights-of-way corridors where possible. They would be constructed in accordance with the environmental mandates of the National Environmental Policy Act and of the Public Utility Commission of Texas, supplemented by company policies. The Federal- and state-policies and standards require that only *minimum* environmental impacts occur during construction and operation/maintenance of lines. The standards require careful consideration of, and mitigation of, any potential adverse impacts to the environment and cultural and paleontological resources. Those requirements are complemented by SPS line construction policies. The company takes particular pride in environmental stewardship, and is confident any needed transmission can be constructed

8/02.04 continued

under our supervision without significant adverse impact on natural or other resources.

9/01.08

Construction of transmission and distribution line does result in some land use and visual impacts, of course. But in the Pantex area (essentially a flat plains), and along existing corridors, the incremental visual impacts would be slight. Affects on land resources during construction would be temporary, and affects on land use (for instance, on grazing or farm lands) likely would be slight as well, not only because transmission structures occupy little land, but also because likely routes would be along highway rights-of-way and/or existing power supply corridors.

10/11.00.25

The draft takes note of some concerns about electromagnetic fields (EMF) associated with transmission lines. We think the discussion in the draft of EMF is appropriately cautious.

However, we suggest revising the second and third sentences in that discussion, perhaps to read: "*Electric fields levels associated with transmission and distribution lines are a function of the voltage of the line, while magnetic field levels are a function of the current carried by the conductors. Both field magnitudes are affected by the size of conductor, conductor separation distance, and the distance from the conductor.*"

We also suggest inserting after the present fifth sentence, "*The magnitude of the fields and the time duration of exposure will both affect exposure levels. No correlation between various exposure levels and adverse health effects has been determined.*"

Finally, we suggest the present sixth sentence should begin a new paragraph.

11/03.04

4.5.2.3 and 4.5.3.3. Air Quality and Acoustics

As the draft notes, *no* significant adverse air quality or acoustics impacts can be anticipated from siting the Tritium program at Pantex.

The climate of the Texas High Plains is semiarid, characterized by relatively mild winters and by hot summers, with high winds in the spring. Winds generally come from

4/04.02.01 continued

to be a valuable resource for irrigation use or irrigation supplement at the Pantex site, as well.

3.4.1.4 Cooling Systems

The draft PEIS indicates mechanical draft dry cooling towers would be used for the reactors at all dry sites, and wet cooling would be used for APT technology at any site.

Two additional cooling system technologies should be considered for use for any of the technologies at the nominal "dry site," Pantex:

Mechanical draft wet cooling towers (employing treated "waste" water from the City of Amarillo) could be efficient at the Pantex site both because of their relatively lower construction cost (a feature noted in the draft PEIS) and the economical electric service available from SPS. Southwestern employs in-house designed mechanical draft wet cooling towers at power generating plants throughout its service area; they perform with excellent efficiency under weather conditions typical of this semi-arid region, including during seasonally hot weather.

5/13.00.10

Input cooling wastewater could be cold-lime softened, then used and re-used from 4 to 15 times, before being disposed of as blowdown in lined evaporation ponds, or, potentially, re-used again to irrigate crops or pastures.

The attached diagram (end of Section II), titled "Harrington Station Water System," outlines our uses at one power generation station of mechanical draft cooling towers employing cold-lime softened treated wastewater. The diagram also indicates the means we use to dispose of final "waste" water by irrigation.

DOE also should consider using dry mechanical draft towers with wet assist. The needed structures could be smaller (and less expensive) than the non-evaporative mechanical draft towers discussed in the draft; and water use would be minimized, compared to wet systems. The dry tower system could be used during the three cooler-weather seasons; the wet assist used when summertime ambient temperatures exceed an established threshold.

Resulting efficiencies to consider include: In contrast with non-evaporative systems, significantly less electric fan, horsepower would be required on high ambient temperature days, and significantly lower peak temperatures -- and, resultantly, significantly less back pressure on the turbines integral to two of the reactor technologies -- could be achieved and maintained.

5/13.00.10 continued

To expand on the latter concept: If a Tritium-producing reactor technology that also produces electricity were chosen, the amount of electricity generated would be dependent in part on the cooling technology selected. Electricity production efficiency is greater when steam condenser temperatures are lower, as they would be if either of those two suggested technologies (rather than a non-evaporative technology) were selected.

Again, Southwestern Public Service offers DOE experience and expertise for both design and operational assistance with such cooling tower systems.

4.5.2.1 and 4.5.3.1. Land Resources and Visual Resources

The draft PEIS discussion of land use on and near the Pantex site notes the U.S. Soil Conservation Service considers area farmland "prime farmland when irrigated." SPS suggests any "loss" of such *potential* prime farmland on the present Pantex site to an industrial use would be slight, relative to the expanses of cultivated and irrigated lands across the high plains of Texas and the regional "Golden Spread." Moreover, such "loss" could be more than balanced by application of blowdown cooling tower waters as irrigation or irrigation supplement in the immediate area.

6/01.06

Like DOE, we see no other potential environmental "loss" of land resources resulting from siting the Tritium program at Pantex.

Nor would there be an adverse environmental affect to visual resources by siting at Pantex. The Bureau of Land Management classifies visual resources in the Pantex area as Class 4; the program would not downgrade that existing, industrial-use encompassing, designation. The "most sensitive viewpoint," from the Texas Plains Trail at the intersection of U.S. 60 and FM 2373, designates the existing industrial structures at Pantex as a "point of interest."

7/01.07

Use of treated wastewater for the Tritium supply and recycling complex at Pantex is particularly appealing conceptually because the use would be a *recycling* of an important resource. The water -- in any case, whether or not the Tritium program is located at Pantex -- will be utilized by Amarilloans from surface water and underground water supplies, and used for domestic, commercial, and industrial purposes. The re-use at Pantex would be a boon, especially attractive to the environmentally conscientious.

(Presently, some 7 million gallons of wastewater per day from the Hollywood Road plant, water that meets EPA surface water discharge standards, is merely released to an ephemeral saline stream. Even the initial mixing with stream water degrades the wastewater; further movement downstream further degrades the combined water, primarily with chlorides, to a significant degree; the water becomes unusable.)

4/04.02.01 continued

The sources for Amarillo's water are approximately 70% surface water, delivered from the Lake Meredith impoundment of the Canadian River (approximately 25 miles north of Pantex), and 30% groundwater, from wells (primarily northeast of Pantex) drawing from the Ogallala Aquifer. Assuming use of the treated wastewater, important reconsiderations relative to "the affected environment and environmental impacts" of the Tritium program at Pantex follow:

Although perhaps 70% of the water re-used by the Pantex program would be renewable surface water from the Canadian River, the draft PEIS observation, "*Surface waters would not be affected by construction or operation at Pantex,*" would be accurate!

Moreover, groundwater use attributable to the Pantex tritium program would be practically nil. (Southwestern assumes the new program at Pantex would make use of some "fresh" groundwater additional to that presently used on site, for instance for potable water purposes and in complement to the treated wastewater for some industrial purposes. However, the percentage of "new groundwater" use would be quite small.)

Therefore, *Pantex tritium program-related withdrawals of groundwater would NOT adversely affect aquifer levels.*

These "new" water resource considerations should help make obvious the Pantex site may well be the environmentally superior site for the Tritium supply and recycling program.

(Incidentally: the draft PEIS fails to put historical drawdown of the Ogallala Aquifer in appropriate perspective. For instance, the draft reports that during the 1980-1990 period, the City of Amarillo well field north of Pantex experienced "up to" 60 feet of water-level decline, causing a depression in the groundwater level northwest of Pantex. The subject, approximately 20-square-mile, well field depression is miniscule relative to the aquifer itself. The Ogallala extends from South Dakota and eastern Wyoming throughout most of Nebraska, includes great portions of Colorado and Kansas, underlies almost all of the Oklahoma Panhandle and far western Oklahoma, eastern New Mexico, and northwest Texas. The aquifer is estimated by the Texas Water Resources Institute to contain *3.25 billion acre feet of water*; see discussion of 4.5.2.4, below.)

4/04.02.01 continued

Southwestern emphasizes to DOE that the City of Amarillo's wastewater (better characterized as reclaimed secondary treated sewage effluent) is highly suitable for cooling tower purposes. This company has used such water in mechanical draft wet cooling towers successfully for 35 years. We presently use approximately 12 million gallons per day (from the City's River Road Wastewater Treatment Plant) for such purposes at two power generating stations north of Amarillo, and approximately 4.5 million gallons per day at a power station near Lubbock, Texas.

Appropriate technology for use of reclaimed secondary treated sewage effluent is well established. Cost of treatment is less than or equal to water field development costs (and of course provides the additional benefit of conservation of a valuable natural resource). SPS offers our experience and expertise in using wastewater to DOE for both design and operational assistance.

Finally, please note that cooling tower blowdown water from our Amarillo-area, wastewater-using power generating plants, has proved to be a valuable resource for irrigation uses. Farmlands and grazing fields near those plants annually produce significant amounts of grasses and alfalfa crops, fed cattle, and grass seeds. Depending on the cooling tower technology used at Pantex, and the numbers of "times through" the cooling towers (which can range from 4 to 15 re-uses), the blowdown from the treated effluent may prove

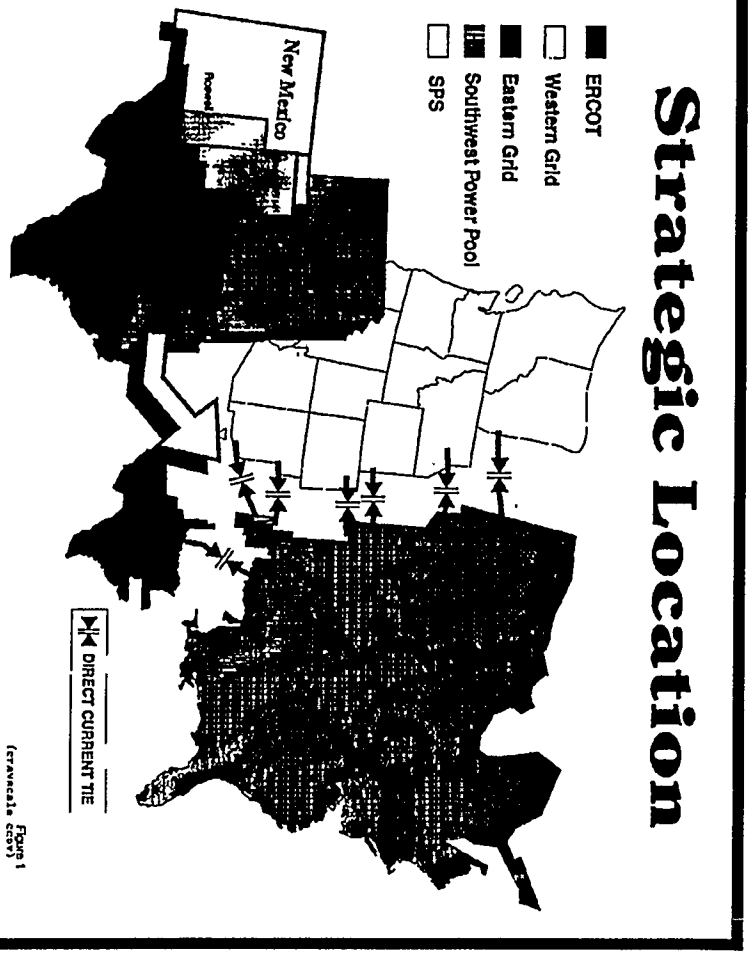

Figure 1

SECTION II

AFFECTED ENVIRONMENT and ENVIRONMENTAL IMPACTS - PANTEX SITE

The following comments suggest DOE should reconsider some important draft characterizations of the affected environment, and environmental impacts, of siting the Tritium Supply and Recycling Program at the Pantex Plant.

The comments generally follow the order of discussion of the "environment" and "potential impacts" presented in the draft statement. Draft PEIS citations are noted where possible; however, not *all* draft discussions of or notes about a particular concern are noted; for instance, SPS may cite DOE discussion of a concern in the draft PEIS Summary or in a section of Chapter 4, but would not cite the same concern in the summary comparison columns of Table 3.6.1.

3.3.5 Candidate Sites ... Pantex ... Water Resources
and
4.5.2.4, 4.5.3.4 ... Pantex ... Water Resources

Availability for any of the proposed technologies of more-than-sufficient quantities of so-called "waste" water from the City of Amarillo allows and effectively requires complete re-evaluation of -- and re-characterization of -- water resources for the Pantex site, and of the potential impacts of Tritium supply and recycling at Pantex on area water resources.

4/04.02.01

Pantex in effect is not a "dry" site. By the PEIS baseline year, 2010, the City of Amarillo anticipates just one of its wastewater treatment plants (Hollywood Road) will produce 12 million gallons per day of treated wastewater. That amount of water is more than sufficient to serve the estimated needs of any of the proposed technologies. The City has formally offered that wastewater to DOE, free-of-charge. And the Amarillo Economic Development Corporation has offered to construct at its expense facilities to transport that wastewater to the Pantex site. (Letter to Office of Reconfiguration from City of Amarillo Mayor Kel Soliger, April 28, 1995). A piped "stream" can flow from Amarillo to the "wet-site" DOE facilities at Pantex.

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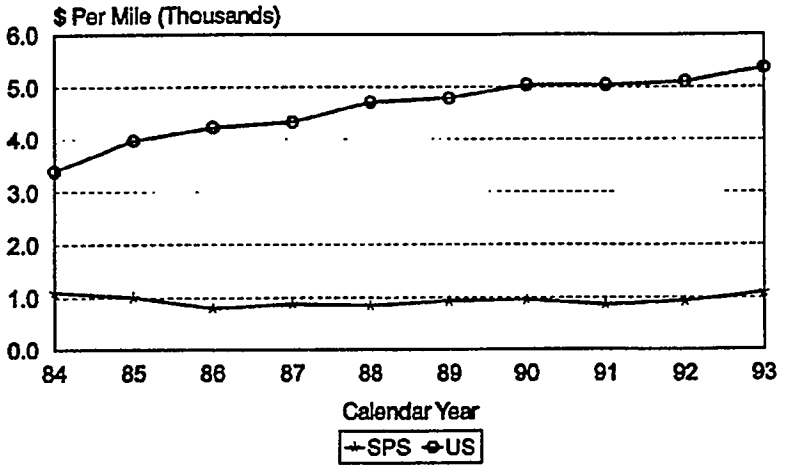
Transmission O&M Expense Per Line Mile

Southwestern vs U.S. Median



Source: 1994 UDI Database

Graph #4

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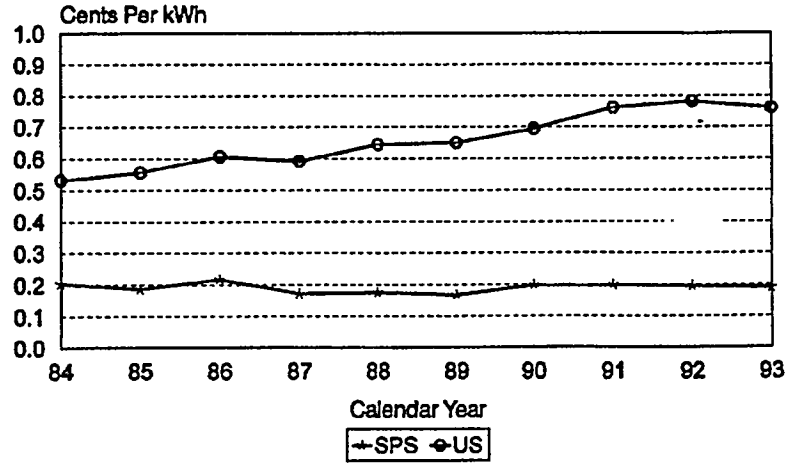
COMMENT LETTER

Total Production Expense (Non-Fuel) To Net Generation

Southwestern vs U.S. Median



Source: 1994 UDI Database

Graph #3

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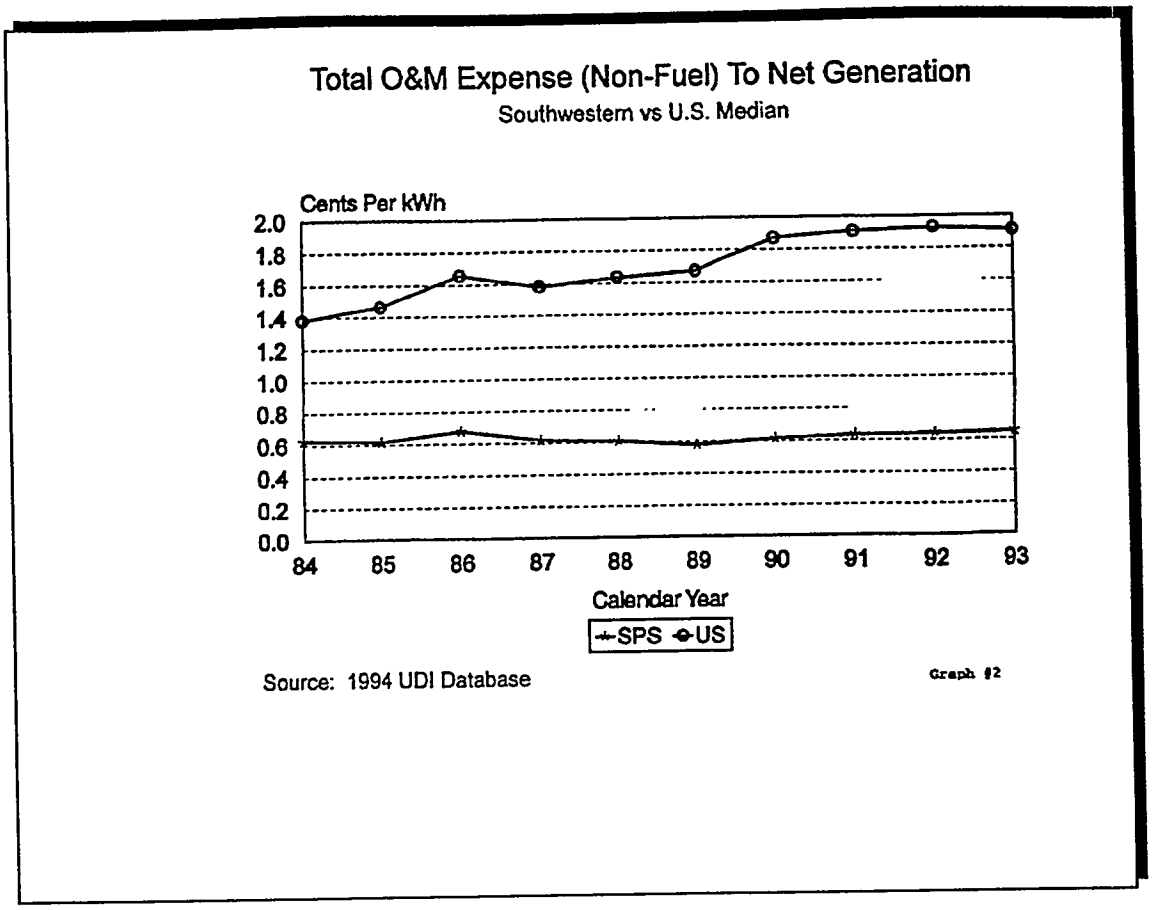

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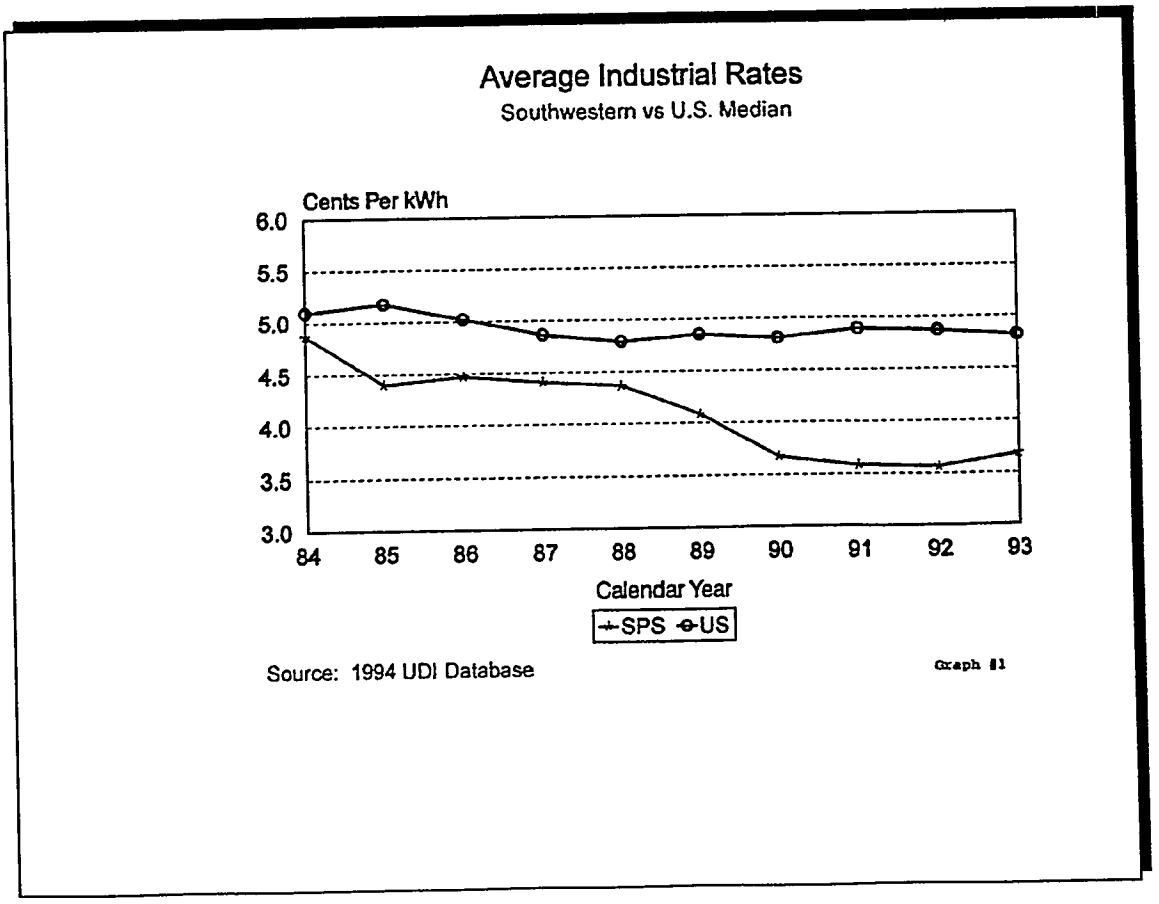

TSR–F–036
COMMENT LETTER

cost for electric power would be 3.2 cents/kWh (including fuel cost). Siting of accelerator and recycling plants at the Pantex facility provides the DOE the opportunity to operate very reliably and economically.

- As mentioned, SPS has been working with some of the DOE's subcontractors and research partners who are examining the accelerator's operating characteristics. SPS understands the APT technology lends itself very well to interruptible power. By fulfilling all, or part, of the accelerator's energy requirements with interruptible power, the DOE's average cost would be less than purchasing exclusively firm power. Interruptible power can be used without adversely affecting the production of tritium and would minimize the accelerator's impact on the generating resources of both SPS and the Southwest Power Pool.

- SPS, and thus the Pantex plant, is geographically located within the West Central Sub-Region of the Southwest Power Pool. The Southwest Power Pool is part of the "Eastern Grid" as shown in Figure #1. SPS also is directly interconnected, with two Direct Current (DC) ties, with utilities located in the Western Systems Coordinating Council (WSCC), which is part of the "Western Grid". DC interconnections allow for the transfer of electric power between two asynchronous transmission systems.

3/02.04
continued

While SPS is not a member of the Electric Reliability Council of Texas (ERCOT), SPS does have access to ERCOT through the Southwest Power Pool. Siting of the Tritium Supply and Recycling Operation at the Pantex facility will provide the DOE with access to all these vital market areas and generation resources, whether reactor *or* accelerator technologies are chosen.

- Section 4.1.2 of the DPEIS states, "For the purpose of analysis, electricity generation is based on the assumption that electricity would be supplied by the power pool currently supplying the facility in question... " It has come to our attention that the pool's *sub-regions*, rather than the entire power pool or reliability council, have been used in the analysis of each site under consideration.

  We believe it would be more appropriate to perform the analysis based on the entire power pool or reliability council, not sub-regions. SPS is a member of the West Central Sub-Region of Southwest Power Pool. However, the Northern Sub-Region of the Southwest Power Pool is within 100 miles of SPS's service territory. Therefore, the entire Southwest Power Pool should be considered as a potential resource in serving the tritium supply and recycling operation at Pantex.

I - 4

- Section 4.8.2 of the DPEIS contemplates the need for a dedicated coal- or natural gas-fired power plant for the accelerator. Dependence on on-site generation as the sole supplier of electric power to the accelerator could adversely affect the accelerator's overall reliability. It also appears unrealistic to assume that on-site generation will be able to cope with the cyclical nature of accelerator operation.

3/02.04
continued

Rather than relying upon a dedicated coal- or natural gas-fired power plant for the accelerator, the DOE should interconnect with SPS's transmission system. Such an interconnection would avoid the environmental impacts of added generation capacity. SPS can bring multiple generating resources to bear, and our interconnections with neighboring power pools would significantly improve the accelerator's reliability.

5/15/95

SECTION I

Electricity Supply for DOE's Tritium Mission at Pantex Plant, Amarillo, Texas.

TRITIUM SUPPLY TECHNOLOGIES AND THE PANTEX SITE:

- Southwestern Public Service Company realizes the DOE is considering all tritium production technologies in order to find the safest and most cost effective means to provide an element critical to the security of our nation. SPS welcomes the opportunity to serve and assist the DOE in the analysis of the Pantex site and the reactor and accelerator technologies.

1/13.08.01

In the late 1970's, SPS was engaged in a partnership with the DOE to develop a High Temperature Gas-Cooled Reactor for the Texas Panhandle. SPS has examined each of the reactor technologies proposed for use in generating electric power and believes they can accomplish the DOE's goals in an environmentally safe manner. Two reactor technologies, the MHTGR and the ALWR, would provide additional electric power generation capacity to our area. The additional capacity could work in well with our generation resources as our system load is expected to grow over the next few decades.

- SPS notes the APT technology provides the advantage of producing tritium with minimal production of nuclear and hazardous waste. We have worked with several of the DOE's subcontractors over the past two years to help determine the impact of a large accelerator on our transmission system. Our assessment is that APT technology would perform very well within our power system. Because essential study and analysis of the APT technology is still needed, we expect to accommodate possible, perhaps inevitable, design modifications. Please consider our company's services and resources at your disposal as research and development on the APT continues.

- The Pantex location will provide the DOE with convenient access to the Los Alamos National Laboratory in Los Alamos, New Mexico, and Sandia National Laboratories in Albuquerque, New Mexico.

  An example of the cooperation between the DOE, the State of Texas and the Pantex plant is the new federal research facility, the Amarillo National Resource Center for Plutonium. The Higher Education Consortium,

consisting of the Texas A & M University System, Texas Tech University, and the University of Texas System, will operate the center.

- One of our main concerns is the process of preparing the Cost Analysis Report for the various sites and technologies. This report will have an enormous impact on the decision making process. SPS requests permission to review the Cost Analysis Report for correctness and accuracy, and to report to the DOE any errors or inaccuracies found *before the siting or technology decision is made.*

2/16.14

SUPPLY OF ELECTRIC POWER TO PANTEX SITE FOR TRITIUM SUPPLY TECHNOLOGIES:

SPS has an excellent reputation throughout our industry as a provider of environmentally clean and economic electric power. While it is impossible to accurately predict the price of electric power in 15 to 20 years, we believe a company's past performance is an excellent indicator of future performance. Table #1 below shows SPS's rank and percentile among the nation's 150 investor-owned utilities for 1993:

TABLE #1

SPS vs All Other U.S. IOU's (1993)	SPS Percentile Rank	SPS U.S. Rank (out of 150)	Graph Number
Lowest Average Industrial Rates	11	16	1
Lowest O&M Expenses	3	5	2
Lowest Production Expenses	1	1	3
Lowest Transmission O&M Expenses	3	5	4

3/02.04

As Graph #1 (attached) shows, the average cost of electric power sold to our industrial customers has decreased at a rate well below the national average. Graphs #2, #3, and #4 show that SPS has performed very well by keeping our expenses low. Low construction and operating costs are what keep the rates to our customers low.

SPS has considerable experience in serving large industrial customers, wholesale customers, and bulk marketing of electric power to off-system customers. Of all kilowatt-hours sold in our 1994 fiscal year, 62% were sold to such customer classes.

Should the APT be sited at the Pantex plant, the DOE would have the opportunity to purchase economical electric power from SPS. Based on our existing firm power tariff and the energy use for the APT and tritium recycling plants estimated in the DPEIS, Tables 3.4.2.4-2 and 3.4.3.1-2, the average

SOUTHWESTERN PUBLIC SERVICE COMPANY
P. O. BOX 1261 • AMARILLO, TEXAS 79170 • 806/378-2121

DAVID M. WILKS
SENIOR VICE PRESIDENT

May 15, 1995

Mr. Stephen M. Sohinki, Director
Office of Reconfiguration
PD-25
U.S. Department of Energy
P.O. Box 3417
Alexandria, VA 22302

Dear Mr. Sohinki:

Southwestern Public Service Company, the electric service provider for the Pantex Plant near Amarillo, Texas, supports the Department of Energy's determination to supply tritium for our nation's nuclear arsenal. We believe the Pantex Plant would be the superior choice for the proposed tritium supply and recycling facilities, and encourage the Department of Energy to locate the tritium mission at Pantex.

I am enclosing written comments on the "Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling," to complement the brief remarks we filed following the public hearing on the draft statement in Amarillo on April 20, 1995. Our additional comments are in two sections. The first section relates primarily to electricity supply needs described in the draft document. The second section addresses environmental impact issues related to siting the mission at Pantex.

Southwestern Public Service Company and its subsidiaries are uniquely positioned both to provide truly economic electric service to Pantex for the tritium mission, and to offer transmission and other services for the production and/or sale of any excess electrical power produced at the site. We will be delighted to continue joint studies of electrical supply options for the tritium mission with DOE and its contractors.

May 15, 1995
Page "2"

We appreciate the opportunity to participate in the important deliberations with which you and your office are charged, and wish you the best in your deliberations.

Sincerely,

David M. Wilks

Attachments: Sec. 1
Sec. 2
Transmittal by Electronic Memo & USPS

TSR–F–034
COMMENT LETTER **PAGE 1 OF 1**

5/15/95

To:
Julie Howard fb

From: M.T. Byrne AD-25

1/18.01 Dreceived a phone call today from Eleanor MacLellan, Boston, Mass. She wanted to give me a verbal comment for the draft PEIS on Tritium Supply and Recycling. She does NOT want to ~~be~~ have her name placed on the mailing list Her comment: "Do NOT produce ANY more tritium ever!

TSR–F–035
COMMENT LETTER **PAGE 1 OF 1**

United States Department of Energy
P. O. Box 3417
Alexandria, VA 22301

Tritium Supply and Recycling Programmatic Environmental Impact Statement Comments.

1/15.01 Before making my comments on the Impact Statement I would like to offer feedback on the public hearing format. I attended the hearings held in the Community Center in North Augusta, SC. I found the discussion leaders and the facilitator patient, open, and very flexible. I honestly believe that they were striving for and promoting open comments. As a citizen I appreciate their presentation and the thoughts of others in the hearing. Also the general overview and handout materials were very informative with out being too technical or complicated.

My comments center around the basis used to evaluate the different alternatives. In both the Technology Workshop and the Environmental Impact Discussion Group comparison charts were provided that compared resource requirements and waste for each Tritium production alternative. What is not included, that I think is extremely important in any comparison, is the impact that each site has to these factors.

2/16.05 An example is legacy materials that are currently being processed and will continue to be processed in the future. If these materials can be used to fuel a reactor than the overall impact of processing these legacy materials significantly affects each alternative and even more significantly affects the choice of sites, because processing these materials will be done anyway. If the material can be processed at a site with existing facilities and shipped a short distance to a reactor the waste will be significantly reduced as compared to using an accelerator which cannot use the fuel. This waste reduction is not included in the alternative studies but at the bottom line the impact to both the environment and to the cost is major and should be included in the analysis to provide the DOE and the taxpayer the overall bottom line comparison for each alternative.

3/13.09.01 If site factors like the processing of legacy materials are included in the analysis I believe that Savannah River Site, and a light water or heavy water reactor will be the alternatives of choice from both environmental & financial considerations.

Sincerely,

J. B. Snyder

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 1
To Tritium Supply & Rec. | From Jay Snyder
Co. | Co. BSRI
Dept. | Phone # 2-2035
Fax # 705.951.7223 | Fax # 2-3524

Water Resources

3/04.02.02 The water requirements for accelerator production at NTS are significant. Does DOE plan to study NTS basin recharge rates to clearly understand the amount of groundwater available to the project? We understand, but would like to confirm, that projected NTS future water use needs were considered in addition to current requirements and tritium supply requirements.

Electricity Demand

4/02.06 The electrical power loads would range from 62 Mwe to 566 Mwe. The power requirements, depending on the technology, would require additional transmission lines and additional supply. Nevada Power Company is assumed as the supplier. The proposal should consider Valley Electric Power Company as a primary source for NTS as well. In addition, the proposed Solar Enterprise Zone may offset environmental impacts associated with power generation by providing a "cleaner" source of electricity for some of the additional load requirements.

5/13.06.01 Again, we support locating the Tritium Production Facility at the Nevada Test Site. Thank you for the opportunity to comment on the draft PEIS. Please call me at (702) 482-8183 if you have any questions regarding Nye County's views on this issue.

Very truly yours,
NYE COUNTY, NEVADA

Les W. Bradshaw, Manager
Nuclear Waste Repository Project Office

LWB/jw

cc: William L. Offutt, Nye County Manager
Stan Sims, Nye County Assistant Project Administrator
Phil Niedzielski-Eichner, Governmental Dynamics, Inc.
George Blankenship, Planning Information Corporation
Jim Williams, Planning Information Corporation
Mal Murphy, Nye County Regulatory and Licensing Advisor
Nick Stellavato, Nye County On-Site Representative

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[31]Ibid.
[32]GAO, 1988 and Barker, Rocky. "Experts Weigh Four Designs", The Idaho Falls Post Register, April 24, 1988.
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[34]Ibid., pp. s-28 to s-30.
[35]Ibid., Vol. 2, , p. 3-36.
[36]Weida, William J., Regional Employment Impacts From Nuclear Waste Storage Projects At The Savannah River Plant, Energy Research Foundation, 1989.
[37]Weida, William J., Substituting Employment From Environmental Cleanup Of Defense Facilities For Jobs Lost Through Disarmament, A paper presented at the ECAAR Conference, Notre Dame, November, 1990.
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[42]Testimony of Secretary James Watkins to the Senate Armed Services Committee, op.cit.
[43]Cochran, Tom, Arkin, William M., Hoenig, Milton M., The Nuclear Weapons Databook, Vol. 2, Ballinger Press, Cambridge, MA. 1984.
[44]Draft Environmental Impact Statement for the Siting, Construction and Operation of the New Production Reactor, Vol. 2, op.cit., p. 3-51.
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[46]Barker, Rocky, "Tritium -- a quiet debate", The Idaho Falls Post Register, April 24, 1988.
[47]Barker, Rocky, "Witnesses differ on need for tritium", The Idaho Falls Post Register, November 10, 1988.
[48]"One on One", Defense News, May 2, 1988, p.38.
[49]Testimony of Secretary James Watkins to the Senate Armed Services Committee, op.cit.
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[51]Norris, Robert S., and Arkin, William M., The Bulletin of the Atomic Scientists, Vol. 51, No. 1, January/February, 1995, pp. 69-71.
[52]"Superpowers Sew Up arms Pact," The Idaho Statesman, Boise, Idaho, July 18, 1991.
[53]Friedman, Thomas, L. "Reducing the Russian Arms Threat," The New York Times, June 17, 1992.
[54]Norris, Robert S., op.cit.
[55]Ibid.
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NYE COUNTY

NUCLEAR WASTE REPOSITORY PROJECT OFFICE
P.O. BOX 1767 • TONOPAH, NEVADA 89049
(702) 482-8183 • FAX (702) 482-9289

May 15, 1995

Mr. Steve Sohinki
Director, Office of Reconfiguration
U.S. Department of Energy
P.O. Box 3417
Alexandria, VA 22302

RE: Draft Tritium Supply and Recycling Programmatic Environmental Impact Statement (PEIS)

Dear Mr. Sohinki:

Nye County would like to offer the following comments on the Draft Tritium Supply and Recycling PEIS.

Waste Management

1/10.18 Reactor technologies would generate from 7 (HWR) to 30 (MHTGR) cubic yards of spent nuclear fuel annually. One key concern is how DOE plans to ultimately dispose of the spent nuclear fuel (SNF). If Yucca Mountain is deemed a suitable site for geologic disposal, current projected disposal needs already exceed its capacity. The Idaho National Engineering Laboratory and Programmatic Spent Nuclear Fuel final EIS appears to only address how to manage DOE SNF over the next 40 years until final disposition options are available.

Socioeconomic Impacts

2/08.13 It would be helpful to clarify the basis for the calculation of the impacts to the NTS "Region of Influence" (ROI). The population and housing projections assume that people would reside in cities and counties in the same relative proportion as the existing population. Does the ROI include only specific portions of the four-county area surrounding NTS? What are the boundaries? The population estimates for Nye County (Volume II, Table D.3-25) appear to be understated. Please contact George Blankenship at Planning Information Corporation, at 303-839-8777, for current population figures.

because employment from constructing waste cleanup and management facilities is roughly twice that available from operating production facilities at the site.[36] Operational employment was similarly overstated for other potential reactor sites.[37]

In 1988, the Undersecretary of Energy claimed that a heavy water reactor at Savannah River would only generate about 400 long term operating jobs[38]-- about a third of the total in the 1991 DEIS--and this figure is probably much closer to reality.

Regional Impacts of Indirect Employment from a Tritium Reactor

Each direct job discussed in the previous sections results in additional (secondary) jobs in whatever region the NPR is constructed. A number of other jobs are also supposed to be derived from the technology developed in the local region. In particular, the DOE has publicized the commercial power applications of the MHTGR and the ALWR. However, a GAO report says the DOE created a false impression that the MHTGR would directly benefit commercial power technology. In fact, the program does not include technology transfer.[39] Further, since technology is completely portable there is little reason for any company to locate in the region where a tritium production source is located. The Stevenson-Wydler Technological Innovations Act of 1980 mandates the transfer of technology from government to private hands, but it does not permit constraints on the location in the United States where that technology is used.

[2]Draft Environmental Impact Statement for the Siting, Construction and Operation of the New Production Reactor, Vol. 1, US Department of Energy, Washington, D.C., April, 1991, p. 1-3.
[3] Hatfield, Mark O., The Plutonium Cushion -- A Report On U.S. Defense Plutonium Needs And The Hanford N Reactor, October, 1987, p. 4.
[4] Hatfield, Mark O., Op. Cit., pp. 4,5.
[5]Draft Environmental Impact Statement for the Siting, Construction and Operation of the New Production Reactor, Vol. 1, op. cit., p. s-1.
[6]Testimony of Secretary James Watkins to the Senate Armed Services Committee, April 18, 1991.
[7]Institute for Strategic Studies in Defense News, October 24, 1988.
[8]Norris, Robert S., and Arkin, William M., The Bulletin of the Atomic Scientists, Vol. 51, No. 1, January/February, 1995, pp. 69-71.
[9]McNamara, Robert S., "Nobody Needs Nukes," The New York Times, February 23, 1993.
[10]Holzer, Robert, "Report Urges Deep Defense Cuts," Defense News, August 16-22, 1993.
[11]O'Leary, Hazel, "Report to Congress on the Development of New Tritium Capacity," Department of Energy, Washington, D.C., June, 1993.
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[14]System 80+ Team Plan, Savannah River Site, Aiken, S.C., May, 1994, p.8.
[15]Ibid., p.9.
[16]Ibid., p.66.
[17]Ibid., p.70.
[18]Ibid., p.75.
[19]Chow, Brian G. and Kenneth A. Solomon, Limiting the Spread of Weapon-Usable Fissile Materials, National Defense Research Institute, RAND, Santa Monica, CA, 1993, pp. xvi, xvii.
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[21]Management and Disposition of Excess Weapons Plutonium, Committee on International Security and Arms Control, National Academy of Sciences, National Academy Press, Washington, D.C.; 1994, p. 3.4.
[22]Ibid., p. 5.
[23]Garwin, Richard L., Critical Question: The Value of Plutonium, presented at Cornell University, October 1, 1993.
[24]von Hippel, Frank, and Marvin Miller, Harold Feiveson, Anatoli Diakov, Frans Berkhout, *Eliminating Nuclear Warheads*, Scientific American, August, 1993, pp. 47,48.
[25]"Accelerator recommended as back-up to NPR", The Idaho Falls Post Register, Mar 20, 1989.
[26]Report says DOE misleads on NPR", The Idaho Falls Post Register, Nov. 10, 1989.
[27]Richert, Kevin, "NPR growth forecast exceeds expectations", The Idaho Falls Post Register, April 12, 1991.
[28]Draft Environmental Impact Statement for the Siting, Construction and Operation of the New Production Reactor, Vol. 4, op. cit., p. n-3.

Year: / Reactor Type	1	2	3	4	5	6	7	8	9	10	Total-89$	Total-95$
HWR												
SRS	5.3	5.3	10.6	17.6	24.4	30.9	52.9	147	45.6	10.6	350.2	420.6
All Others	8.6	8.6	17.1	28.6	39.5	50	85.7	238	73.8	17.1	567.1	681.2
ALWR												
SRS	8.6	8.6	17.1	28.6	39.5	50	85.7	238	73.8	17.1	567.1	681.2
All Others	13.9	13.9	27.8	46.3	64	80.9	177	386	120	27.8	957.6	1150.2
MHTGR												
SRS	2.1	2.1	4.2	7.1	9.8	12.4	21.2	58.8	18.2	4.2	140.1	168.3
All Others	3.4	3.4	6.8	11.4	15.8	20	34.3	95.2	29.5	6.8	226.8	272.2

Table 3
Annual Construction Spending
Reactor Options At Proposed Construction Sites
$ Millions

Columns one through 10 and the 1989 Total column in Table 3 all show the total amount of construction funds in 1989 dollars that would be spent in the region in which the proposed reactor is being built. The total amount of money spent is then inflated to 1995 levels. These figures are helpful in evaluating the overall economic impact on the host region because the number of direct jobs created by a reactor project is depressed to the extent money allocated to the project is spent outside of the region. This reduces the direct employment associated with the construction of the reactor, and it shifts reactor-related jobs to areas that will not bear the costs associated with having the reactor as a neighbor.

In 1988, the GAO estimated the total construction cost of the light water, heavy water and modular high temperature gas-cooled reactors as being $3.2 billion for the HWR, $3.6 billion for the MHTGR and $2.2 billion for a light water reactor at Hanford where the WNP-1 reactor could have been converted to produce tritium.[32] It is assumed that an additional $1 billion would be required to build an ALWR in another location. In Table 4, these numbers have been inflated to 1995 levels for comparison with the figures from Table 3. Based on these data, and depending on the reactor design chosen, somewhere between 4% and 29% of the reactor construction budgets will be spent in the local region.

NPR Type/Area	Regional Spending Millions of 95$	Construction Cost Millions of 95$	% Spent in Region
HWR Spending			
SRS	420.6	$3.9B	11%
All Others	681.2	$3.9B	17%
ALWR Spending			
SRS	681.2	$3.9B	17%
All Others	1150.2	$3.9B	29%
MHTGR Spend			
SRS	168.3	$4.3B	4%
All Others	272.2	$4.3B	6%

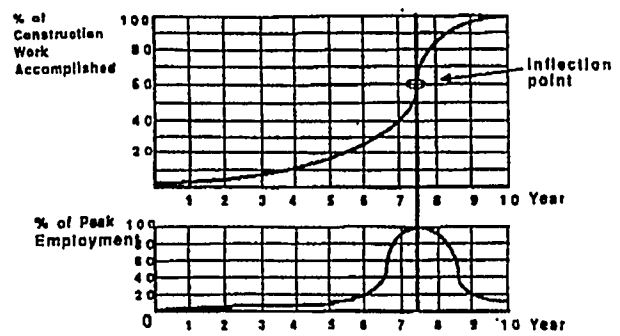
Table 4
Regional Construction Spending
Reactor Options At Proposed Construction Sites

In sum, the regional economic effects of the construction and pre-operation of most tritium reactor designs (the HWR and the MHTGR) will be relatively small over most of the 10 year construction period. A large influx of employees during years six and seven of the construction period and a correspondingly large decrease in employment during years nine and ten both indicate that the region in which the reactor is built will suffer a boom-and-bust scenario. This scenario is further supported by the in-migration figures forecast in the 1991 DEIS.[33] These figures show that the SRS region could expect to see about 3,300 people move in and out during the last four years of the construction of a HWR and the INEL region could expect to see 2,200 people move in and out during the last four years of the construction of a MHTGR.[34]

Regional Economic Effects of Operational Employment

The 1991 DEIS presented levels of operational employment at each site for each reactor type. The DEIS claimed this employment would vary from 1100-1400 for the MHTGR, 1500-1800 for a LWR and 800-1250 for a HWR. All these figures are misleading and overstate the operational employment actually associated with a tritium producing reactor.

For example, the 1991 DEIS listed operational employment figures for the HWR at SRS (1250 workers) that also included the work force required to concurrently operate all three of the K, L, and P reactors.[35] Further, the operational employment at the LWR and MHTGR both included an undetermined number of waste management workers. This significantly overstated the number of reactor operations workers



Source: 1991 DEIS Appendix N and Vol. 3, pp. 3-29 to 3-59 and author's calculations

Figure 4
Cumulative and Annual Employment Patterns
During Reactor Construction

Based on cumulative labor shown in the upper curve in Figure 4, one can derive the lower curve which shows incremental annual employment for constructing any of the three reactor projects. This curve shows annual employment, as a percent of peak employment, in each of the 10 years of the construction phase. For example, for an HWR, peak construction employment at all three potential sites is about 2,500 workers. This number of workers would be employed in year 8. In year 5, which has employment levels of 16.6% of peak employment, (.166)(2500) = 415 workers are employed in construction.

Using these calculations, annual construction employment for the three proposed reactor designs would be:

Year:	1	2	3	4	5	6	7	8	9	10
HWR Employment	90	90	180	300	415	525	900	2500	775	180
LWR Employment	146	146	292	488	672	850	1458	4050	1255	292
MHTGR Employment	36	36	72	120	166	210	360	1000	310	72

Source: Draft Environmental Impact Statement for Key Siting, Construction and Operation of Two New Production Reactor, Vol 4 US Department of Energy, Washington DC April 1991

Table 1
Annual Construction Employment
Reactor Options At Proposed Construction Sites

Of course, these annual employment effects will be substantially lower if it takes longer to build a reactor, and it is likely that the DOE has significantly underestimated the time required to build all proposed reactor designs. For example, the 1991 DEIS claimed that the HWR would be available in about eight years at SRS and in 10 years at the INEL. The first module of the MHTGR was estimated to be completed in seven years with additional modules completed at 6-9 month intervals after that. The LWR would be completed in eight years at SRS and nine years at INEL.[29] However, the GAO found that it will take 16 years to construct the MHTGR[30] and DOE officials at the INEL have estimated that the timetable might be 12 years. The GAO also claims that a SRS HWR would take 12 1/2 years to complete.[31]

Annual employment figures shown in Table 1 are directly linked to annual construction expenditures at each site. Based on the RIMS II input-output model developed by the U.S. Department of Commerce, $1 million spent on construction in the area in which the proposed sites are located will create the numbers of total jobs and direct jobs at the sites shown in Table 2.

Site	Total Jobs/$Million	Employment Multiplier	Direct Jobs/$Million
INEL	27.1	2.4	11.3
NTS	21.6	2.16	10.0
Oak Ridge	15.9	1.4	11.4
Pantex	21.8	2.04	10.7
SRS	26.8	1.58	17

Source: Regional Multipliers - RIMS II Economics and Statistics Administration, Bureau of Economic Analysis Washington DC May 1992

Table 2
Total and Direct Jobs At Each Potential Reactor Site
Per $1 Million Spent On Construction

Note that at all potential sites except Savannah River, between 10 and 11 jobs are created for each $1 Million spent on new construction at the site. At SRS, 17 jobs are created. Based on these calculations, spending during construction of each of the proposed sites would be:

Appendix

Potential Socioeconomic Impacts From Construction and Operation of a Source For Tritium Production and The Effect Of Such a Project on the U.S. Tritium Stockpile

William J. Weida
Economists Allied For Arms Reduction
Professor of Economics
The Colorado College

May 5, 1995

Regional Economic Impacts From Building And Operating Reactors To Produce Tritium.

Employment Calculations

The 1991 employment calculations for construction and pre-operation of a tritium reactor were contained in Appendix N of the Draft Environmental Impact Statement for the Siting, Construction and Operation of the New Production Reactor (DEIS). These calculations are wrong for two reasons:

First, a present value calculation was used to estimate total person-years of employment. Present value is a financial concept, not a labor concept, and using an accumulated present value to calculate employment is based on the faulty assumption that wages and hours worked will appreciate or depreciate at the same rate as capital.

Second, the accumulated present value is entirely dependent on the assumed period of construction and pre-operation. The GAO found that projected construction schedules were unrealistic and projected costs were overly optimistic.[26]

As a result, calculations of total person-years of employment are totally useless to regional planners and appear to only be capable of creating misinformation concerning actual employment associated with building a tritium production reactor. In fact, the erroneous employment calculations in the 1991 DEIS were even questioned by DOE officials at the INEL.[27]

Annual Employment and Spending Impacts From Reactor Construction

According to Appendix N of the DEIS, employment associated with NPR construction occurs in the following manner:

"We have divided each project into ten series. Each series number corresponds to one year of construction. Sixty percent of the work is done in the first three-quarters of the total time period, and 40% is completed in the last one-quarter, immediately after the peak. A sharp increase from the early years of the project to the peak is followed by a gradual decline."[28]

The total effort calculations in Appendix N which are based on this employment curve are incorrect. However, the basic employment curve can be used to calculate the annual employment associated with construction of each of the NPR options. Figure 4 shows the cumulative employment curve described in Appendix N.

Require Less or No Tritium." However, Defense Programs does not deny and knows full well that new nuclear warheads are on the drawing boards and in Congressional budgets.

10/13.00.16 continued

DOE also rejects "Use of Commerical Reactors." This seems like a correct decision, although the proliferation risks of building a new tritium production facility may outweigh the risks of deciding not to use commercial light water reactors except in the event of a national emergency. Nashville Peace Action would certainly prefer other nations to make a choice for not building a new nuclear weapons facility.

11/18.01

Because the United States has a reserve tritium supply that could carry the arsenal from 2010 to beyond 2015, the federal government actually has twenty years to negotiate further arms reductions. Such a time frame gives the United States plenty of room to put off decision.

VII. ENVIRONMENTAL IMPACTS

As DOE notes, under the "NO ACTION" alternative, "there would be no impacts..." to human health or natural resources.

12/11.01.03

Nashville Peace Action is glad to see that DOE admits that fatal cancers could result from the operation of a new tritium production facility, especially one involved in an accident. Of course, we are dismayed that DOE would continue to sacrifice lives in the name of national security--but at least people could have a better idea of the risk of working at and living near such a facility.

The accuracy of DOE's figures are suspect. Without independent analysis, the public continues to mistrust DOE's numbers, even if accurate under the particular computer program used. In addition, DOE fails, as in other documents, to consider diseases other than cancer fatalities. Tritium causes birth defects, among other problems, and DOE should examine what other health effects a new tritium production facility would have upon populations.

CONCLUSION

Various individuals, from the Director of U.S. Space Command General Charles Horner to former Secretary of Defense and somewhat unpopular Robert McNamara, believe that the U.S. nuclear weapon arsenal is obsolete and/or could be reduced dramatically.

13/18.15

While DOE does not have final authority over whether or not a tritium production facility should be built, it should make the case with the Nuclear Weapons Council that the U.S. does not need

13/18.15 continued

to make an immediate decision. An immediate decision to build, moreover, could be a dangerous move for the United States in a time when we are trying to achieve non-proliferation.

Our hope is that a changing world will make this tritium production facility obsolete. History has been on our side so far, and we trust that it will be again.

cc: Dr. Harold P. Smith, Jr., Nuclear Weapons Council
Senator Bill Frist, Tennessee
Senator Fred Thompson, Tennessee
Representative Bob Clement, Tennessee 5th District

2/13.00.14

- The flexibility of each technology to respond to future changes in the tritium supply requirements should be addressed in the PEIS. It appears to be prudent, with the current uncertainty in the rate of nuclear weapons reductions and unrest in foreign countries, that the chosen technology should be flexible to respond to extremes of tritium supply with minimal impact on cost to the taxpayer. That is, with no tritium supply requirements, the chosen technology could be used to make electricity, medical isotopes, etc., cost effectively. At the other extreme, if the tritium supply requirements are doubled relative to the current base case, during the design portion of the project the chosen technology should be capable of responding to these needs. Under no circumstances should the taxpayers be asked to fund another study and another technology if the tritium supply requirements change. Bottom line - the what ifs relative to the tritium supply should be addressed in the PEIS.

William F. Briaux
5 Pine Needle Circle
Aiken, SC 29803

3/11.00.02

- Under human health risks, the number of cancer fatalities per year for the APT versus the other technologies appear to be misleading. The APT considers only the risks associated with construction of the facilities, whereas the risks associated with the other technologies include both the construction and operational risks. Please include in the PEIS the risks associated with constructing and operating the electrical source to power the accelerator, whether the source is coal fired or nuclear powered.

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Aiken, SC 29803

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY 30 1995

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

Mr. Stephen Sohinki
Office of Reconfiguration (DP-25)
United States Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Mr. Sohinki:

The Environmental Protection Agency (EPA) has reviewed the Department of Energy's (DOE) Draft Programmatic Environmental Impact Statement (PEIS) for Tritium Supply and Recycling. Our review is provided pursuant to the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.) and Section 309 of the Clean Air Act.

The draft PEIS evaluates alternatives for new tritium supply and recycling facilities composed of four different tritium supply technologies at five potential locations. In addition, it evaluates the potential impacts of using a commercial reactor and a multi-purpose reactor. The EPA review does not assess the need for tritium production facilities to support our national defense. Our review includes: the environmental impact ratings of each technology at each site; a discussion of an environmentally preferred technology, tritium recycling, and site attributes; followed by detailed comments (Enclosure 1). Also refer to applicable comments in EPA's previous comment letters concerning the PEIS for the Reconfiguration of the Nuclear Weapons Complex and the New Production Reactor.

Ratings:

By separating the programmatic issues from the site-specific, DOE has developed a clearly written and well organized PEIS. Since there is no preferred alternative, we have individually rated the technologies: Heavy Water Reactor (HWR), Advanced Light Water Reactor (ALWR), Modified High Temperature Gas Cooled Reactor (MHTGR), and the Accelerator Production of Tritium (APT), at the five potential sites: Savannah River Site (SRS), Oak Ridge Reservation (ORR), Idaho National Engineering Laboratory (INEL), Pantex Plant (Pantex), and Nevada Test Site (NTS), based on the potential environmental

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impact of the action. The ratings fall into three categories: Lack of Objections (LO), Environmental Concerns - Insufficient Information (EC-2), and Environmental Objections - Insufficient Information (EO-2). An explanation of EPA's ratings is provided in Enclosure 2.

The No Action Alternative is rated LO. The Commercial Reactor Alternative is rated EO-2 because of the safety concerns associated with potential reactor embrittlement during the operational period until 2050. The following matrix summarizes our ratings for the remaining alternatives:

	HWR	MHTGR	ALWR	APT
SRS	EC-2	EC-2	EC-2	EC-2
ORR	EC-2	EC-2	EC-2	EC-2
INEL	EC-2	EC-2	EC-2	EC-2
PANTEX	EC-2	EC-2	EC-2	EO-2
NTS	EC-2	EC-2	EC-2	EO-2

The APT at Pantex and at NTS are rated EO-2 because of potential groundwater and aquifer recharge issues. The detailed comments in Enclosure 1 provide the rationale for the ratings. Generally, the level of detail provided in the draft PEIS is adequate for a draft, programmatic document, with the exception of the issues delineated in Enclosure 1 which require supplemental environmental information for the final PEIS.

1/13.04.01 Technologies: We strongly endorse the APT technology combined with tritium recycling as the most environmentally preferred technology. The APT would provide the greatest safety with little risk of environmental accidents. The technology would minimize waste production by not generating spent nuclear fuel, and would generate the least amount of low level waste of all the technologies. To minimize potential environmental impacts, this alternative would optimally be located in a geographically stable area, with adequate water and energy infrastructure. Because of the potential water impacts, design optimization and water conservation are important. On-site recycling would allow for consolidation of resources and a steady supply of high specific activity tritium until the completion of the accelerator. Operation of any of the reactor technologies would have a greater potential for environmental contamination and generation of waste products than the APT.

2/13.00.39 Tritium Recycling: Tritium recycling at any facility other than SRS will require construction of new facilities. At SRS the current facilities would require upgrading but would impact no additional acreage. Pollution prevention and cost considerations would, presumably, be substantially reduced by the use of this facility for recycling.

3/12.03 Sites: Each of the proposed sites has a unique set of environmental challenges to mitigate if a tritium supply facility is constructed and operated on it. All sites have the potential to impact on the habitat of flora and fauna. If SRS is chosen DOE will need to minimize impacts on the natural flow of surface and ground water. Both the NTS and Pantex Plant have the potential for aquifer drawdown if the accelerator technology is selected, and have the potential to impact the habitat of threatened and endangered species. If reactor technology is selected, Oak Ridge Reservation has the greatest potential to impact the off-site population should a severe accident occur. NTS is also located in a tectonically active region and would require the largest amount of infrastructure upgrades. The INEL site does not appear to have any significant discriminating environmental attributes associated with it.

4/16.23 Each of the alternative technologies and sites have environmental impacts that will need to be further evaluated and mitigated in future NEPA documentation. The ratings of the programmatic alternatives do not preclude the possibility of future, potentially significant, environmental impacts that may arise when tiered, site-specific, NEPA analyses are done.

Thank you for the opportunity to comment. If you have any questions, please contact Susan Offerdal at (202) 260-5059.

Sincerely,

Richard E. Sanderson
Director
Office of Federal Activities

Enclosures

DETAILED COMMENTS ON THE DOE TRITIUM SUPPLY AND RECYCLING DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

General:

5/10.37 We are extremely supportive of the Department of Energy's (DOE) efforts to reduce its hazardous waste generation and encourage DOE to include appropriate waste minimization commitments as an integral component of the proposed course of action in the project's Record of Decision.

6/11.02.06 We recommend that the final PEIS include more information on Emergency Preparedness for each site, especially if a reactor technology is chosen as the preferred alternative. Decontamination and decommissioning (D&D) were briefly addressed in the draft PEIS. We recommend that the final PEIS include more D&D information concerning the proposed technologies and highlight any impact differences among the technologies. For clarity to the public, we suggest that the final PEIS explain why the annual average doses to a site worker differ for each of the five proposed locations.

7/12.08

8/11.01.19

9/03.03 We found no mention of the proposed action's impacts on global climate change. In the Department of Energy's draft PEIS on the New Production Reactor it indicated that if the electrical power for the NPR were fossil fuel generated, then the combustion could produce "...about 0.01% of the total U.S. emissions of the gas (carbon dioxide) with potential significant cumulative effects on global warming." We recommend a clarifying statement concerning potential project impacts on global climate change.

10/06.11 As a newly-constructed facility, a tritium recycling operation would require radionuclide National Emission Standards for Hazardous Air Pollutants (NESHAP) approval by the Environmental Protection Agency (EPA). If applicable to the site, EPA would evaluate the Endangered Species Act (ESA) as a part of its radionuclide NESHAP decision-making process, i.e., EPA would assess whether radioactive emissions permitted under a NESHAP authority would adversely affect any listed species under the ESA. As a part of this determination, EPA would consult with the US Fish and Wildlife Service (USFWS) pursuant to Section 7 of the Endangered Species Act. Should the DOE also need to consult with the USFWS, EPA is willing to work with DOE on a joint consultation effort.

11/04.02.06 Salt deposition from cooling towers may impact ground water quality. Salt was not addressed as a potential source of groundwater contamination. The PEIS should address the potential effects of supply and recycling activities on downstream and downgradient public-water supply systems. The PEIS presents statements that appear to be technically unsupported. We recommend further clarification on the following examples:

Enclosure 1

12/06.06

- The document states that impacts to wetland and aquatic resources will not occur, because these resources are not located on project sites. The conclusion that impacts will not occur may be incorrect; impacted on-site groundwater will flow off-site and may affect off-site biotic resources.

- On p. 4-139 the PEIS states that because impacts from construction occur only at the beginning of the project life cycle, it follows that impacts to biotic resources will be limited to only that time period. This may not be true.

13/06.09

- The PEIS notes that no impact to biotic resources will result from supply and recycling activities. For example on p. 4-64 it states, "...the Townsend's western big-eared bat could forage at evaporation and stormwater retention ponds. No adverse impacts are expected..." This statement is not supported by any factual data.

Savannah River Site (SRS)

14/04.02.09

Ratings: Each technology sited at the SRS is rated EC-2, Environmental Concerns - Insufficient Information, due to insufficient evaluation of the effects of the proposed technologies on groundwater contamination and groundwater movement. The need for excavation and dewatering for the APT technology, as well as the gas cooled reactor, may lead to upsets in the natural flow of surface and groundwater. Mitigation and monitoring will be extremely important to ensure that there is no potential for significant flow of contaminants into the construction area because of the extensive groundwater contamination already present at the site.

15/02.07

The PEIS does not propose to use the existing natural draft cooling tower, constructed for the K-reactor. The final PEIS should consider the use of this facility, if technically feasible, because of pollution prevention considerations. Under the mitigation section (p. 4-432), the PEIS states that the existing treatment facilities could be used. We recommend that these facilities (e.g., liquid low level waste processing facilities, the saltstone process, proposed Consolidated Incineration Facility) be maintained and upgraded as a preferable alternative to constructing new facilities.

Oak Ridge Reservation (ORR)

16/04.01.04

Ratings: Each technology sited at the ORR is rated EC-2, Environmental Concerns - Insufficient Information. Our concerns include: adverse impacts to East Fork Poplar Creek (EFPC); cumulative impacts to and safety issues involving the surrounding population; and proximity to a Prevention of Significant Deterioration Class I area, the Great Smoky Mountains National Park.

DOE is currently involved with remediation of EFPC under the Comprehensive Environmental Response, Compensation, and Liability Act because EFPC was contaminated by past releases from the Y-12 plant. Significant clean-up activities are required on- and off-

16/04.01.04 continued

site. Any activities (e.g., cooling tower blowdown) involved with tritium production that include discharges to EFPC causing scouring, erosion, and flooding may be unacceptable and contrary to the goals of the remedial activities.

17/08.09

The size and surrounding population density of the ORR relative to other DOE candidate sites should be a consideration in assessing cumulative impacts. Also, relative population density maps would be helpful. The proximity of the Great Smoky National Park, a Class I area, to ORR may involve significantly more stringent mitigation for air resource impacts. We recommend that this be noted in the impacts section of the PEIS.

18/03.05

Idaho National Engineering Laboratory (INEL):

19/04.02.04

Ratings: Each technology sited at the INEL site is rated EC-2, Environmental Concerns - Insufficient Information. If the accelerator technology is selected, additional information concerning the groundwater supply impacts on the Snake River Plain Aquifer would be appropriate. Although no state biotic resource consultation was identified in Table 5.3-4, we would recommend that DOE confer with the appropriate state authorities to minimize impacts.

20/06.09

Pantex Plant

Ratings: The following ratings are given for the alternative technologies sited at the Pantex Plant: APT - EO-2, Environmental Objections - Insufficient Information, due to potential adverse effects to groundwater levels in the Ogallala aquifer and insufficient information in evaluating the effects on plume migration; HWR, MHTGR, and the ALWR - EC-2, Environmental Concerns - Insufficient Information, due to insufficient evaluation of the effects of the proposed technologies on groundwater contamination and groundwater movement in the perched aquifer and Ogallala aquifer.

21/04.02.01

Page 4-305, Section 4.5.3.4 Groundwater Quality: Recommend clarifying the last sentence in the first paragraph which states that withdrawal from the aquifer would have little effect on plume migration. It is understood that initial operation of any tritium facility would not occur until 2010. However, Pantex is currently in the process of evaluating groundwater contamination in both the perched and Ogallala aquifers. It is already known that extensive groundwater contamination is present in the perched aquifer with limited evaluation of the Ogallala aquifer.

Since the City of Amarillo's well field has already created a cone of depression that has altered the groundwater gradient, it follows that additional extraction of groundwater from the Ogallala could exacerbate this problem. Since the flow dynamics between the perched aquifer and the Ogallala aquifer are not fully understood at this time, it may be difficult to determine what difficulties may exist if Pantex is required to begin remediation of groundwater at the site.

If Pantex has to remediate groundwater for a long period of time, the additional wastewater that discharges into the adjacent playas could possibly push contamination further out than has already occurred due to increased head. In addition, if contamination is identified in the Ogallala, or if it is found that groundwater can migrate from the perched aquifer to the Ogallala aquifer, the additional groundwater extraction from the Ogallala aquifer could result in contamination becoming closer to city wells. The document lists current water quality data for surface water bodies and for groundwater but does not adequately describe how the composition of the water discharged to the playas will change under the proposal and how those changes, if any, will affect the groundwater.

21/04.02.01 continued

Until the Pantex facility has completed groundwater modelling efforts and has had an opportunity to evaluate the effects of increased withdrawals from the Ogallala and increased discharges to the playas, we believe that it is an unsupported and premature conclusion that there would be little effect on plume migration.

In addition, if the APT technology is selected for use at Pantex, it may require up to 2,656 million gallons per year (MGY) of additional withdrawal from the Ogallala aquifer, or up to 1,997 MGY with operation of a Phased APT. These levels of withdrawal would adversely affect declining aquifer levels and is stated as such in the PEIS. The Ogallala aquifer is under heavy usage by the existing plant, by irrigators and the city of Amarillo. Additional pumpage from the aquifer will further aggravate any current shortages of water in this area. In addition, overpumping of groundwater at some localities in the United States, and especially in drier areas, has been known to result in the lowering of water quality because of intrusion of naturally saline water from deeper zones. For these reasons, we believe that the Pantex plant may not be a desirable site for expanded operations.

22/10.34

Page 4-288, Section 4.5.2.10 Waste Management: The last sentence in the third paragraph which begins, "In September ..." is incomplete. After the second sentence, the text should be modified to add, "after the public comment period on the proposed listing for Pantex, the NPL ranking score increased from 34.42 to 51.22."

Nevada Test Site (NTS):

Ratings: The following ratings are given for the alternative technologies sited at the NTS: APT - EO-2, Environmental Objections - Insufficient Information, due to the potential impacts associated with the groundwater withdrawals exceeding the lowest estimated aquifer recharge rate during operation; HWR, ALWR, and MHTGR are rated EC-2, Environmental Concerns - Insufficient Information.

23/04.02.02

The PEIS identifies the operational groundwater needs for the APT requiring 2,656 MGY (i.e., 2.656 Billion Gallons Per Year); and a phased APT requiring 1,705 MGY (1.705 Billion Gallons Per Year). The PEIS states that the total annual recharge to the regional aquifer under the entire test site is estimated at approximately 4.1 billion gallons per year (BGY), however, in the vicinity of the proposed tritium facility, the annual recharge is

23/04.02.02 continued

lower, an estimated 2.3 BGY. Thus, under the fullscale APT, groundwater would be pumped faster than it is recharged in the vicinity of the tritium facility. Under the phased APT, the tritium facility would consume 74% of the annual groundwater recharge in the immediate project vicinity. Either APT imposes a serious burden on the local groundwater regime, with the fullscale APT being particularly severe.

For all the Nevada action alternatives, we encourage DOE to ensure the project's consistency with the State of Nevada's water protection laws. A copy of Nevada's draft proposed state water policy was mailed to Mr. Jay Rose, DOE headquarters, by EPA on April 26, 1995.

24/17.05

Table 5.3-4. (PEIS, Vol. I, p. 2 of 5): This table shows that a permit or permits will be required under Nevada state law "prior to construction or modification of a water discharge source." The PEIS table should be modified to reflect that a groundwater withdrawal permit is or will be required from the Nevada State Engineer.

25/08.21

The PEIS (Vol. I, pp. 4-477 and 4-478) discusses environmental justice considerations associated with the project, including maps depicting minority and low income population distributions in Idaho, Tennessee, Texas, and South Carolina, within 50 miles of the DOE proposed site. We recommend that a Nevada map be added because the 1990 US Bureau of Land Management Nevada state map shows the Las Vegas Paiute Indian Reservation located approximately 40 miles from the southeast corner of the NTS.

26/08.22

Page 4-478 states that any disproportionately high, adverse health or environmental impacts on low-income or minority communities "would most likely result from toxic/hazardous air pollutants and radiological emissions." Although we agree that such pollutants and emissions are highly significant, we suggest that the PEIS analysis be expanded to assess groundwater withdrawals for NTS technologies. In light of the tremendous importance of groundwater in the Western United States, we suggest that the PEIS assess any potential impacts to Native American communities and reservations associated with pumping groundwater, since the loss of groundwater to Native American populations can have a significant, adverse impact to agriculture- and livestock-based tribal economies.

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COMMENT LETTER

PAGE 9 OF 9

SUMMARY OF RATING DEFINITIONS AND FOLLOW-UP ACTION

Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of environmental quality, public health or welfare. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1-Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From: EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

Enclosure 2

TSR–F–050
COMMENT LETTER

PAGE 1 OF 1

06/08/95 THU 10:00 FAX 202 586 0467

06/08/95 11:38 2028587288 DP-40 → TETRA TECH 001

ECO-WATCH/SONOMA

May 12, 1995

Hon. Hazel O'Leary
Secretary, Department of Energy
1000 Independence Ave. S.W.
Washington, D.C. 20585

Re: Opposition to Proposed Tritium Plant

Dear Secretary O'Leary:

We are an environmental coalition and we are writing to express our opposition to the multibillion-dollar tritium plant that your Department proposes to build. It is our understanding that such a plant/reactor would have the function of producing a radioactive gas used to enhance the effectiveness of the American nuclear arsenal.

1/18.01 Secretary O'Leary, the majority of the world's nations are working toward indefinite extension of a treaty requiring signatories to work toward the elimination of nuclear weapons. The United States is a strong proponent of this treaty. At such a time, it is particularly hypocritical for the United States to construct the proposed tritium plant since such construction would send a clear signal that the United States intends to enhance, and not diminish, its own nuclear capability.

2/19.01 Furthermore, it is inappropriate to undertake such an expensive project when social services of all nature are being cut to the bone for lack of funding

Yours Truly,

Madeleine Sone
Charles D. Sone
Kimberley Witcher
Lucy Nelson
Larry Weiss

FAX TRANSMITTAL
To Mike Hound

Pocatello, Idaho
April 12, 1995

To our Department of Energy
Concerning the proposed Tritium production reactor

Briefly stated: Don't do it

1/18.01 We should practice what we preach. This Nuclear proliferation plan is bad policy. We would set an example that says it's all right to keep up these weapons of mass destruction.

What about this balanced budget we hear so much about?
Just shows how hypocritical that is.

I vote in all elections.
I have five wonderful grandchildren and have been married to the same man since 1945.

Please do me a personal favor; abandon this project, .

Sincerely,

Hilde Heckler
529 South 7th Ave.
Pocatello ID 83201

The DOE Tritium Supply and Recycling
Programmatic Environmental Impact Statement

Comments submitted by
Margo, Dennis and Jessie Proksa
5192 West Old Highway 91
Pocatello, Idaho 83204

April 12, 1995

The DOE tells us it has "nuclear weapons missions", and therefore "it must have an assured long-term source of tritium".

Well, many of this nation's taxpaying citizens don't want, or need nuclear bombs - so we say - we don't want the DOE to make tritium to make them more destructive.

1/18.01 Thankfully, since the cold war is over, we have seen the US and Russia cutback on the size of their nuclear arsenals. And we need to see even greater cutbacks negotiated in the near future.

If this nation starts making tritium it's going to be impossible to convince other nations to curb their interest in doing the same. In fact, we will be encouraging other nations to enhance their nuclear weapons production facilities so they can compete.

This is not the message we want to send... just as negotiations extending the Nuclear Non-Proliferation Treaty begin!

2/19.01 Who's paying for tritium production? Look out! 15 years of construction, and multiyear operations will wind up costing us billions of dollars. But of course the Congress is willing to slash the DOE's environmental management budget...Who needs radioactive waste cleanup and management?

Are taxpayers ready to pay for the DOE's current threat to build tritium production facilities? No way!

TSR–H–003
COMMENT LETTER **PAGE 1 OF 1**

203-K Landing Drive
Aiken, .S.C. 29801

April 20, 1995

Department of Energy
North Augusta Hearing

NEW TRITIUM SOURCE

1/13.00.05 I support the construction of a multipurpose reactor at the present Savannah River Site to provide a new source of tritium.

2/13.09.01 The space is available and well secured. We have the people trained in reactor technology. The local population enthusiastically support the nuclear facilities here.

Other possible tritium sources are experimental and would require additional research.

The reactor is most economical and practical.

Ralph F. Cullinan

TSR–H–004
COMMENT LETTER **PAGE 1 OF 1**

COLUMBIA COUNTY
New Horizons
BOARD OF COMMISSIONERS

April 20, 1995

HAND DELIVERED

Donald N. Bridges, Director
Reconfiguration and Planning Office
Department of Energy
Savannah River Operations Office
P O Box A
Aiken, South Carolina 29802

Dear Mr. Bridges:

The Columbia County Board of Commissioners unanimously supported the proposal to locate the site for the new tritium source facility at the Savannah River Site at their April 18, Commission meeting.

1/13.09.01 The Commission feels that Savannah River Site should be the selected site for all the possible tritium source technologies (reactors or accelerator) because of the tritium infrastructure already at SRS, their forty years of tritium production and handling experience, the unequaled safety record at SRS, the record of successfully performing difficult tasks from start to finish, and the overwhelming public support from our County for SRS.

If you have further questions regarding this matter, please contact our County Administrator Steve Szablewski.

Sincerely,

Patrick K. Farr, Sr.
Chairman

SS/pd

cc: Vice Chairman Pete Brodie
Commissioner Diane Ford
Commissioner David Titus
Commissioner Jim Whitehead

P.O. Box 498 • Evans, GA 30809 • Phone: (706) 868-3379 • Fax: (706) 868-3348

Marty Wade
9115 Cinnamon Ridge
Poc. Idaho
83204

In 1991 the DOE was planning a production reactor and assumed that the transuranic waste produced would go to WIPP, and the high-level waste and spent fuel rods would go to a federal repository. Today after how many millions of dollars, WIPP and YUCCA Mountain are still nowhere in the forseeable future.

The funding for a tritium factory should include the cost of disposing of the waste it produces.. I think that if the cost of waste disposal were really known and used in the cost estimate of producing tritium that the project wouldn't look practical.

1/20.01 Living next to an area that is being looked at as a great place to store the waste problem makes me aware that nuclear waste is an expensive problem and the DOE can't afford to solve it.

Why will funding for clean up be decreased by 9.2% in 1996? Will funding for production require the DOE to default on legally binding clean up commitments?

So much conflict exists, like balancing the federal budget, end of the cold war, possibilities for recycling, nonprolifferation treaties, and negotiated arms reductions. Conflicts like these outway the need for tritium.

There are real possibilities for decreasing international terrorism by reducing the world nuclear weapons stockpile. A tritium factory would not be progress.

Diana Y. Shipley
405 North Lincoln
Pocatello, Idaho 83204

April 12, 1995

To Whom it May Concern:

I am totally against a tritium producing bombs plant being built near here or any where else.

As I understand we already have a $328 BILLION project to clean up the existing nuclear waste so to add more waste to an already colossal problem is ludicrous and insane.

1/18.01 Also we are speaking words of non-proliferation to the world to stop bomb production in all nations so doesn't it seem rather hypocritical to be planning another huge bomb project ?!!

We need to develop technology to deal with existing waste and quit focusing on redundant projects like more bombs!

TSR–H–006
COMMENT LETTER

1/18.01 continued

Please wake up and hear this message!

NO MORE BOMBS!

Diana Y Shipley

TSR–H–007
COMMENT LETTER

307 N. Buchanan
Pocatello, Idaho 83204
April 8, 1995

To Whom It May Concern:

1/18.01

I cannot believe our government is even considering building a tritium plant, i.e. bomb factory, when we are in the process of trying to convince other nations to sign a nonproliferation treaty. In looking over my testimony for the NPR I feel that I can state the same arguments yet again.

When the issue of potential economic boon for Southeast Idaho is discussed it is stated as if that fact alone makes it okay to manufacture nuclear weapons for the destruction of people and our earth. An economic boon is not the point---bombs are.

INEL's safety record is usually held up to the public as if that fact alone makes it okay to manufacture nuclear weapons for the destruction of people and our earth. The INEL safety record is not the point---bombs are.

If we are desperate for a nuclear project for Southeast Idaho then let's become the world's leader in nuclear waste clean-up. Heaven knows we have enough nuclear waste already stored in Idaho to work on for centuries. Let nations look to us for solutions and answers. INEL stands for Idaho National Engineering Laboratory not Nuclear Munitions Plant.

When we discuss the environmental impact of this project we must also address the issue of environmental impact after the bombs are dropped. What will our water supply, our air supply, our food supply be like after the bombs have exploded? What will our water supply, our air supply, our food supply be like if we continue to keep producing nuclear materials for which we have no proven and effective way to clean up or store?

Please make a responsible decision and set aside these plans for continuing the destructive practice of producing yet more nuclear waste for which we have no answers for clean-up.

Sincerely,

Kaye Turner

Kaye Turner

House of Representatives
State of South Carolina

J. Roland Smith
District No. 84 - Aiken County
P. O. Drawer D
Langley, SC 29834

Committees:
Ways and Means
Ethics

416-B Blatt Building
Columbia, SC 29211

Tel. (803) 734-3032

April 19, 1995

The U. S. Department of Energy
Savannah River Site
Aiken, SC 29801

Dear Sir or Madam:

SRS's environmental cleanup mission, although essential, has a finite duration and a declining scope. SRS has tremendous resources to solve major DOE problems, including tritium source.

SRS is the only site that has in place the infrastructure, technology base and production base to integrate all of DOE's tritium functions with the addition of the new tritium source, the existing infrastructure, existing tritium recycle, extraction purification, waste management facilities, state-of-the-art emergency weather monitoring system, and state-of-the-art emergency operation center staff 24 hours a day.

SRS has 40 years of tritium production and handling experience, including application of and conformance to current nuclear safety standards. SRS and its talented and skilled workforce is uniquely qualified to do it for another 40 years with the experience, facts and figures. SRS is staffed by resident scientific/engineering experts who created current tritium technology. Hydride technology, now used for safe storage in handling of tritium, was developed at the Savannah River Site Technology Center. SRTC remains at the forefront of research, development and application of technologies necessary to operate tritium facilities safely and efficiently, meet the U.S. stock pile requirements for almost 40 years, perform more than 99% of all U. S. weapons loading, reclaimed 80,000 reservoirs, and provided tritium to Princeton, plasma, physics laboratories for fusion energy experiments.

1/13.09.01

SRS has an unequaled record of successfully performing difficult production missions from start to finish, while leading DOE and industry in safety performance. SRS has unmatched local public and political support for nuclear activities, including production-related missions. The surrounding communities and political leadership (from two states which fully support multiple DOE missions at Savannah River Site.)

SRS's new modern tritium recycling facility (replacement tritium facility) provides an excellent, flexible, existing anchor for the new tritium source to be consolidated around. Co-location of the new tritium source at SRS will result in significant savings (as much as $1 billion, by avoiding duplication of these assets at another site.) RTF is recognized within a new complex as a leader in large-scale application of

April 19, 1995
Page Two

hydride technology for safe handling of hydrogen isotopes. RTF took 8 years to build and test (1986-1994) at a cost of $400 million.

SRS is the only site that has the infrastructure, technology base and proven production record to integrate all of DOE's tritium functions, including the new tritium source. Whether the new source is an accelerator or a power reactor, it makes sense to site it at SRS. All types of tritium reservoirs have been loaded at SRS over the past 40 years, without a single failure of an SRS product in the field. In 1993, RTF became the first DOE facility to have a fully accredited technical training program and achievement lauded by the Defense Nuclear Facilities Safety Board. The Defense Board praised the RTF as "a model of order compliance for other defense nuclear facilities" in its 1994 annual report to Congress.

By maintaining the infrastructure to support all tritium operations at SRS, it will be easier and cheaper to site other critical DOE missions (i.e., spent fuel storage and disposal) at the site. Repeated studies under the last two Secretary's of Energy have endorsed maintaining SRS as DOE's central tritium management facility. Two internal DOE studies have endorsed moving the mound Ohio tritium operations to SRS. Secretarial independent consultants' cost-effectiveness report endorses SRS.

JRS/sse
361-16,16

TSR–H–009
COMMENT LETTER **PAGE 1 OF 1**

TRI-COUNTY ALLIANCE
An Economic Development Partnership

Allendale County
Bamberg County
Barnwell County

~~TALKING POINTS~~
TRITIUM SOURCE

THE FUTURE OF THE SAVANNAH RIVER SITE LIES IN FINDING NEW MISSIONS FOR THE VERY TALENTED AND VALUABLE WORKFORCE IT NOWS EMPLOYS. SOME 300 OF THESE PEOPLE ARE LOSING THEIR JOBS JUST IN THE BARNWELL AREA.

FOR YEARS WE HAVE BEEN LED TO BELIEVE BY THE DEPARTMENT OF ENERGY AND OUR NATIONAL LEADERS, THAT THE SAVANNAH RIVER SITE WAS THE PRIMARY CHOICE FOR TRITIUM PRODUCTION CONSOLIDATION. STUDIES PERFORMED BY THE DEPARTMENT OVER SEVERAL YEARS WERE CONDUCTED THAT CAME TO THE SAME CONCLUSION THAT WE ALREADY BELIEVED.

I REMEMBER, AN INDEPENDENT GROUP OF CONSULTANTS COMING TO THE SITE AND MEETING WITH A LOCAL GROUP OF LEADERS, ALONG WITH THE GUVERNOR AT THAT TIME, AND LATER ISSUING A REPORT THAT STATED THE SRS WAS THE BEST SITE TO CONSOLIDATE ALL TRITIUM PRODUCTION WITHIN THE COMPLEX.

BESIDES THE EXPERT OPINIONS, WE HAVE A 40 YEAR HISTORY OF PRODUCING AND HANDLING TRITIUM AT THE SITE.

1/13.09.01 | THE SRS HAS AN IMPECCABLE RECORD OF SUCCESSFULLY PERFORMING DIFFICULT PRODUCTION MISSIONS FROM START TO FINISH WHILE TEACHING THE WORLD"S MANUFACTURER'S HOW TO PERFORM SAFELY AND EFFECTIVELY.

I WOULD HOPE THE DEPARTMENT WOULD ~~BE~~ ASK ITSELF AND THE ADMINISTRATION ONE QUESTION BEFORE DECIDING ON THIS ISSUE AND THAT QUESTION IS THIS—

WHERE IS THE BEST SITE IN THE UNITED STATES TO LOCATE A TRITIUM PRODUCING OPERATION?

IF YOU ANSWER THAT QUESTION LOGICALLY AND TRUTHFULLY ——YOUR ANSWER WILL BE THE SAME AS OURS. IT SHOULD GO HERE AT THE SAVANNAH RIVER SITE LOCATED IN BARNWELL COUNTY.

Jim Keatley
Chairman, Barnwell County Council
Barnwell County Courthouse
Barnwell SC
29812
(803) ~~SE~~ 541-1600

TSR–H–010
COMMENT LETTER **PAGE 1 OF 1**

W. PENLAND MAYSON, JR.
3028 BRANSFORD ROAD
AUGUSTA, GA. 30909

April 20, 1995

U.S. Department of Energy
Savannah River Operations Office
P.O. Box A
Aiken, SC 29803

COMMENTS ON TRITIUM ALTERNATIVES

I retired a year ago after thirty-nine years service with WSRC and Dupont. I spent thirty of these years working in the SRS Tritium Facilities. In 1955 as a shift supervisor, I started up the first SRS tritium extraction from reactor targets in Building 232-F. In 1957, I supervised the loading and unloading of the first SRS tritium reservoirs in Building 234-H. In 1962, I supervised the startup of the current Line III extraction process in Building 232-H. In 1968, I led the design and startup efforts for reclaiming reservoirs in Building 238-H. In 1974, I was Assistant Area Superintendent over all SRS Tritium Facilities and was a key figure in the Building 234-H expansion. And in 1988 I became Operations Manager for the Tritium Facilities.

My point is that there is a lot more to the tritium business than just producing the tritium in a tritium source. You must have facilities like the SRS Tritium Facilities to purify the tritium of contaminants like helium-3, mix the tritium in the proper proportions, accurately load the tritium into the proper containers, perform quality assurance to prove that the loadings are correct, unload and concentrate the tritium from returned containers, perform special testing as required by the customer, and do all of this without hazard to the workers or the environment. You also must have support facilities like the SRS facilities to manage the radioactive waste, monitor for tritium in the air and water, perform the many required calibrations, perform research and development for process support, provide certified training for operators and mechanics, and numerous other functions.

1/13.09.01 | I have visited almost all the DOE weapons plants and laboratories, and I tell you that no one else has the production and support facilities that SRS has. And with the new $400 million Replacement Tritium Facility, the SRS facilities are state-of-the-art. Also, no one else has the tritium training and experience that exists at SRS.

SRS has met the tritium stockpile requirements for forty years, loading over 99% of the tritium reservoirs. SRS should be the site that is selected for the new tritium source, regardless of the technology that is selected. To do otherwise would be a waste of the facilities and people that are already in place.

STATEMENT ON NEW TRITIUM SOURCE - MAYOR THOMAS W. GREENE, CITY OF NORTH AUGUSTA, SC. APRIL 20, 1995

First of all - I appreciate the opportunity to speak before this group this evening.

My comments will be brief -I am speaking as the Mayor of the City of North Augusta. As most of you know - North Augusta has a population of about 16,000 people and 2500 of these folks work at Savannah River Site(SRS).

1/13.09.01 I have come here tonight to strongly support the location of our Nations' Tritium mission at the Savannah River Site. I have several points to make that I believe supports the location of this mission at SRS.

1. It's cost effective. SRS has over 40 years of Tritium Production and Handling experience. If SRS loses the Tritium mission. That Production and Handling experience is down the drain.

2. It makes good sense to locate it here. Tritium is our business at SRS. We're the only Site that has everything already in place to integrate all the tritium functions at one Site - including the new Tritium Source. We currently have the Infrastructure, the Technology Base and the production knowledge and experience to do the job in an effective manner.

3. SRS has an unequaled record of taking a difficult production mission and accomplishing it in an effective and safe manner.

4. Last year the new Replacement Tritium Facility(A very modern Tritium Recycling facility) came on line at a cost of close to $400 Million. It took years to build -and provides an exciting base for the new Tritium Source. – Consolidation of the new source at SRS has got to result in significant savings by avoiding duplication of facilities at some other site. Some have estimated the savings in excess of $1 Billion. -- **With today's strain on the federal budget - "why would any other site even be considered? If the Government just wants to throw away money -then throw it toward North Augusta. .We will take it and use it wisely.**

5 SRS today has a mission of cleaning up the site. This is a very important mission however after the cleanup - what then? Do we just walk away from this National Resource with it's tremendous human & technical resources? Do we just become another Hanford? I certainly hope not.

6. Lastly -FTS - That SRS has unmatched local public and political support for the Nuclear program and has had this support for over 40 years. **The surrounding communities and political leadership from both Georgia and South Carolina fully support multiple DOE Missions at SRS.**

Having met with Citizens Advisory Boards from every other DOE site across our Nation during this past year and I can tell you that we are somewhat unique in our strong support for the Nuclear Industry.

1/13.09.01 continued **Finally - SRS is the only site that has the infrastructure - the technology base - and the proven production record to integrate all the DOE's Tritium production functions - including the new Tritium Source. Whatever the new source is -whether it's a reactor or an accelerator - it makes sense to locate it at SRS. I personally support the multi-purpose reactor - since it addresses three distinct problems. It addresses the plutonium problem, it produces Tritium and it provide inexpensive power for this area and will encourage economic development. I urge the DOE to locate the new Tritium Source at SRS and to further make SRS the site of choice for other current and future DOE Missions.**

2/13.00.05

TSR–H–012
COMMENT LETTER **PAGE 1 OF 1**

04/20/95 15:58 ☎ SEN. THURMOND ☐002/002

STROM THURMOND
SOUTH CAROLINA
COMMITTEES
ARMED SERVICES
JUDICIARY
VETERANS' AFFAIRS
LABOR AND HUMAN RESOURCES

United States Senate
WASHINGTON, DC 20510-4001

April 20, 1995

Honorable Tom Greene
Mayor
City of North Augusta
Via fax

Dear Mayor Greene:

I would greatly appreciate it if you would have the following message read at an appropriate time during today's hearing:

DEAR FRIENDS:

I REGRET THAT MY SCHEDULE DOES NOT PERMIT ME TO ATTEND TODAY'S PUBLIC COMMENT HEARING CONCERNING TRITIUM PRODUCTION. AS THE CHAIRMAN OF THE SENATE ARMED SERVICES COMMITTEE, AND A CONCERNED CITIZEN, I DO WANT MY OPINION CONCERNING THIS VERY IMPORTANT MATTER TO BE KNOWN.

THERE IS NO QUESTION THAT TRITIUM PRODUCTION WILL REMAIN A CRITICAL PART OF OUR NATION'S DEFENSE INFRASTRUCTURE FOR MANY YEARS TO COME AND THAT WE MUST FIND A NEW FACILITY IN WHICH TO MANUFACTURE THIS MATERIAL. I HAVE LONG BEEN ON RECORD AS FAVORING THE ESTABLISHMENT OF A MULTI-PURPOSE REACTOR AT SAVANNAH RIVER SITE AS THE BEST WAY TO MEET THE TRITIUM NEEDS OF THE NATION. SUCH A FACILITY WOULD NOT ONLY ALLOW FOR THE PRODUCTION OF TRITIUM, BUT WOULD ALSO PERMIT THE SALE OF POWER TO LOCAL COMMUNITIES, AND FOR THE REPROCESSING OF WASTE MATERIALS. SIMPLY PUT, OF ALL THE ALTERNATIVES FOR TRITIUM PRODUCTION BEING OFFERED BY THE DEPARTMENT OF ENERGY, A MULTI-PURPOSE REACTOR IS THE MOST VERSATILE AND PRACTICAL.

1/13.00.05

EQUALLY IMPORTANT TO SECURING A NEW SOURCE FOR TRITIUM IS WHERE THE PRODUCTION FACILITY SHOULD BE LOCATED. SINCE ITS CREATION, SRS HAS BEEN THE VERY HEART OF OUR NATION'S NUCLEAR DEFENSES AND IT SHOULD CONTINUE IN THAT ROLE. NO MATTER WHAT PRODUCTION OPTION THE DEPARTMENT OF ENERGY SETTLES UPON, IT SHOULD BE LOCATED RIGHT HERE IN SOUTH CAROLINA.

2/13.09.01

WITH KINDEST REGARDS AND BEST WISHES,

SINCERELY,

Strom Thurmond

STROM THURMOND

ST:jd

TSR–H–013
COMMENT LETTER **PAGE 1 OF 1**

Peter L. Gray
P. O. Box 968
Aiken, SC 29802

My name is Peter L. Gray and I live at 505 Colleton Avenue in Aiken, SC. I have been employed in various capacities for SRS for nearly 43 years, first with DuPont and then WSRC.

I strongly support the US government having continued production capability for various radionuclides that the government might need in the future -- for defense missions or other reasons. I support the US having a strong defense posture -- or as Teddy Roosevelt said: Speak softly, but carry a big stick. I hope that quote is close to correct.

The major question is: What kind of production capability do we need? I think the correct answer is: a proven one that will work. The heavy water reactor comes immediately to mind. It was the backbone of our nuclear production capacity for about 45 years right here at SRS. What we need now is a modern heavy water unit.

It may not be popular to fly in the face of the "triple-play" reactor. After all, that unit is touted as: 1) making electricity, 2) burning excess weapons grade plutonium, and 3) making tritium. An additional bonus is that it may be built by private interests, saving money for taxpayers.

But, I'd like to propose a new heavy water reactor -- better than previous ones built or designed -- that has several very attractive features. It is an idea I developed near the end of the previous NPR program in 1992. It was accepted by WSRC as a patentable idea that won an award. It has been peer-reviewed and no show-stoppers were found. And it has been pursued to the point of having a patent pending which will be owned by DOE.

The unit is as safe as the Modular High Temperature Gas Reactor, or perhaps safer. It does away with essentially all Design Basis Accidents. It can be built for about 1/3 to 1/2 the cost of other production reactors being considered in 1992 and for considerably less than an accelerator. It does not need a large external power source as the accelerator does.

1/13.01.04

It uses the proven (over 40 years) SRS technology for fabrication of all fuel and target components that go in the reactor. Likewise, it uses the proven SRS technology for product recovery. It takes the only step of the 1950's SRS production process which needs modernization -- the 45-year old reactors -- and replaces them with a modern safer reactor. All elements of the new reactor concept have been proven in previous installations. What is new is the novel manner in which these elements are combined to make a safe, low-cost, efficient, and proven operation. It is compatible with other proven and available SRS operations. It is a natural for SRS.

This concept, though mentioned to WSRC management in 1992 and supported by them at the outset, was not widely discussed or supported later. It was granted enough support to pursue steps leading to a patent application. That has now been completed, and, as I said, the patent is pending. The patent will belong to DOE and they may obviously use it if they wish.

My plea is this. If the US wishes to have a continuing nuclear deterrent, if they wish to have a proven manufacturing unit for that deterrent, and if Savannah River wishes to be selected as the production site (using their proven and successful techniques), then this concept should be reviewed and accepted. I am preparing a paper for presentation at the American Nuclear Society Winter Meeting starting October 29, 1995. Approval to present this paper has been granted by WSRC and DOE.

Citations: DOE Patent Case S-78,151
WSRC Invention Disclosure SRS-92-277
*WSRC Internal Memorandum NPR-DEV-92-0119

Kathryn D. Treadway
113 at the Bunkers
Aiken, SC 29803 (803)641-1260

Thank you for allowing me to speak this evening in support of locating the Tritium supply and recycle programs at Savannah River.

Except for my college years, I have lived in the CSRA all my life and have worked in the Tritium Facility since 1980.

1/13.09.01 SRS and the Tritium Facilities already have the infrastructure . . . facilities and personnel and experience to support the Department of Energy's missions. We perform the work safely and meet your standards.

Whatever the technology for a new tritium supply, the site should be Savannah River. A few of the reasons for this include:

- We have an outstanding safety performance - both the site and the Tritium Facilities.
- There are existing facilities for tritium extraction, recycle, purification and loading.
- The Tritium Facilities are staffed by a professional, dedicated and conscientious staff who have always met the stockpile requirements.
- The Tritium Facilities training program was the first accredited training program in the DOE complex.
- We are the only DOE facility with the tritium trained and experienced work force. It has taken years to get to this point and the situation should be taken advantage of . . . not disbanded or allowed to atrophy.
- The local support is second to none; both public and business leaders are vocal supporters of our missions.

In closing, the tritium recycling facility was just completed and placed in operation at a cost of $400 million. It is both practical and cost effective to place the source for tritium, the recycling facility and the loading facility at the same location. This would keep the environmental cost and impact, the training costs, and the personnel cost in control because of the hub operation.

Why start from scratch when the experience, the facilities and the personnel are already her and operating?

$300 million on "ENVIRONMENTAL" Studies? Where is the Word defined or Understood? Hitler mastered Propaganda ie the "Big Lie" repeated often to mean Something different to all who do not know truth.

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WASHINGTON, DC 20077-6560

TSR–H–016
COMMENT LETTER **PAGE 1 OF 1**

Name: BRIAN SIMMONS

# of Pages in Comment:

Date of Receipt: [redacted]

1/13.09.01 | THE COMMUNITY AS A WHOLE ON BOTH SIDES OF THE RIVER SUPPORT THE FURTHER DEVELOPMENT OF SRS INCLUDING A TRITIUM PRODUCTION FACILITY. WE FEEL WE HAVE THE TECHNOLOGY, WORK FORCE, INFRASTRUCTURE TO ACCOMMODATE THIS DEVELOPMENT AND ESPECIALLY IN ATTITUDE POSITIVE TO THIS DEVELOPMENT.

TSR–H–017
COMMENT LETTER **PAGE 1 OF 1**

COMMENTS ON
DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT
FOR TRITIUM SUPPLY AND RECYCLING

1/13.09.01 | 1) A great many decisions obviously need to be made. In my mind, the easiest of these is site selection. Namely, *Savannah River Site should be the site where the tritium supply source should be built, regardless of the form it takes.* There are many reasons for this, the most obvious (and important) of which is the fact that a state-of-the-art Tritium Recycling facility already exists at SRS. What sense can there be in relocating the Tritium Recycling mission to another site when so many tax-payer dollars have already been invested in this brand new facility? Given that the Tritium Recycling facility belongs at SRS, why choose any other site for the Tritium Source mission? This would unnecessarily introduce many additional transportation issues.

But this line of thinking is already well established. I would like to cite a reason for leaving the Tritium Recycling mission at SRS which I have not yet heard in any discussions. The Tritium Recycling facility at SRS has been operating since 1958. *In its 37-year history, not one single tritium-filled reservoir has ever sprung a leak in the field.* This is rather amazing reliability when you think about it. Tens of thousands of tritium-filled reservoirs have been shipped from SRS to the military. The tritium contained in most reservoirs is at enormously high pressure, sealed from the atmosphere by a pinch weld on a small fill stem. Do we now just completely discount this track record and entrust such responsibility to someone else? I hope not.

2) Of the Tritium Source options, I favor any of the reactor options over the accelerator because it is proven technology. When making any of life's decisions, it is always prudent to weigh the risks and rewards - the "pros and cons" - then choose accordingly. The PEIS does a pretty good job of spelling out the various considerations, but really makes no attempt to apply weighting factors to each. Although this complicates things, it is obviously necessary because not all considerations are equally important. I believe the down-side risk that an accelerator may not work at all after it is built far outweighs all other considerations. If that happens, this nation's nuclear deterrency will be nil. I doubt any of us appreciates how much our current peace and security depends on having that deterrency.

2/13.00.37 | Also, as I understand it, one of the primary reasons for pursuing the accelerator instead of a reactor technology is its *perceived* environmental advantage. (Actually, I wonder whether the power source associated with the accelerator option would not actually increase its environmental impact, but this is not my main point.) Take that away, and the decision to build a reactor is economically clear. And, when facts are objectively observed, we find that the environmental track record of this nation's reactors has actually been stellar. Even in the Three Mile Island incident, there was no significant environmental release. I believe we have paid far too much attention to a handful - truly, a tiny minority - of extremists who value environmental purity above all else. We should refuse to continue taking these people seriously, because they refuse to acknowledge that rewards (this nation's peace and security) do indeed accompany the miniscule risk inherent in operating a tritium production reactor. Let us not fear the opinions of such people when making decisions this important.

Comments offered by: Mark A. Tyrrell
831 W. Martintown Rd.
N. Augusta, SC 29841
(803) 279-9443

TSR-H-018
Comment Letter

PAGE 1 OF 1

1700 Georgia Ave.

Name: Mike Hitchler N. Augusta

# of Pages in Comment:

[redacted]

1/11.00.17

The predictions of health effects & environmental releases between the alternatives do not assess major uncertainties & confidence values. Rather only point or mean values. This is totally misrepresents overall consequences between alternatives designs with different levels of maturity or operating experience. The APT has never been operated nor has the concept been demonstrated for a machine of this size. The HWR and ALWR have 100s to 1000s of years operating experience at these power & production levels as well as billions of $ spent in research and infrastructure to support operations. Thus the health effects & release mechanisms are very well known, with the predicted value having very narrow uncertainty bands. The APT has none of this. Experience of similar safety assessments for new technology has ALWAYS SIGNIFICANTLY UNDER PREDICTED SAFETY AFFECTS.

Thus additional penalties to properly account for this lack of maturity need to be directly scaled into the APT results. Risk analysts have traditionally have added in the Common Mode failure factors and Baysian Update methods to account for lack of experience.

Without these addressed, the PEIS is significantly flawed.

TSR-H-019
Comment Letter

PAGE 1 OF 2

Aiken County

WILLIAM H. SPRIMPHO
COUNTY ADMINISTRATOR

828 Richland Avenue West
Aiken, South Carolina 29801
(803) 642-2012
(803) 642-2124 (FAX)

April 17, 1995

COMMENT ON DEPARTMENT OF ENERGY ALTERNATIVES
FOR ASSURING A LONG-TERM SUPPLY OF TRITIUM

The following comments are submitted regarding the Department of Energy's solicitation of public comments.

The United States has and will continue to have a requirement for the production of tritium as a component of weapons systems critical to the national security of our nation. Responsibility for this process lies with the Department of Energy. This is a correct delegation of responsibility as the Department and its predecessors have satisfactorily fulfilled this vital mission for over 50 years.

In reviewing the requirement for a production facility, it is imperative that the capability of existing facilities be examined along with options for new facilities. We believe that the ability of the Department of Energy's Savannah River Site to provide the required production facilities and related support functions makes it an ideal location to place future tritium production missions.

1/13.09.01

The Savannah River Site possesses the infrastructure, technology base, staff expertise, proven production record and community support to make it the logical choice for a new tritium production mission. The above attributes, examined in an environment of austere funding availability, would appear to make an objective consideration of the Savannah River Site a most positive action. In an era when government expenditures are under re-examination and scrutiney, decisions must carefully reflect opportunities to accomplish mission requirements in the most expeditious and efficient manner. The use of the existing Savannah River Site facilities provides the Department the ability to meet future requirements while utilizing existing assets and providing a savings to the American taxpayer.

TSR–H–019
COMMENT LETTER **PAGE 2 OF 2**

PUBLIC COMMENT (Cont.) Page 2

Putting politics aside, the following assets of the Savannah River Site argue strongly for its selection as the site for future tritium production:

- The Savannah River Site's new Replacement Tritium Facility is an excellent and capable location for a new production center. Its use would result in a significant cost savings.

1/13.09.01 continued

- The operational and safety record of the Savannah River Site, coupled with available staff expertise, provides an unsurpassed record for efficiency and ability within the Department of Energy community.

- The Savannah River Site possesses the required infrastructure to support an expanded mission relating to tritium production.

The Savannah River Site has enjoyed an unmatched level of positive local support in the accomplishment of its national security missions. We have accepted the imposition of the facility upon an established lifestyle and adjusted to incorporate it into our environment. Community support for the Site and its operations has consistently been favorable, unlike the challenges and opposition forged against the Department at other locations. In return, the Savannah River Site has honored its environmental responsibilities and been a positive economic force in our region. We believe that this record is without equal within the Department of Energy family.

I appreciate the opportunity to provide these comments of support for the assignment of any future tritium production programs at the Department of Energy's Savannah River Site.

William M. Shepherd
County Administrator

TSR–H–020
COMMENT LETTER **PAGE 1 OF 2**

Environmental Impact Statement
Replacement Tritium Source
Statement by
John R. Patterson, Director
NAC International, DOE Field Operations Office
Savannah River Research Campus
227 Gateway Drive, Suite 116-B
Aiken, SC 29803

NAC International is an internationally recognized diversified energy services company having offices in Atlanta, Washington, D.C., Zurich, Tokyo, Moscow. Founded in 1968, the firm's specialties include fuel-cycle consulting, cask engineering, and transportation, energy consulting, information, services and technology. This week, NAC International has opened an office at the Savannah River Research Campus in Aiken, South Carolina in order to better serve the needs of the Department of Energy and the State of South Carolina. NAC International's interest in this matter is based on our belief that the US nuclear industry has a vested interest in assisting DOE in successfully achieving its mission objectives.

The environmental impacts of the replacement tritium source revolve around two fundamental considerations, technology and location. NAC International's comments are focused on the latter consideration, location, although we believe that there is considerable merit to continuing with existing technology in the absence of convincing reasons dictating alternative technology.

Our comments on location are influenced by over a decade of experience observing the Department of Energy's attempts to site a permanent repository for spent fuel. The project has suffered numerous schedule delays and painful cost overruns, largely due to public opposition to the siting of a facility involving radiological hazards. Neither the Department's Defense Programs mission or, for that matter, DOE's other missions will be well served by another contentious, time consuming, and costly public debate regarding siting of a potentially controversial project in a location not currently utilized for similar purposes. Thus we are surprised that DOE elected to not specify the Savannah River Site as the "preferred alternative" for locating the project, regardless of technology. The site has over 40 years of experience in handling the quantities of tritium required by the production mission as is in fact the only US site meeting this criteria. Both the technological and physical resources exist at SRS to support the mission, and the required intellectual resources are well represented in the SRS work force. While it is possible to relocate the intellectual resources, it cannot be done without extreme hardship on the affected personnel and the community. It appears logical to us the SRS should be the site against which others are compared.

1/13.09.01

A further consideration relates to the use of tritium, itself. As an isotope of hydrogen, the oxide form of tritium is virtually indistinguishable from water making assured containment difficult. While containment and control technologies have improved considerably over

the years, it would be naive to assume that inadvertent releases to the environment can be precluded. SRS has experienced these releases and has the large exclusion distances needed to mitigate the effects on the off-site population. The surrounding population understands the mission and has the technical sophistication to comprehend mission related risks, health impacts, and view them in their correct perspective. Committing a new site and new facilities to tritium production when there is an existing site and facilities capable of the mission does not appear consistent with the Department's policies on waste minimization, and potentially exposes the program to cost and schedule risks that could be avoided by reuse of existing resources.

In summary, we understand that the EIS process dictates that a reasonable set of alternatives must be evaluated when considering a major federal action, but both technical and sociopolitical considerations would appear to us to dictate the Savannah River Site as the standard against which others should be compared.

Name: DAVID N. BARNES

# of Pages in Comment: (1)

1/13.09.01

RECOMMEND TO YOU THAT WHAT EVER TYPE OF REACTOR YOU DECIDE IS NEEDED THAT IT BE PLACED AT THE SRP AIKEN, S.C. SITE – THE INFRASTRUCTURE IS IN PLACE!!

TSR–H–022
COMMENT LETTER **PAGE 1 OF 1**

TRITIUM SOURCE
TALKING POINTS

MY NAME IS Anna T. Loadholt AND I AM HERE REPRESENTING Barnwell County Council.

I UNDERSTAND YOU ARE HERE TODAY ASKING THE PUBLIC THEIR OPINION ON WHERE AND HOW TRITIUM SHOULD BE PRODUCED FOR THE NATIONS NUCLEAR ARSENAL. WELL FORGIVE ME FOR BEING A LITTLE VICIOUS, BUT I THOUGHT THAT WAS YOUR JOB AS THE DEPARTMENT OF ENERGY. YOU ARE THE EXPERTS, YOU HAVE PAID FOR ALL THE STUDIES DONE BY CONSULTANTS, INTERNAL EXPERTS, AND SITE PEOPLE. THESE STUDIES AND EXPERT OPINIONS UNDER TWO DIAMETRICALLY OPPOSED SECRETARIES OF ENERGY CAME UP WITH THE SAME ANSWER.

"THE BEST SITE IN THE NATION FOR TRITIUM PRODUCTION IS AT THE SAVANNAH RIVER SITE". WHY CONTINUE TO DRAG THIS DECISION OUT AND KEEP SPENDING TAX PAYOR DOLLARS.

1/13.09.01 LISTEN TO YOUR OWN EXPERTS AND BUILD A TRITIUM PRODUCING REACTOR ON THE SAVANNAH RIVER SITE!

THANK YOU!!

TSR–H–023
COMMENT LETTER **PAGE 1 OF 1**

Name: Cecil L. Collins Jr.
# of Pages in Comment: 1

1/13.09.01 As a life-long resident of the CSRA (41 years), I have always respected the work at SRS and its importance to our national security. The people at SRS are an important asset to our community, also. As a small business owner, I appreciate the impact of the SRS mission. I will do everything I can to support the SRS mission and its future.

Jim Collins
104 Oakhurst Dr
N. Augusta SC 29841

State of South Carolina

Office of the Governor

DAVID M. BEASLEY
GOVERNOR

POST OFFICE BOX 11369
COLUMBIA 29211

April 20, 1995

Honorable Hazel R. O'Leary
Secretary of Energy
United States Department of Energy
1000 Independence Avenue
Washington, D.C. 20585

Dear Secretary O'Leary:

I am writing in support of your choosing Savannah River Site as the preferred location for the new tritium source.

Savannah River Site has more than forty years' experience in safe handling of production quantities of tritium. It is the only site in the DOE complex that can make that claim. SRS has almost three hundred square miles in a secure area, and possesses the infrastructure to support the tritium mission. SRS has the only facilities in the complex with the proven ability to handle the waste streams from tritium production. In addition, SRS has a highly skilled, dedicated work force which has led the world in the safe production and handling of tritium. Savannah River Site has often demonstrated its ability to build and bring into operation large and complex production-oriented facilities. 1/13.09.01

Locating the tritium source at Savannah River Site, where supporting facilities already exist, will enable the Department of Energy to save a significant number of scarce federal dollars. The new tritium source is also a logical complement to the new Replacement Tritium Facility at SRS.

Finally, I urge you to give careful consideration to the multi-purpose reactor concept. A multi-purpose reactor would be capable of producing tritium, consuming excess weapons plutonium, and generating electricity. This concept has the strong support of the Savannah River Site community as well as a number of South Carolina's and Georgia's Congressional members. Besides the obvious advantages of handling two essential DOE missions using a proven technology, there are at least two industry groups who have proposed private financing for a multi-purpose reactor. 2/13.00.05

Letter to Secretary O'Leary
April 20, 1995
Page Two

No matter which technology is chosen, I must reiterate my firm belief that the very best site in the DOE complex for a new tritium source is Savannah River Site. I am confident that your analysis will compel the same conclusion.

Sincerely,

David M. Beasley

TSR–H–025
COMMENT LETTER **PAGE 1 OF 1**

COMMENTS ON TRITIUM EIS

1/13.04.11 1. The technology choice made by this EIS will form the basis of this nation's nuclear defense for the next 40 - 50 yers. For a valid stakeholder evaluation and comment on the choice of technology, I believe it is important to provide a feel for the maturity of the accelerator technology. How much tritium has actually ever been made with this approach? And if the number is little or none as I suspect, what backup does the Department plan to provide if the accelerator technology is chosen, since development of the technology and equipment may not proceed as smoothly as anticipated, to prevent a situation in 2011 where the U.S. still could have no production capability.

2/16.12 2. I very much believe life cycle cost analyses should be available for public review and comment. With the 40 - 50 year impact of this decision, small annual cost differences can escalate into dramatically different life cycle costs. The public needs to be convinced that costing methodologies and assumptions are consistent between sites and technologies, and that the developmental status of the accelerator option is properly reflected in cost and schedule sensitivity analyses.

3. Since one of the primary differences between the two basic technologies under consideration is in the area of net energy consumption, I believe a valid analysis of the differing Environmental Impacts can only be made with the inclusion of this effect.

That is:

3/02.04 The environmental impact of production of the energy consumption of an accelerator via a fossil fuel plant (unless of course the Department proposes construction of a power reactor in conjunction with the accelerator) should be added to the accelerator's inherent environmental impact.

And, the environmental impact of displacing fossil fuel production of electricity equivalent to the net production of a reactor should be subtracted from the environmental impact of a reactor.

Thank you,

Richard L. Geddes
807 Big Pine Road
North Augusta, SC 29841

TSR–H–026
COMMENT LETTER **PAGE 1 OF 3**

TRITIUM PRODUCTION AT THE SAVANNAH RIVER SITE

In concert with most of the citizenry of the Central Savannah River Area I wish to express my own strong support for the Savannah River Site being chosen as the primary location of the Department's missions of the future including tritium production. The SRS has a long and successful history of serving the needs of DOE. Now, in an era of downsizing and cost effectiveness, the Site's unique capabilities offer the best potential to consolidate, centralize, and minimize the DOE mission while meeting the enhanced requirements and expectations of future nuclear materials production, processing, and management.

1/13.09.01 SRS is the largest, most modernized site in the Complex with billions of dollars spent over the last 15 years to prepare the Site for extended operation. The favorable geographical, ecological, geological, and climatalogical conditions of the site are backed by the infrastructure created to serve the needs of DOE's primary production facility over the last two decades.

The site is served by highly accessible primary rail, highway, and air routes, and large supplies of highly reliable power. The workforce pool is large, and is backed by new training and engineering centers, feeder programs from state training programs, and cooperative research efforts with regional universities. The site's infrastructure, including facilities, security, Emergency Management and Response, utility services, procurement, medical, records management, accountability, and environmental monitoring, primarily serving and supported by the EM Division, is "best is class" in the Complex and can readily accommodate incremental efforts necessary to meet the needs of new missions. SRS is the best characterized site, maintains the most extensive monitoring system, and has the least impact on the public (per unit of material) of any site in the Complex. Most importantly, Savannah River has a history, tradition, and commitment to being the safest site in the Complex, and one of the safest workplaces in the world.

Savannah River has demonstrated the capability to adapt to the modern era of DOE. The site leads the Complex in developing the management systems and the working culture necessary for successful operation, while developing the mechanisms necessary to operate with ongoing oversight and review by stakeholders and regulators has been a primary initiative. Formalized conduct of operations, maintenance, and technical support has been instituted in all phases of the operations, and is continuously improving. Task based planning, budgeting, and financial control is used in all phases of the operation. Only Savannah River is experienced in major facility

construction and startup in this era of enhanced expectations and requirements.

The cost effectiveness of the site is on a rapid growth curve, as organizational restructuring, effective outsourcing and fixed price subcontracting, and a hard dollar savings program that has already generated over $400 million dollars, continue to expand. The site is developing programs and achieving success with proposing, and where appropriate, adopting graded approaches to meeting the ever increasing load of prescriptory requirements.

1/13.09.01 continued

All waste at SRS is processed or stored on-site. No issues relative to the transportation of wastes impact programmatic actions. The site is developing the most comprehensive capability in the Complex to handle all types of radioactive waste, including the Burial Vaults, Consolidated Incinerator, and the focus of the Complex's attention, the Defense Waste Processing Facility. New missions at SRS have the opportunity to share the facilities and processes necessary to support long term programs to stabilize and disposition surplus and legacy materials.

The site enjoys a reputation of trust and respect with the community and the state. The Site and the State mutually benefit from the cooperative and supportive relationship between site personnel and regulatory officials. There are no court orders restricting the Site's ability to effectively manage and maintain its operations. Production has coexisted harmoniously for decades with a National Environmental Research Park. Public support for the Site, including defense missions, is historically strong, and bolstered by near unanimous support from state politicians and congressional delegations of two states supporting ongoing missions for the site, in parallel with a vigorous program to remediate the past.

2/13.00.05

I do not claim to be an expert regarding the relative merits of tritium production via reactor or accelerator technology. However, my gut feeling is that DOE has two primary reasons for its existence, and two primary obligations to this country - National Defense, the supply and maintenance of this country's nuclear arsenal, and the development and assurance of this country's energy security and independence. It seems to me that the decision to be made concluding this Environmental Impact Statement offers the Department an opportunity to fulfill both its obligations A reactor will produce tritium and meet the Department's national security obligation. Reactors have done this successfully, safely, and reliably for 40 years. But in addition, a reactor will meet the other obligation of the Department, that of being additive to the energy supply of this country and presents an opportunity to begin the rebirth of nuclear power which will be so vitally

needed in the decades ahead. It is quite possible that the security of this country is at least as dependent on energy self-sufficiency and independence as it is on weapons.

On the other hand, an accelerator is a research program. One which can undoubtedly produce tritium, but the efficiency, effectiveness, reliability, and cost of this approach exist only in the minds of its advocates. I understand that an accelerator has certain attributes which may make attractive, primarily that it can produce special isotopes, including medical isotopes, quite well. But an accelerator is an iffy proposition at best on which to base the Nation's defense. And what is definitely known is that an accelerator is an energy hog. Rather than being additive to the nation's energy supply and independence like a reactor, an accelerator will suck huge amounts of energy from the nation's grid. Unless the Department is planning to construct an accompanying power reactor, an accelerator will only exasperate the already critical, and sure to worsen, picture of domestic energy self-sufficiency. I am concerned that the Department is sacrificing its energy responsibilities merely to satisfy those critics of nuclear power who wield so much sway with the Department.

I believe I speak the mind of most of the residents of the CSRA. We want to be the nation's tritium producer - regardless of technology. But we also hope as Americans that the Department does not let the shrill voices of the extreme override the technical decisions based on facts and historical performance.

Savannah River believes that it represents the best in the DOE Complex. We have produced for the national defense while protecting the public and the environment. The site is available for the missions of the future. The same historic and demonstrated capability to meet the needs of the defense mission, the commitment and capability to operate in the mode of the future, and the will of the people of the Site, the community, and the region to safely manage and constructively complete the environmental mission, while proceeding to accept and execute the future missions of the Department, is preparing the Site for the future.

Thank you,

Richard L. Geddes

Richard L. Geddes
807 Big Pine Road
North Augusta, SC 29841

**Comments to the Department of Energy on
the future U. S. tritium source, technology and siting
by
Russ Ferrara
Aiken County Councilman
109 Fox Lea Trail
Aiken, SC 29803
(803) 641-4704
April 20, 1995**

Good evening, my name is Russ Ferrara, I am a representative on the Aiken County Council. I hold a B.S. degree in nuclear engineering from the United States Military Academy and an M.S. degree in nuclear engineering for the Massachusetts Institute of Technology. My expertise is in the area of nuclear fission, reactor theory, radioactive waste management and tritium production. I have engineered reactor design that have produced tritium for the United States. Approximately 50% of the Savannah River Plant is located in Aiken County and 53% of the workforce live in Aiken County.

Let me begin by addressing what I believe should and must be the scope of the EIS we are discussing here tonight. The EIS should address and evaluate the environmental impact associated with energy requirements of each technology and the respective energy output of each technology. The Department of Energy should be supportive of any technology that produces energy which is useful to mankind and our environment. The selected technology should be flexible in terms of its ability to produce a wide range of radioisotopes; such as Pu^{236}, Co^{60}, and H^3. The environmental impact of any technology's inability to provide this flexibility should be evaluated. And finally, the government should weigh heavily on its selection of a technology that can produce. The responsibility for the adverse environmental impact of a technology that fails to produce tritium and other future required man-made radioisotopes, not to speak of the tremendous economic lost to our county, if this should occur, will rest solely with the Clinton Administration.

1/13.00.27

With these considerations in mind, the Aiken community supports the proven technology of nuclear fission and not the dream of an accelerator that may or may not produce incidental tritium. The nuclear community understands the fission device in terms of blanket effects, xenon oscillations, neutron poison buildup, fluence effects on stainless steel, the Doppler shift, and delayed neutron emission. If the accelerator is chosen, I would conclude based on our experience with the fission device over the past 45 years, that there are many phenomena that we don't even realize which must be addressed, studied, and well understood before placing the machine into production.

Regarding siting of the facility at the Savannah River Plant, our strengths include:

2/13.09.01

- World leadership in the safe production and handling of "production scale" amounts of tritium.

2/13.09.01 continued

- A 40 year history of on-time delivery of tritium components to the nuclear weapons stockpile with no component failures in the field.
- An existing workforce, plant site and infrastructure which can readily accommodate the safe construction and operation of a multi-purpose reactor: including the only facilities to effectively handle waste streams from the reactor.
- An often demonstrated capability to build and bring into operation large and complex production-oriented facilities. Recent examples include the Replacement Tritium Facility, upgrades to SRS production reactors, Naval Fuels Facility and ongoing activities at the Defense Waste Processing Facility. SRS engineers have demonstrated they can turn theory into practice.
- National and DOE leadership in worker safety and health performance.
- A "Best of Class" record with respect to reducing releases to the environment which affect onsite or offsite population and natural resources. The recently completed Replacement Tritium Facility reduced airborne releases of tritium by over 90 percent.
- The strongest degree of community support for the multi-purpose reactor in the DOE complex.

Thank you for giving me this opportunity to comment on this DOE EIS this evening!

06/23/94 11:12

ARTHUR RAVENEL, JR
COMMITTEE ON ARMED SERVICES
COMMITTEE ON MERCHANT MARINE AND FISHERIES

Congress of the United States
House of Representatives
Washington, DC 20515-4001

CHARLESTON OFFICE
DISTRICT OFFICES

June 22, 1994

The Honorable J. Bennett Johnston
Senate Appropriations Subcommittee
on Energy and Water Development
SD-132
Washington, D.C. 20510-6030

Dear Mr. Chairman,

1/19.03 As the Senate Energy and Water Appropriations Subcommittee prepares for markup of the FY '95 Department of Energy budget, I would like to call to your attention the proposed multi-purpose nuclear energy plant at the Savannah River Site. The proposal (which has been submitted to DOE) would lead to a privately financed facility (saving taxpayers billions of dollars in construction costs) that would dispose of excess weapons plutonium, produce tritium, as needed, and produce electricity for sale throughout the southeastern United States.

2/08.04 Employment resulting from the multi-purpose nuclear facility would help offset the defense related cutbacks in the Savannah River Site region, as well as the Charleston area. Note that 4,000 high tech jobs would result in the region during the construction phase of the project and more than 1,200 such jobs would result during the plant's operating lifetime.

3/13.09.01 As you might expect, the people of South Carolina have shown a great deal of interest in the program. Various civic groups in the Aiken area have either approved or are considering resolutions endorsing the program. They are more than happy to be a part of a solution that satisfies the Federal government's defense needs, while simultaneously satisfying the energy needs of the Southeast. For the local public, an important characteristic of the proposed program is

4/10.04 that the spent fuel wastes from the facility will be treated in the same manner as spent fuel from all other commercial reactors. The State of South Carolina has a very successful record in the use of commercial nuclear energy.

I strongly encourage you to include funding support for the multi-purpose facility, as a part of the FY '95 Energy and Water Appropriation bill.

With every good wish,

W. Russ Ferrara
Aiken County Council
109 Fox Lea Trail, Aiken, SC 29803

August 10, 1994

Honorable Hazel O'Leary
Secretary of Energy
Department of Energy
1000 Independence Ave.
Washington, D.C. 20585

Dear Secretary O'Leary:

1/13.00.05 This letter is to express my strong support on behalf of the citizens who live in Aiken County for the multi-purpose reactor program. Attached is an Aiken County resolution that outlines our county's support for the program: similar resolutions have been passed by the City of Aiken, Aiken-Edgefield Economic Development Partnership and the Citizens for Nuclear Technology Awareness. We believe this approach is the correct answer to the question of plutonium disposition, and also allows us to realize a true peace dividend in the Central Savannah River Area; that is, direct energy production.

Your personal support of the multi-purpose reactor program at the Savannah River Site is greatly appreciated!

With best regards, I am Sincerely,

Russ Ferrara

Russ Ferrara

Attachment

TSR–H–029
COMMENT LETTER

PAGE 2 OF 2

Sponsor(s) : Ferrara
Committee Referral : N/A
Committee Consideration Date: N/A
Committee Recommendation : N/A
Effective Date : July 20, 1994

RESOLUTION NO. 94-7-136

COUNCIL ADMINISTRATOR FORM OF GOVERNMENT FOR AIKEN COUNTY

(To Express Support for the Multipurpose Reactor at the Savannah River Site.)

WHEREAS:

1. The Savannah River Site, constructed in the early 1950's has proven to be a good corporate neighbor with an outstanding safety record in the field of nuclear operations; and
2. The production reactors now at the Savannah River Site are not in operation and are nearing technical obsolescence; and
3. The need for strategic nuclear materials and disposition of plutonium are paramount to the defense of this nation and global security; and
4. The present need for electrical energy and conservation of precious natural resources, such as coal and natural gas, must be balanced in order to assure future generations a supply of these natural resources; and
5. A nuclear reactor which addresses the need for electrical power, the safe disposition of plutonium, and provides for the production of tritium has been proposed; and
6. The siting of such a Multipurpose Reactor at the Savannah River Site would help maintain the economic viability of a DOE supportive community and region; and
7. Both the Board of Directors of the Economic Development Partnership and the Citizens for Nuclear Technology Awareness have approved resolutions supporting the Multipurpose Reactor at the Savannah River Site; and
8. The Aiken County Council is on record as encouraging the growth of business and industry in the region.

NOW THEREFORE BE IT RESOLVED BY THE AIKEN COUNTY COUNCIL THAT:

1/13.00.05 continued
1. Aiken County Council supports the study of a Multipurpose Reactor at the Savannah River Site in order to decrease the threat of nuclear proliferation, conserve valuable natural resources and ensure an appropriate supply of Tritium for strategic defense.
2. Council supports the development of new reactor technology, fusion technology and the development of alternate sources of energy.

Adopted at the regular meeting of the Aiken County Council on July 19, 1994.

TSR–H–030
COMMENT LETTER

PAGE 1 OF 2

Name: E.R. Russell
# of Pages in Comment: 2
[redacted]

1/13.01.03
1) Will the technology of heavy water ~~fast~~ reactor generating electricity and using up Pu be explored/evaluated?

2/10.28
2) How were the low level waste figure generated?
What are these figures based on: ~~what~~ ... France & basis?

3/16.08
3) Will cost of disposal facilities be included in the cost benefit studies

4/16.13
4) Where are the NPR design work in relation to the new ones being discussed?
How is that figured into the costs we discussed & technology roles?

5/13.00.22
5) ~~How~~ Have the plutonium burning/generation cycles been explored as is being done in Japan & France?

Name: ER Vessels
# of Pages in Comment: 2

6/11.02.01 c) What are the Risk & consequences from the accident scenarios for these various Technologies that are being proposed?

7/22.03 7) Why was CANDO Reactor of the Canadians not evaluated as part of this process?

1/13.09.01 As a concerned citizen, I feel that the infrastructure, personnel and existing land at SRS make it the most logical and capable facility in the world to produce tritium, whatever technology is chosen.

SRS is fully capable of executing other valuable and critical missions besides just the production of tritium. Processing and safely storing spent nuclear fuels from our country and, especially, others should be a priority. Clean-up technology and infrastructure should be implemented immediately along with production plans.

The excellent production and safety record at SRS for over 40 years has earned it a nuclear-friendly relationship with the community, making it a most desirable location for future missions. This area has always welcomed and supported the projects at SRS, and continues to do so.

Berny Mc Gahee
122 Lakeview Court
Martinez, Georgia 30907

TSR–H–032
COMMENT LETTER

1/13.04.07 I came away with the impression that the DOE has already made a decision to support the Accelerator ~~this~~ based on political considerations ~~without any~~ and on inherent prejudice of the current administration against nuclear reactors. It also appears that this comparison of technologies is simply a rationalization of a ~~the~~ decision that has already been made for the accellerator.

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 19684 WASHINGTON, DC
POSTAGE WILL BE PAID BY ADDRESSEE

U.S. DEPARTMENT OF ENERGY
ATTN: OUTREACH OFFICER
DP-35
1000 INDEPENDENCE AVENUE, SW
WASHINGTON, DC 20077-5550

TSR–H–034
COMMENT LETTER

4/20/95

Comments of Southwestern Public Service Company

By David Wilks, Senior Vice President

I have reviewed the Draft Programmatic Environmental Impact Statement, and I have the following comments and corrections to suggest:

COMMENTS:

1/13.00.38
- Southwestern in the course of its business has investigated each of the reactor technologies described for power generation. We believe them to be sound technologies that can be made environmentally safe. In fact, in the late 1970's, Southwestern was engaged in a partnership with DOE to develop a High Temperature Gas-Cooled Reactor for the Texas Panhandle. Each of the technologies would bring a strong power supply to the area.

- With respect to the accelerator, Southwestern believes that it too will be environmentally safe based on our familiarity and proposals for the similar superconducting supercollider.

2/04.02.01
- Section 3.4.1.4 of the PEIS states that the Pantex site is considered to be a dry cooling site because surface waters are not available. Southwestern recycles sewage effluent from the City of Amarillo as a beneficial source of cooling water for almost 1500 MW of power generation. Depending on the when the tritium reactor commenced operation, recycling sewage effluent may be an environmentally sound and efficient source of cooling. At least the study should consider this alternative.

3/02.04
- Section 4.8.2 contemplates the need for a dedicated coal or natural gas fired power plant for the accelerator. A preferable consideration for the Pantex site which will eliminate the environmental issues in this section is to purchase power from an electric utility. Dependence on on-site generation will create unsatisfactory reliability for the process plus it is unrealistic to believe that on-site generation will be able to handle the cycling of the klystrons in the accelerator. Relying on a utility which brings multiple generating resources to bear and can rely on a large pool of other utilities is a better choice for reliability.

CORRECTIONS:

- Section 4.5.2.2-2 should be corrected to state that Pantex "draws its electrical power from the Southwest Power Pool," and the associated table needs to be corrected, as well. Also Section 4.5.3.2 contains the same error.

TSR–H–035
Comment Letter

1/16.06

It was described that in the decision making process, weighting factors would be applied to the various inputs. I would like to see this described in more detail and know the weighting factors before hand. This latter request lets the public know, in advance, what affect their input has on the final decision.

If we assume a simple weighting scheme of 1 thru 10 where an item of weight 10 is considered 10 times more important than and item with weight 1, then does the public hearing get:

- 4 – for mixed comments.
- 6 – for a gross majority of positive comments.
- 10 – for mass public opposition to DOE plans.

This assumes you will erroneously prejudice the process by assigning weights at the end of the process rather than predetermining the weights at the beginning.

We amateurs need more information to understand how this works and be motivated away from the apathy of government decision making.

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 18634 WASHINGTON, DC

POSTAGE WILL BE PAID BY ADDRESSEE

U.S. DEPARTMENT OF ENERGY
ATTN: OUTREACH OFFICER
DP-25
1000 INDEPENDENCE AVENUE, SW
WASHINGTON, DC 20077-5650

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

TSR–H–036
Comment Letter

PUBLIC HEARING FEEDBACK FORM

1. Location of the Meeting: Pocatello
2. Date of the Meeting: 4/17/95

Please Circle The Appropriate Number

	Very Good				Poor
3. Level of Knowledge about the Project before the Meeting	5	4	3	2	(1)
4. Level of Knowledge about the Project after the Meeting	5	4	3	(2)	1
5. Timing and Date of the Meeting	(5)	4	3	2	1
6. Location of the Meeting	(5)	4	3	2	1
7. Understandability of Displays and Handouts	5	(4)	3	2	1
8. Understandability of Presentations	5	(4)	3	2	1
9. Relevancy of Issues and Concerns Addressed	5	4	3	2	(1)*
10. Opportunities for Discussion	5	4	(3)	2	1
11. DOE Officials' Ability to Listen	(5)	4	3	2	1

12. How did you like the discussion group as a meeting format? It did not feel like a discussion group. Rather it was a [illegible] presentation.

13. How could the meeting and format be improved? It would have been helpful to get [illegible] specifically where the environmental impact [illegible] to be discussed.

1/19.01

14. What did you gain from the meeting? I felt as though no one was [illegible] my concerns. I maintain that building of the facilities [illegible] is a HUGE waste of money! Taxpayers money which should be spent on domestic problems not proliferation of weapons.

PLEASE CONTINUE ON THE OTHER SIDE IF YOU RUN OUT OF SPACE

THANK YOU - YOUR FEEDBACK IS IMPORTANT TO US

* I am a scientist, not a technical engineer. The presentations were not in my area of expertise. I question the government's [illegible] when they [illegible] the money they did to provide these forums to allow non-technical feedback on topics that the general population [illegible] to provide [illegible].

TSR–H–038
COMMENT LETTER

House of Representatives

Warren Chisum
STATE REPRESENTATIVE

DISTRICT OFFICE:
P.O. BOX 2081
PAMPA, TEXAS 79066-2081
(806) 665-3552

AUSTIN OFFICE:
P.O. BOX 2910
AUSTIN, TEXAS 78768-2910
(512) 463-0736

April 20, 1995

Secretary of Energy Hazel R. O'Leary
c/o Office of Reconfiguration, DP-25
U.S. Department of Energy
PO Box 3417
Alexandria, Virginia 22302

Dear Secretary O'Leary, Hazel

I am glad to be able to support expansion of the Pantex plant in Amarillo through this hearing.

1/13.08.01 As Chairman of Texas' Environmental Regulation Committee, the environment is of special concern to me. The environmental safety at Pantex is particularly important to me. I believe that because of Pantex's safety record and efficiency, it is an obvious choice for

2/14.03 expansion. It is also an excellent candidate to remain in the Nuclear Weapons Complex and an active participant in the disposal and storage of fissile materials.

3/14.09 Research is important to DOE's decision making process, and I support the establishment of the Amarillo National Resource Center at Pantex. I believe the Center managed by the Higher Education Consortium will prove a valuable resource to the DOE.

I look forward to working with you and Pantex in the future.

Sincerely,

Warren Chisum
Warren Chisum,
State Representative

WC/lh

District 88: Carson, Childress, Collingsworth, Dallam, Donley, Gray, Hall, Hansford, Hartley, Hemphill, Hutchinson, Lipscomb, Ochiltree, Roberts, Sherman, Wheeler

TSR–H–039
COMMENT LETTER

Comments on the Draft PEIS for the Supply & Recycling

From: TRISH NEUSCH
HCR 2 BOX 19
PANHANDLE, TX. 79068
(806) 335-9723

As an adjacent landowner/farmer my husband Ronnie and myself along with our three teenage children would appreciate your careful consideration of the

1/01.01 effects on the surrounding community of placing this facility in the middle of some of the richest producing agricultural land in the United States. Not to mention it will be located right on top of the only source of groundwater in the area, the Ogallala Aquifer.

2/04.02.01 It is glaringly apparent to us as well as the general public that our city leaders are concerned more with the effect of more jobs and dollars added to the economy than the adverse effects on our environment and local population. We, the neighbors of Pantex, may be few in number, but consider ourselves the most effected and most 'immediately affected' in the case of any accident, release, or contamination (whether real or perceived).

3/18.01 We would advise you to carefully consider also the harm that these documents/decisions are doing to any non-proliferation discussion/agreements that the United States is involved in.

Thank You —

COMMENTS OF SOUTHWESTERN PUBLIC SERVICE
AMARILLO, TEXAS

ON DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT
FOR TRITIUM SUPPLY AND RECYCLING

Affected Environment and Environmental Impacts

Good (afternoon; evening). My name is William Crenshaw; I am employed by Southwestern Public Service Company, the electric service provider to the Pantex Plant, as Environmental Issues Analyst. My responsibilities at SPS include reviewing environmental impact statements that potentially relate to company operations and interests, as does this draft programmatic EIS for Tritium Supply and Recycling. Today, I will share a very few, preliminary thoughts raised on first reading, especially of the fourth chapter, "Affected Environment and Environmental Impacts."

A second SPS representative will remark on areas of interest and preliminary concern related to electrical supply issues. SPS expects to file further, written comments on the draft EIS at a later date.

Southwestern is committed to assisting economic growth in all the communities in our service territory -- some 52,000 square miles in the south plains and Panhandle of Texas, eastern New Mexico, the Oklahoma panhandle, and southwestern Kansas -- so long as that growth is protective of human health, welfare, and the environment. The company is headquartered in Amarillo, and is particularly sensitive to, and typically supportive of, ongoing and proposed missions at Pantex Plant.

We are entirely supportive of continued consideration of Pantex as the site of the nation's tritium supply source, and of a tritium recycling facility.

I have reviewed the possible environmental impacts of those potential missions at Pantex, as presented in the draft EIS; and I am convinced there is no apparent, significant, adverse impact of the missions to natural resources or to human health, welfare, and environment. 1/13.08.01

I am impressed that the environmental effects of citing the tritium missions at Pantex essentially would be benign. I think all reasonably foreseeable environmental effects and risks discussed in the draft EIS are acceptable. And I think Pantex Plant would be a superior site for the tritium missions.

I hope it will helpful to note briefly our few concerns with the statement as presented. I emphasize our concerns are few and minor, and that the larger environmental-impacts picture presented *clearly supports Pantex Plant as an excellent siting choice for tritium supply and recycling.*

I'll limit my remarks to six areas of interest.

(1) We can see no adverse impact of significance to threatened or endangered species. There is no "critical habitat" for threatened and endangered species on Pantex, and there is little undisturbed habitat at Pantex that would accommodate any of the listed special status species. It's clear from the EIS that impacts to any potentially affected special status species would be temporary, and that few mitigative efforts would be required for actions at Pantex.

The Draft, however (at p. 4-279), characterizes the five Pantex playa lakes as "important to migratory birds" and as "valuable habitat for nesting and wintering birds and waterfowl." We emphasize the Pantex playas are only five of some 20,000 essentially identical playas across the region. Any change to -- growth of, or diminution of -- playa habitat would not adversely affect species, and should not be considered to be of practical environmental concern.

In fact, potentially affected habitat for each listed species in the Pantex region is commonplace and abundant, and impacts on habitats need not be a concern at the Pantex site.

We also note: The only endangered species potentially affected at the site, the bald eagle -- apparently is to be down-listed to "threatened" status. Siting at Pantex would *not* threaten an endangered species.

In this regard: We suggest Table 3.6-1 should list t & e species for each candidate site with at least the specificity found in the Pantex column. The non-Pantex columns presently by contrast are overly generalized. 2/06.17

(2) The Department should add to independent school districts likely affected by the proposed action, the River Road ISD north of Amarillo. 3/08.11

(3) The Department speculates (at 4-296) that based on emission rates presented in appendix table B.1.4-4, Prevention of Significant Deterioration air quality permits may be required for each of the proposed supply technology alternatives at Pantex, and that "offsets" may be required for PSD permits. However, we see *no* emission rates that would trigger PSD review or permitting for *any* of the technologies at the Pantex site. We strongly encourage the Department to revisit this section of the EIS. 4/03.04

TSR–H–040
COMMENT LETTER

(4) We notice that for APT, "cooling system blowdown and sanitary wastewater ... would be treated and recycled for reuse as cooling system makeup." We encourage such practices in operation of any of the technologies, and suggest that to mitigate potential groundwater drawdown, the Department explore using such wastewaters from off-site suppliers, as well.

5/04.02.01 Further, we emphatically agree with the Department (p. 4-305): "obtaining water from other sources in the region should be considered."

DoE can be confident: If good water conservation practices, including reuse, are employed, the Pantex region can provide sufficient water for tritium supply and recycling, without increasing groundwater drawdown.

6/07.04 (5) At 4-311, the EIS reports, "Some Native American (archaeological) resources *would* occur" in Pantex site areas. Probably the statement reflects a typographical error in text meant to indicate such resources "*could*" occur.

7/02.01 (6) In 4.8, DoE estimates three years would be required to construct a 500 to 600 MWe coal-fueled steam electric plant. SPS, assuming normal permitting processes, suggests 6 years might be required.

8/08.10 The estimate of an operational workforce of approximately 290 persons at such a plant is effectively double Southwestern's staffing of similar plants.

9/04.02.10 The projection that five or six natural gas-fueled combustion turbine generators would require 590 MGY of water seems inordinate. That would equate to some 1,122 gpm, primarily for NOx control. SPS estimates NOx control water needs at such a turbine complex at fewer than 600 gpm.

Thank you.

TSR–H–041
COMMENT LETTER

~~LVSL - EPD1~~ :
~~another request~~ made for life cycle cost analyses
PTX Requests –
ATX - EPD1 :

1/18.04 Tony Watterman (?) - would like to have title of policy that ~~states~~ forbids the use of reactors for commercial purposes.

ATX - EPD 2:

1/18.04 | Tamara Cristo – would like to have same information as Tony Waltermann.

NTS requests –

LVN - MPDI :

1/13.00.17 | Thomas McGowen - Would like to know why other types of reactors have not been included?

TSR–M–001
COMMENT LETTER

March 15, 1995

Stephen Sohinki, Director,
Office of Reconfiguration
U.S. Dept. of Energy
P.O. Box 3417
Alexandria, VA 22303

Dear Mr. Sohinki:

It is extremely disturbing to learn that the Department of Energy proposes a new production facility for manufacturing tritium.

I am writing to urge that no such facilities be planned, and no funding for such planning be initiated.

1/18.01 The United States has an overwhelming nuclear arsenal, and is pledged through the Non-Proliferation Treaty to reduce its stockpile drastically. If we are to persuade other nations to sign and abide by the Treaty when its renewal is discussed shortly, we must demonstrate our commitment by our deeds.

Planning for future production of tritium is a contradiction of our non-proliferation goals.

2/10.02 Further, we have not yet devised adequate cleanup and storage procedures for the tremendous radioactive waste generated in the past. We should not compound this critical problem.

3/13.00.01 I recommend that the "No Action" alternative be adopted.

Sincerely,

Winifred Detwiler
4032 Crondall Dr.
Sacramento, CA 95864

TSR–M–002
COMMENT LETTER

March 27, 1995

United States Department of Energy
P. O. Box 3417
Alexandria, Virginia 22302

Dear Employee:

1/18.01 We, the undersigned, do hereby declare our total opposition to the creation of a National Ignition Facility (NIF)! We urge you in the strongest manner we can to give up any plans to build the NIF. The NIF, if created, would violate the U. S. Nonproliferation Treaty, which was ratified in 1970. We, our country, which includes you, are committed to the cessation of nuclear weapons production and testing and to complete nuclear disarmament under that Treaty. The NIF would be illegal, unconstitutional, immoral and a violation of that Treaty, which is the highest law of our land.

Sincerely,

ALAN V. HORN
1325 Paloma Ave.
Burlingame, CA. 94010

Dr. Elisheva E. Martin-Horn
1325 Paloma Ave.
Burlingame, CA. 94010

TSR–M–004
COMMENT LETTER **PAGE 1 OF 1**

MR. SOHINKI, 3-30-95

1/13.00.01 I AM WRITING TO URGE YOU TO SUPPORT THE "NO ACTION" ALTERNATIVE WHEN CONSIDERING THE CONSTRUCTION OF A NEW TRITIUM FACILITY.

AS A NATION WE SHOULD BE REDUCING OUR NUCLEAR WEAPONS STOCKPILES AND WORKING WITH OTHER NATIONS TO HELP THEM DO THE SAME.

2/20.01 INSTEAD OF REDUCING FUNDS FOR CLEANUP AND WASTE MANAGEMENT, AND PRODUCING MORE TRITIUM – WE SHOULD BE DOING THE OPPOSITE!

Steve Hunt

3015 NE 22
PORTLAND OR 97212

TSR–M–005
COMMENT LETTER **PAGE 1 OF 1**

Steven G. Fruscella
1019 South Bowie Street
Amarillo, TX 79102

March 28, 1995

US Department of Energy
P.O. Box 3417
Alexandria, VA 22302

SUBJECT: Comments for Tritium Supply and Recycling DPEIS

Dear US DOE:

Since I will probably not be able to attend the public meeting in Amarillo on April 20, 1995, I am submitting comments in support of the Pantex site for location of tritium production and recycling.

I have been a resident of Amarillo since January 1983 and I have observed very closely activities at Pantex from environmental and economic perspectives. I believe that the management at Pantex has been outstanding regarding the handling of dangerous materials and they would do a very good job in expanding the scope of operations to include tritium supply and recycling.

1/13.08.01 I strongly support the Pantex site as a well managed plant for tritium supply and recyling. Pantex has in my observation received overwhelming support from residents in the vicinity.

Sincerely,

Steven G. Fruscella

TSR–M–006
COMMENT LETTER **PAGE 1 OF 1**

MARCH 30, 1995

U.S. DEPARTMENT OF ENERGY
P.O. BOX 3417
ALEXANDRIA, VA 22302

GENTLEMEN:

AS A 17 YEAR RESIDENT OF NEVADA AND A WORKER AT THE NEVADA TEST SITE, I FEEL THAT IT WOULD BE BENEFICIAL TO THE DOE AS WELL AS THE STATE TO HAVE THE TRITIUM ACCELERATOR PRODUCTION PROJECT ASSIGNED AND LOCATED AT THE NEVADA TEST SITE.

THE NTS HAS BEEN OPERATIONAL FOR OVER 35 YEARS AND IS A FAVORABLE SITE TO A PROJECT OF THIS NATURE. THE TEST SITE WORKERS ARE LOYAL RESIDENTS WHO BELIEVE IN THEIR COUNTRY AND GOVERNMENT AND WILL GIVE TOTAL SUPPORT.

1/08.02 THE TRITIUM FACILITY WILL BOOST THE ECONOMY AND WILL HELP MAINTAIN A LIFE-STYLE THAT MANY RESIDENTS HAVE ACHIEVE BECAUSE OF THE DOE AND THEIR OPERATIONS AT THE NTS. IT WILL ALSO GIVE OUR NEW RESIDENTS AND THOSE WHO ARE HAVE NOT BEEN SO FORTUNATE THE OPPORTUNITY TO BE EARN A BETTER LIVING AND BE SELF-SUPPORTIVE.

PLEASE SUPPORT US IN THIS ENDEAVOR.

LOIS J. PRIHEPA
1720 REXFORD DR - 3A
LAS VEGAS, NV 89104

TSR–M–008
COMMENT LETTER **PAGE 1 OF 1**

John C. Haas
339 N. Spring Mill Road
Villanova PA
19085-1737

March 27, 1995

Mr. Stephen Sohinki, Director
Office of Reconfiguration
U. S. Department of Energy
P. O. Box 3417
Alexandria, VA 22302

Dear Mr. Sohinki:

Re: TRITIUM PRODUCTION

1/13.00.01 The Defense Department has proposed $50 million in FY1996 to begin work on a new facility to produce tritium (which it has not made since 1988). This is for hydrogen bombs, and comes at a time when nuclear warheads will be reduced in number under the START II treaty. (Tritium can be recycled from dismantled weapons if needed.)

More tritium (and more nuclear arms) are not needed.

I urge the Department of Energy to choose the "No Action" alternative for tritium supply and I urge you to support his choice.

Sincerely,

JCH

P.S.

As past Chairman of the Business Executives for New Age Concerns here in the Delaware Valley, I have been following the threat of nuclear arms with keen interest.

JCH

Linda Ewald
949 Pondfield
Knoxville, TN
37923

U.S. Dept. of Energy
Office of Reconfiguration
P.O. Box 3417
Alexandria, VA 22302

I am concerned about the siting of tritium supply and recycling facilities. I live in Knoxville, Tennessee, work in the Environmental Science Division of Oak Ridge National Laboratory and am a member of the Oak Ridge Environmental Peace Alliance. I am opposed to siting the tritium facilities at Oak Ridge. There is more than enough hazardous materials to deal with from dismantlement of nuclear weapons components and storage of highly enriched uranium, plus the "legacy" left behind. Please remove Oak Ridge from the list or place it very low.

1/13.07.01

Sincerely,
Linda Ewald

1705 Alpine Dr.
Aiken, S.C. 29803
(803)-648-3515

March 19, 1995

US Department of Energy
PO Box 3417
Alexandria, Va. 22302

TRITIUM SUPPLY & RECYCLING PEIS

In the event I am unable to appear at a hearing on this matter, I offer these comments.

My first point is, why the rush to build a new tritium production facility? I expect it is the Department of Defense that sets the need and the timing. If so, they need to take a new look at realistic threats to US security and what is needed to respond to them. In my view, thermonuclear bombs IN LARGE NUMBERS are now totally irrelevant in maintaining an adequate defense of the United States against any reasonable threat. The timing for a new tritium supply must be based on a need to keep at least 5000 thermonuclear warheads at the ready. If one were to say that "only" 300 of these missile-silo busters were more than adequate in today's world, we would have enough tritium with no new supply out to the year 2050. DoE should use its influence within the Administration to force a fresh, and serious, review of our tritium needs.

1/20.09

There are two cogent arguments against moving too soon to commit to a new tritium supply. The most obvious is to save a lot of money, clearly felt to be more important today than it was several years ago. A new tritium production facility is likely to cost close to $10 Billion to build, checked out AND GET AN OPERATING TEAM TRAINED TO RUN IT. Operation is likely to cost in the area of a billion dollars a year. With a fixed or declining budget, there must be better ways to spend that kind of money for Defense or to reduce the deficit.

The second reason may be as important. As long as we have not moved to start construction of a new tritium plant, we have left the door open to negotiate a multi-national treaty to halt production of new tritium supplies, and let its natural decay signal the gradual phase out of these indiscriminately destructive

weapons. Alternatively, our decision to get back into tritium production would send a clear message to other nations- particularly those not yet in the nuclear club- that we intend to be prepared to use GREAT NUMBERS of thermonuclear bombs far into the future.

1/20.09 continued

My use of the word "thermonuclear" is deliberate. Without any tritium, we would still have available the materials for a very large number of atom bombs, of the kind that devastated Hiroshima and Nagasaki. And with only a limited need now to destroy missile silos, a 20,000 ton atom bomb should be more than devastating enough for most targets. For the hawks in DoD or elsewhere who seem to fear resurgence in militarism in Russia, I urge a look at the revulsion of the Russian people to the killing and destruction in Chechnya. Is this a people that can be talked into risking thermonuclear war?

If this plea to put off a decision on a new tritium supply for, say, 20 years falls on deaf ears, I do have a few thoughts on where it might be sited, and where it should not.

First, where. The US, and with DoE as our agent, is in dire need to find an acceptable place to store high level radioactive waste, such as that which will eventually be packaged at the SRS waste vitrification plant. As I understand it, the Nevada Test Site may be preferred on geological and environmental grounds for this, but one must face the "not in my backyard" syndrome. What better way to soften that kind of opposition than to offer Nevada a "plum", such as a new tritium production facility, in exchange for it accepting high level waste.

2/13.09.04

Then, where not? The present management of the Savannah River Site has been grossly substandard in at least two respects. First, the huge and unnecessary buildup of personnel following Westinghouse's selection as site manager wasted lots of money and created community problems then. If DoE does not realize this, I urge it to look at the number of temporary classrooms in the communities around SRS, with new schools being built as quickly as could be justified. Now with the inevitable cutbacks, those growing pains are changing to loss of jobs with all the personal hardships that will involve, and additionally, lots of small businesses will face difficult times or bankruptcy. Westinghouse and DoE did Aiken County no favor by its mindless expansion.

2/13.09.04 continued

A second argument against SRS in the tritium "sweepstakes" is that the most important thing needing done at SRS has been to get the high level waste out of the old underground tanks and secured as quickly as practical by vitrification. Westinghouse, presumably with the concurrence of the SRS DoE office, has dragged out the start up of this facility for years. Du Pont had essentially completed construction of this facility by late 1989, when site management was turned over to Westinghouse. In 1989, I understand Du Pont projected the vitrification plant should be fully operational within two years of then, that is, by the end of 1991. Here it is more than three years later than that, and we are still probably a year away from start up. There may have been some problems requiring correction, but to take 6 years to start up a facility as urgently needed as this one shows bad management and is delinquent in the extreme. SRS should not be given ANY new, important mission, including a new tritium plant, until it can show that it can handle efficiently this vital job it has been given to do.

Victor J. Reilly

TSR-M-011
COMMENT LETTER

JACQUELINE BUTLER, Ph.D. Clinical and Consulting Psychology
3414 Benham Avenue, Nashville, Tennessee 37215 (615) 383-0737

April 3, 1995

Stephen Sohinki, Director
Office of Reconfiguration
U.S. Department of Energy
P.O. Box 3417
Alexandria, VA 22302

Dear Mr. Sohinki,

Given current actions towards increased arms reductions and other international events, it appears that DOE could continue to reuse tritium from dismantled weapons until well beyond 2011 with no adverse affect on U.S. nuclear deterrent capability.

1/13.00.01 *Therefore, I urge you to support the DOE "No Action" alternative for building a tritium production facility at this time.*

2/20.01 *In the meantime, I also encourage you to do everything in your power to counter any efforts to reduce funds allocated for environmental clean-up.*

Thank you for your consideration.

Sincerely,

Jacqueline Butler Ph.D.

Jacqueline Butler, Ph.D.

TSR-M-012
COMMENT LETTER

March 29, 1995

To Whom It May Concern;

This letter is in regards to expanding Pantex. I realize that most residents here see the potential expansion as a financial boon. This is extremely short-term thinking.

1/10.24 I am worried about the effect the toxic waste dumps will have on the Panhandle's environmental health. Our water is already contaminated; and quality checks are not as 'quality' as they should be.

2/04.02.01 I want our children to have clean air, water, and land. We are taking irreversible risks, all for the mighty dollar. This decision will affect generations to come.

3/01.01 What about the rest of our nation.

4/06.01 And especially since this area is devoted to agriculture?... the area's wildlife? Are these as expendable as well?

I don't want an apology after things go wrong; I don't want monetary compensation. I want a healthy safe environment.

As impressed as I am with the new open-policy at the DOE, I don't want these dangers for Texas or anywhere in this world. There will always be mistakes; there will always be accidents. These risks aren't worth the short-term financial incentive.

Sincerely,

Jan [illegible]
6401 Claremont Dr.
Amarillo, TX 79109

TSR–M–013
COMMENT LETTER **PAGE 1 OF 1**

March 29, 1995

To Whom It May Concern:

1/08.02 Suspension of the nuclear weapons testing program has resulted in the loss of thousands of jobs in the Las Vegas area. Many of these are highly skilled technical and management positions.

The Nevada Test Site has the existing infrastructure and trained work force to support a facility such as the proposed tritium production and recycling facility. In addition, the site is remote, so the health risks to the offsite population are virtually nonexistent.

2/13.06.01 I understand that a Programmatic Environmental Impact Statement for construction of the tritium production facility is currently under development. It is my hope that the Department of Energy will determine that the Nevada Test Site is the best location for construction of this facility.

Sincerely,
Patricia Herrin
Patricia A. Herrin
2893 Petunia Court
Henderson, Nevada 89014

TSR–M–014
COMMENT LETTER **PAGE 1 OF 1**

Comment

1/15.01
- Excellent format and "facilitation" — DOE is to be congratulated.
- Steve Sohinki's presentation, poise, knowledge, etc — superb!

F. R. Monroe
Foothill

ABB COMBUSTION ENGINEERING COMMENTS ON
THE DOE DRAFT TRITIUM PEIS

(A more thorough set of written comments on the draft tritium PEIS will be provided prior to the May 15 deadline. The following paragraphs summarize the most significant shortcomings of the draft.)

1/16.07

1. The draft PEIS does not provide any economic evaluations -- especially, estimates of government costs -- for the technologies considered. Without such information, it is not possible to weigh the relevance of any differences between the technologies. For example, comparing the difference in consequences for accidents that might happen once every 100,000,000 years would seem trivial if it is realized that one technology may cost taxpayers $15,000,000,000 more than the other. Economic evaluations should also consider that the facilities might be privatized -- substantially reducing government costs.

2/13.00.02

2. The draft PEIS does not consider the relative maturity of the technologies under consideration. The more immature the technology, the greater the risk that implementation of that technology will result in substantial cost overruns and schedule delays that may threaten the technology's ability to begin supplying tritium when it is needed for national security purposes.

3/02.04

3. The draft PEIS does not consider the environmental impacts of generating the 550 megawatts of electricity that will be required to run the accelerator at full power. Adding this much demand to any utility's grid, during the 2010 to 2050 operational period of the facility, will certainly require that the utility construct an equivalent generating capacity. The environmental impact of constructing the plant and burning fossil fuel will likely exceed the environmental impact of the accelerator, itself. Segmenting the EIS process, to ignore the electricity generation, will lead to incorrect comparisons between the technologies.

Although the draft PEIS addresses the impact of a potential on-site electric generation plant, the evaluation is inadequate. For example, the evaluation does not include the number of latent fatalities that would result from air, water, and land pollutants emanating from the plant, during normal operation. After correcting this evaluation, the environmental impacts of the on-site source should be assumed to apply to the accelerator, independent of whether it is physically on-site or is owned by the regional utility. These impacts should be added to those of the accelerator, itself, in all sections and tables of the PEIS.

4/13.00.05

4. The draft PEIS does not consider the environmental benefits of the electricity generated by the reactor options. For example, the System 80+ large Advanced Light Water Reactor (ALWR) would generate up to 1,350 Mwe of electricity. This would allow the neighboring utilities to avoid constructing an equivalent amount of fossil fueled plants to generate electricity. Although the draft PEIS expresses ideological concerns about the sale of electricity from a nuclear facility that is also producing tritium, the PEIS also notes that there are no legal nor treaty restrictions against doing so. The sale of electricity would provide substantial environmental benefits (by avoiding new fossil fueled units) and would save taxpayers over ten billion dollars. The nation cannot afford to forego this option, in order to support some ill defined esoteric ideology. The environmental impacts of equivalent fossil fueled generating capacity should be calculated and credited as benefits for the reactor options.

5. The draft PEIS grossly overstates the potential for radiation releases from ALWRs during "low to moderate consequence accidents". The results are completely wrong. For example, on page F-28, the PEIS presents a table showing that a large break loss of coolant accident in the ABWR on Savannah River Site (SRS) would produce a site boundary dose of 14 rems and 230 latent cancer fatalities. The table puts the frequency of such an event as once every 1,000 years. On page F-26, the PEIS notes that values were not calculated for System 80+ because the data was not available. (In reality, the data was available from ABB-CE, but was simply not requested.) Other sections of the PEIS refer to the ABWR results as representing both of the large ALWR designs. These results are completely in error for System 80+ and we assume that they are equally wrong for the ABWR.

For System 80+, there would be no measurable offsite release and no fatalities. In the first place, the probability of a large break loss of coolant accident is less than once every 1,000,000 years, because the reactor piping meets the Nuclear Regulatory Commission's (NRC) criteria for "leak before break" -- i.e., the piping is designed with sufficient ductility and is monitored with leakage detection systems so that the reactor could be safely shut down before small leaks turn into large breaks. Even if such an accident did occur, the plant is designed to withstand it. No fuel rod failures would be expected and, therefore, no measurable radiation releases would result.

5/11.00.08

6. The draft PEIS seeks to preempt NRC licensing standards by placing significance upon accidents that might happen every 100,000,000 years. In section F.2, the PEIS discusses "high consequence accidents" for ALWRs. Although the nature of the assumed accident is not described, it is assumed to occur twice every 100,000,000 years. Why this particular accident frequency was chosen as significant is not explained in the draft PEIS. Other sections of the PEIS refer to the results (even in the executive summary), as if the results conveyed some significance -- when, in reality, they do not.

In establishing the safety goal for ALWRs, the NRC stated that "the overall mean frequency of a large release of radioactive materials to the environment from a reactor accident should be less than 1 in 1,000,000 per year of reactor operation." Subsequently, the Electric Power Research Institute (EPRI) proposed that ALWRs meet a conservative goal of keeping accident frequencies less than once every 1,000,000 years for any accidents that produce releases exceeding 25 rem whole body dose over 24 hours at 0.5 mile from the reactor (i.e., the site boundary).

In the NRC's Final Safety Evaluation Report for the System 80+ design, the NRC concluded that the probability of exceeding the 25 rem criterion was once every 20,000,000 years. This probability is about 20 times better than the EPRI goal. The NRC also noted that "the risk is very low compared to the current generation of operating plants". Furthermore, the total exposure over a 50 mile radius was estimated to be 17 person-rem over a 60 year plant life -- based upon population and weather data developed by EPRI to bound 80% of the reactor sites in the United States. Using the conversion factors proposed in the draft PEIS, such an exposure would result in no measurable latent fatalities.

Based upon these, and many other findings, the NRC issued a Final Design Approval of the System 80+ design in July 1994. There is no logic for the draft PEIS to attempt to preempt the

TSR–M–015
COMMENT LETTER **PAGE 3 OF 3**

5/11.00.08 continued

NRC's safety findings by placing relevance upon extremely low probability accidents. Instead, the PEIS should simply incorporate the results of the NRC's approval of the design.

6/13.00.35

7. The National Academy of Sciences (NAS) comments about combining the plutonium disposition and tritium production missions were taken out of context and not adequately explained. On page A-99, the draft PEIS refers to statements in the NAS plutonium disposition report which question the desirability of combining the disposition of excess weapons plutonium with tritium production, in the same reactor facility. However, the NAS report qualified its views by noting that "tritium production was not part of the committee's charge, and it has not examined alternatives for this purpose in detail." It also assumed that "tritium production capacity will be easier to provide than plutonium disposition capacity." Yet, DOE is known to be leaning toward a tritium production technology that will cost taxpayers on the order of $20 billion, over its lifetime. This would appear to negate the NAS committee's assumption that tritium production will be easier than plutonium disposition -- or, at least, we sincerely hope so.

7/13.00.60

8. The draft PEIS should acknowledge that only the large ALWR is capable of simultaneously satisfying the full tritium production mission and the plutonium disposition mission, with relatively little added environmental impact. The PEIS notes that a single large ALWR could easily satisfy the 3/8 goal tritium production mission and simultaneously consume the 50 MT of excess weapons plutonium in about 30 years of operation. The only added environmental impact would be for the fuel fabrication facility -- which is relatively minor, when compared to the plant itself. This would present a major argument for combining the two missions in a single large ALWR facility.

8/13.03.02

The PEIS notes that the gas cooled reactor would require two or four times as many units to carry out both missions simultaneously. (Both factors are used in different sections of the PEIS.) As evaluated in the draft PEIS, this would double or quadruple the environmental impact for this technology.

The PEIS incorrectly assumes that a single small ALWR could simultaneously carry out both missions. However, a single small ALWR would require well over 60 years to consume the 50 MT of excess plutonium. Therefore, the PEIS should be corrected to assume at least two small ALWRs for the combined missions. Furthermore, there is a great deal of skepticism that a single small ALWR could achieve the 3/8 goal for tritium production. It would seem more reasonable for the PEIS to assume that two small ALWRs are required -- even with a uranium core.

(For completeness, it should be noted that ABB-CE's proposal to DOE, for a privatized multi-purpose System 80+ reactor, assumed two units would be constructed -- so that the plutonium disposition mission could be completed in 15 years of operation. For comparability, a 15 year plutonium mission would require that the number of gas cooled reactors and small ALWRs also be doubled again, from the previous paragraphs.)

George A. Davis
Project Manager - System 80+ Deployment, U.S Nuclear Systems Development

ABB Combustion Engineering Nuclear Systems
Combustion Engineering, Inc.
P.O. Box 500
1000 Prospect Hill Road
Windsor, Connecticut 06095-0500
Tel. (203) 285-5207
Fax (203) 285-5388

ABB

TSR–M–016
COMMENT LETTER **PAGE 1 OF 2**

1/14.04

Dear Sirs,

I am writing to ask you to STOP the shipments of spent radioactive fuel to Idaho.

What you have sent to the INEL to this point is not even stored safely. The area is prone to earthquake and sits over the Snake River Plain Aquifer. It represents a tremendous danger to our beautiful State.

You must not allow the rest of the Country to ignore this problem by burying it in Idaho.

1/14.04 continued

Keep the waste where it is until a scientifically credible, publicly developed national waste policy can be developed –

Thank You.

Mary Malkmus
Box 4389
Ketchum, ID 83340

April 4, 1995

Theodore R. Fanning
HC 66 Box 53156
Pahrump, NV 89041

U.S. Department of Energy
P. O. Box 3417
Alexandria, VA 22302

COMMENT RE: Tritium Production

The Nevada Test Site is a large tract of land that is already controlled by the US government, remote from population centers, and has facilities and equipment available. There are skilled craftsmen, technicians and scientists already employed that could serve as an employee base for the tritium production and recycling program.

1/13.06.01 The Nevada Test Site is being phased out and many jobs have been lost; the tritium facility would bring much needed employment to southern Nevada. As a life-long resident of Nevada, I would welcome the tritium production facility.

Sincerely,

Theodore R. Fanning

TSR–M–019
COMMENT LETTER **PAGE 1 OF 1**

1803 Moreno St
Nashville, TN 37208
3/31/95

Stephen Sohinki, Director
Office of Reconfiguration
U.S. Dept of Energy
P.O. Box 3417
Alexandria VA 22302

Dear Mr. Sohinki

I understand that the DOE is contemplating the possibility of starting up a tritium reactor for nuclear weapons production after having stopped such production in 1988.

1/18.01 I believe such an action will be clear evidence that the U.S. is preparing to increase its capacity to engage in Nuclear war. This to me is exactly opposite to what we should be doing since with the "Start II" arms reduction plans we will be reducing our nuclear arms stockpile along with Russia. This is two-faced, working at cross purposes with our, and the world's wish to cease nuclear war preparation.

2/13.00.01 I urge D.O.E. to choose the "No Action" alternative for tritium supply. We should not add to the U.S. financial deficit by such a paradoxical start-up program.

Sincerely Nelson Fuson

TSR–M–020
COMMENT LETTER **PAGE 1 OF 1**

1/13.06.01 I favor the siting of the Tritium Facility at the NTS Especially the HWT

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 19524 WASHINGTON, DC
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U.S. DEPARTMENT OF ENERGY
ATTN: OUTREACH OFFICER
DP-25
1000 INDEPENDENCE AVENUE, SW
WASHINGTON, DC 20077-5650

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

Comments:

1/08.02 | IT IS MY OPINION THAT NV. NEEDS GOOD QUALITY JOBS. I WOULD LIKE MY KIDS TO HAVE THE OPPORTUNITY TO WORK IN A TECHNICAL TYPE JOB. A JOB OTHER THAN THE GAMING INDUSTRY. I AM IN FAVOR OF THESE TYPES OF PROJECTS FOR NEVADA

FRANCIS K. IVEY
317 So. TORREY PINES
LV. NV. 89107

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

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FIRST-CLASS MAIL PERMIT NO. 19534 WASHINGTON, DC
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WASHINGTON, DC 20077-5650

Testimony to the Draft Tritium Supply and Recycling Programmatic Environmental Impact Statement Scoping Meeting on April 5, 1995

My name is Frank Beers. I am a registered Professional Engineer in Nevada and have worked in the Nuclear Weapons Complex for the past 36 years. I have been a nuclear weapons designer for Sandia National Laboratories, a Device Engineer for Lawrence Livermore National Laboratory, and have personally designed, assembled, and fielded nuclear explosives for experiments at the Nevada Test Site.

I am currently employed by Raytheon Services Nevada as a Project Manager. I have managed the effort to design and construct the new Combined Device Assembly Facility for the past 11 years. Paramount in that effort is my responsibility for the preparation of the Device Assembly Facility Safety Analysis Report.

These statements synopsize my professional qualifications. I am also the father of two grown children who live and work in Las Vegas and are growing families of their own. I know, from my personal experience, that the activities planned to construct and operate facilities to rejuvenate and maintain our nation's tritium supply will not jeopardize the safety of my children and grand children one iota. The DOE's process of documenting each activity and hazard, studying the consequences, and designing mitigation features virtually eliminates any credible adverse consequences to the public and to related workers. 1/11.00.10

Thank you for the opportunity to speak.

Frank T. Beers III, PE
Post Office Box 328
Mercury, Nevada 89023

TSR–M–023
COMMENT LETTER

1/22.01 What is the estimated cost of accelerator-produced tritium versus reactor-produced tritium?

Capital cost comparison?
Per gram of tritium cost comparison?

TSR–M–023
COMMENT LETTER

2/09.09 The nuclear weapons stockpile stewardship and management program may be centered at a distant site (other than Savannah River where the tritium recycle facility is presumed to be located) in the Year 2010.

Wouldn't this require large amounts of tritium from and for weapons being worked on in another location (other than Savannah River) to be shipped back and forth to some distant location?

Has the cost impact of this transportation of tritium been evaluated?

Can states, counties, or municipalities interdict (stop) such shipments from passing through their jurisdictions to make this proposition invalid in 2010?

3/13.09.02 There have been 2 unsuccessful (aborted) attempts to sell a New Production Reactor for tritium at the Savannah River Site and several unsuccessful attempts to restart tritium production reactors at the Savannah River. These have cost billions of dollars with no result. Data should be set forth and quantified as in the EIS.

4/13.09.07 The DPEIS assumes, as its basic tenant, that there will be a viable tritium recycling facility at Savannah River in 2010 (15 years from now) when the Tritium supply facility comes on stream. This is a major assumption in the report that is questionable and has not been validated.

How much did this facility cost?

What is it worth today?

How much will it cost to upgrade it by 2010?

TSR–M–024
COMMENT LETTER **PAGE 1 OF 1**

Name: DALE KEILER

# of Pages in Comment:

Date of Receipt: 4/15

1/16.06 (1) The EIS should list the factors affecting the technology & Site Location decisions and their weighting factors

2/22.01 (2). Life cycle costs of the proposed technology alternatives should be major factor considered in the ROD.

3/14.01 (3) This action should be integrated with the other PEIS activities pertaining to the weapons complex, [redacted]

4/15.04 (4) The political influence of the South Carolina delegation should not be a factor in the decision.

TSR–M–025
COMMENT LETTER **PAGE 1 OF 5**

STATEMENT BY SENATOR HARRY REID
PUBLIC HEARING ON TRITIUM SUPPLY ENVIRONMENTAL IMPACT STATEMENT
LAS VEGAS, NEVADA, APRIL 5, 1995

Nevada Test Site has served an important role in our nation's nuclear deterrent for over 40 years. Nuclear testing has been critical to assuring the safety, reliability, and performance of our nation's nuclear weapons. We have conducted over 800 nuclear tests at our test site.

But the Nevada Test Site has been more than a nuclear test site. It has supported both nuclear and non-nuclear projects that require the features of a remote site and the capabilities of a high technology multi-disciplinary workforce.

We, in Nevada, value the important role we have played in the past and we look forward to continuing to play a critical role in the future maintenance of our nation's nuclear deterrent capability.

We believe that the capabilities that have been developed for testing and experimentation are equally valuable to the future of the stewardship of the nuclear stockpile in an era without nuclear tests. One area where we can apply these skills effectively is in the construction and operation of an accelerator based capability for the nation's tritium supply. 1/13.04.17

I strongly urge the Department to choose the accelerator based technology over a reactor based production technology. The environment and safety benefits of the accelerator technology are reason enough to choose accelerators. Additionally, the accelerator promises to have additional technological benefits and offer possibilities in transmutation and medical isotope production.

Especially important to the state of Nevada is the lack of nuclear waste production with an accelerator. Why add to the waste problem when we don't have to?

2/13.06.01

The Nevada Test Site workforce is uniquely suited to support the accelerator based production of tritium. In our support of nuclear testing we have worked closely with the nation's weapons laboratories and developed a skilled workforce that has proven its capability to work effectively with the laboratory scientist and engineers on high technology projects. We have excelled at teaming with the laboratories, with work being done both at the laboratories and at the Test Site, and with a multi-disciplinary skilled workforce moving between sites as the technologic challenges demanded.

The tritium project, if it is built around accelerator based production of tritium as I suspect it will be; will require the same high tech, multi-site, multi-discipline teamwork.

The location of the Test Site, being centrally located with respect to the weapons labs, and being an essential element of the enduring nuclear complex, make it especially well suited for the development, construction and support of an accelerator for the nation's tritium supply source.

An accelerator based tritium supply facility will require a high technology workforce to support it and close collaboration with the laboratories in the development and operation of the facility. Nevada has proven its capability to supply such support.

In evaluating sites for the tritium supply, I also encourage you to give special attention to the long term lowest cost option for siting the tritium supply. The budget realities of our nation will continue to put pressures on the cost of maintaining our nuclear deterrent. We must search for the most cost effective solution to assuring the continuing reliability of our stockpile.

Initial analysis indicates that the future stockpile can be maintained in a core complex consisting of the three weapons labs and the Nevada Test Site. The test site is an essential element of this complex because of its unique capability to support nuclear tests in a national emergency, and its essential role in supporting stockpile stewardship experiments involving nuclear materials.

By siting the tritium accelerator at the Nevada Test Site we can avoid the costs of maintaining the infrastructure for separate single purpose site, and capitalize on the infrastructure already in place at the Test Site for support of experimentation and other stewardship functions.

I would also like to the Department to seriously evaluate the role that the Solar Enterprise Zone at the Nevada Test Site could play in the accelerator based production of tritium and the synergistic effects of these two projects.

3/13.04.05

To be cost effective many solar projects need long term assured customers, and the tritium production facility could be an ideal customer because of its ability to accept intermittant power.

If accelerator based production must compete with reactors that are allowed to sell power, then the availability and cost of a power plant to feed the accelerator must be considered in the decision on which technology to use for tritium production. Having a 100 to 300 megawatt solar electric source at the Nevada Test Site would seem to provide an attractive advantage for choosing accelerator based production and siting it at the Nevada Test Site.

In closing, I call on the Department to understand that the Nevada Test Site is an essential site in the nuclear complex of

the future, a site that will provide essential support for testing, experiments and stockpile management for the foreseeable future.

4/08.02

The Department has focused too much, and for too long, on our waste disposal capabilities and potential, and has failed to recognize our high technology national security workforce as a valuable resource for additional stockpile stewardship and stockpile management programs.

The Nevada Test Site is a national asset and the ideal location for many of our nations stockpile support activities. I look forward to a decision to build an accelerator for the production of tritium at the Nevada Test Site.

I thank you for your time and attention to this issue of great importance to our state and to our nation.

TSR–M–026
COMMENT LETTER **PAGE 1 OF 1**

APRIL 5, 1995

I WANT TO THANK-YOU FOR THE OPPORTUNITY TO PRESENT A STATEMENT CONCERNING THE DEPARTMENT OF ENERGY'S TRITIUM SUPPLY AND RECYCLING PROPOSAL.

1/18.05 I HAVE REVIEWED THE DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT CONCERNING THE TRITIUM SUPPLY AND RECYCLING PROPOSAL. EVEN IN TODAY'S POST-COLD WAR GEOPOLITICAL ARENA, THERE IS NO QUESTION THAT A SAFE AND DEPENDABLE SUPPLY OF TRITIUM IS NEEDED TO ENSURE THAT THE STRATEGIC COMPONENTS OF OUR NATION DEFENSE CONTINUES TO MAINTAIN ITS READINESS POSTURE.

DISTINCT TECHNOLOGIES ARE PROPOSED, IN THE PEIS, FOR FUTURE PRODUCTION OF TRITIUM. THESE INCLUDE SEVERAL TYPES OF REACTORS AND A PROCESS WHICH EMPLOYS AN ACCELERATOR. IRRESPECTIVE OF WHICH TECHNOLOGY IS CHOSEN, THE NEVADA TEST SITE REMAINS THE BEST CHOICE OF LOCATION FOR THIS PROGRAM. THE REASONS ARE NUMEROUS:

THE NEVADA TEST SITE IS A NATIONAL RESOURCE LOCATED IN A HIGHLY SECURE AREA SURROUNDED BY A LARGE BUFFER ZONE OF FEDERAL AND MILITARY LANDS.

APPROPRIATE INFRASTRUCTURE IN TERMS OF ROADS, ELECTRIC POWER ,WATER, SITE MAINTENANCE, EMERGENCY SERVICES, AND SUPPORTIVE RADIOLOGICAL FACILITIES EXIST TO MAINTAIN ANY OF THE PROPOSED TECHNOLOGIES.

2/13.06.01 THE NEVADA TEST SITE CONTRACTORS ARE A TEAM COMPOSED OF COMPETENT, HIGHLY SKILLED NUCLEAR WORK FORCE OF SCIENTISTS, ENGINEERS, AND TECHNICIANS.

UNLIKE FACILITIES SUCH AS THE SAVANNAH RIVER SITE, THE ENVIRONMENTAL IMPACTS TO THE AQUIFER AND PUBLIC GROUND WATER WOULD BE NEGLIGIBLE. RADIOLOGICAL RISKS TO THE PUBLIC WOULD BE EXTREMELY LOW. THE CALCULATED 50-MILE POPULATION DOSE PERSON-REM FROM TRITIUM ALONE IS THE LOWEST AMONG ALL PROPOSED SITES. CURRENT RADIOLOGICAL EXPOSURES (PERSON-REM) AT THE NEVADA TEST SITE REMAIN AMONG THE LOWEST, IF NOT THE LOWEST, OF THE MAJOR DOE WEAPONS FACILITIES.

IN CLOSING, I HIGHLY ENCOURAGE NEVADA'S LOCAL AND STATE GOVERNMENT'S AND OUR ELECTED OFFICIALS TO WORK TOGETHER TO ENSURE THAT THE NEVADA TEST SITE IS SELECTED AS LOCATION FOR THE DEPARTMENT OF ENERGY'S LONG-TERM TRITIUM PRODUCTION FACILITY. THIS ACTION WILL GUARANTEE A SOURCE OF LONG-TERM EMPLOYMENT FOR SOUTHERN NEVADAN'S AND ENSURE THAT THE STATE REMAINS COMPETITIVE IN THE ARRA OF HIGH TECHNOLOGY.

HARRISON F. KERSCHNER

TSR–M–027
COMMENT LETTER **PAGE 1 OF 1**

Name: Chris Brown

# of Pages in Comment: 1

1/18.01 Should consider an option with lower stockpile numbers in future. This is reasonable in light of current national defense policy of reducing the total number of warheads worldwide. We can do without a new technology for many more years if the stockpile is reduced. This will reduce costs and allow for other alternatives to be examined as the world wide stockpile of nuclear weapons is reduced.

2/13.00.01

TSR–M–028
COMMENT LETTER **PAGE 1 OF 1**

Name: Richard BARRE
# of Pages in Comment: 1
Date of Receipt:

AFTER ATTENDING THE MEETING IN LAS VEGAS ON APRIL 5, 95. MY COMMENTS ARE VERY POSITIVE FOR LOCATING THE TRITIUM ACCELERATOR AT THE NEVADA TEST SITE. THE ENVIRONMENTAL IMPACT IS VERY LOW. THE ECONOMIC IMPACT WOULD BE AN PLUS TO THE STATE. THE LOCATION AT THE N.T.S. WOULD BE IDEAL. THE N.T.S. AND SOUTHERN NEVADA HAS THE WORK FORCE OF SKILLED WORKER TO BUILD AND OPERATE THIS TRITIUM ACCELERATOR.

1/13.06.01

TSR–M–029
COMMENT LETTER **PAGE 1 OF 1**

Name: Glenda Ericson
# of Pages in Comment: 1
Date of Receipt:

1/13.06.01 The NTS seems to be a natural place to locate a tritium producing plant We have a desirable climate, are located away from major population centers, have a work force capable of filling the many jobs that would be available

2/13.04.01 The accelerator seems to be the best choice since it has levels of waste produced, and low impacts on human health We need jobs but we also must be responsible for what we do to the environment.

TRITIUM FACILITY PUBLIC HEARING COMMENTS

Good evening. My name is Danny Williams and I am an employee at the Nevada Test Site. As a Navy Commander fresh from the deck of a destroyer in the Caribbean, I arrived here in 1991 stationed with the Defense Nuclear Agency supporting underground nuclear testing activities. At the NTS, I found an amazing community of bright and dedicated people who; despite, and sometimes in spite of, their differing organizations and backgrounds; worked in an organization that built and safely executed extremely complex and technical underground nuclear tests in support of national programs. After several successful events, I was inspired to retire from a successful navy career and join the nuclear testing community.

TEST READINESS

1/13.06.01 Today, that community is restive even though it is poised to resume testing if called upon. However, in the absence of technical challenge, those bright and dedicated people are moving on to other challenging pursuits. It is in our national best interest to retain testing ability and losing these people degrades that ability. Siting the Tritium Production Facility at the NTS would provide a worthy technical challenge that would encourage those talented technical professionals to remain. The TPF builders and operators could form the essential test readiness cadre while building and operating the Tritium Production Facility which is, in one respect, also part of the Test Readiness Program. While other sites can claim most of the same benefits you will here tonight, none other has the Nation's nuclear test readiness program at stake.

SCHOLASTIC SYNERGY

2/13.06.02 DOE typically supports internships and provides other assistance to educational institutions in a major project's technical areas of interest. Graduates from these institutions are employed in the project. These synergistic relationships are good for both DOE and the schools involved. Regardless of the technology choice; (heavy water reactor, light water reactor, modular gas cooled reactor or advanced accelerator); locating the facility at NTS would stimulate both UNLV undergraduate and graduate engineering and physics programs and CCSN technical programs. Additionally, the linear accelerator technology could provide a world class high energy physics research tool. The existence of such a facility, useful for basic and applied research so close to UNLV, would provide a tremendous stimulus to University programs, and the presence of the University could support those research efforts that the tritium production mission could allow.

INDUSTRIAL DEVELOPMENT

3/08.08 Placing the tritium production facility at the NTS could also stimulate light industry development in Las Vegas. Many components for the TPF could be manufactured locally. An aggressive contracting program with a emphasis on obtaining required components locally would enhance the region's manufacturing base.

(702) 295-7785
DANNY B. WILLIAMS
Division Quality Coordinator
Environment, Safety, Health & Quality Division
Reynolds Electrical & Engineering Co., Inc.
PO Box 98521
Las Vegas, NV 89193 8521

The intent of the Nevada Alliance – formerly the Nevada Test Site Contractors Association – is to ensure DOE clearly understands the local interest in the Tritium production facility.

~~While it is difficult to anticipate which "issue" group you will be assigned, the following are key points you will want to try to make.~~

Key Points:

- The Nevada Alliance is a consortium of contractors, principally those conducting business for the Department of Energy at the Test Site, dedicated to the preservation and maximization of the site.
- The Test Site is excellently suited to activities like Tritium production because of its remoteness, arid climate, distant water tables, skilled labor force, and proximity to the two national laboratories involved in weapons design and production. (working relationship)

1/13.06.01

- The site is more than capable of providing the power and water needs through existing available resources.
- The accelerator technology makes sense for the U.S. Government
  - it has multiple commercial applications thus allowing the tax payer to maximize defense technologies (not spoken)
  - A reactor presents potential problems with treaties and disarmament negotiations that could easily be avoided with alternative technologies
- The Nevada Test Site and its surrounding communities have been deeply impacted by cuts in defense spending.
  - Employment down from just about 10,000 in 1990 to less than 5,000 in 1995. In a county with a population of less than 20,000, this is significant -- and does not even account for similar reductions in DOD business as well.

ERICH EVERUD

TSR–M–031
COMMENT LETTER **PAGE 2 OF 2**

- The loss of one job in this region results in three additional job losses in the county due the multiplier effect.
- The counties are interested in diversifying their economic base. The tritium production facility is an excellent first step.
- The Nevada Test Site is one of this country's greatest assets and it should be utilized. Siting the tritium facility at NTS would allow the U.S. to preserve important weapons production/testing skills and technology in a cost-effective and meaningful manner.

1/13.06.01 continued

Use a DOE site perfectly suited for weapons-related activities for the long-term, Not one being retired from the weapons complex.

TSR–M–032
COMMENT LETTER **PAGE 1 OF 1**

April 5, 1995

Gentlemen:

I am unable to attend the public hearing because of the distance and also because of a medical problem. However, I wish to register my protest against any more tritium. We do not need to contaminate our world any more than it already is, and as a concerned citizen I wish to request that you consider my position as part of your deliberations.

1/18.01

Sincerely,
Eleanor A. Zitin
23 Village Drive
Asheville, N.C. 28803
(704) 274-6870

Barry & Holly
TASHIAN

April 6, 1995

Stephen Sohinki, Director
Office of Reconfiguration
U.S. Dept. of Energy
PO Box 3417
Alexandria, VA 22302

Dear Mr. Sohinki,

As a citizen, taxpayer and concerned American, I am writing to comment on the plans which are laid out in the draft: "Tritium Supply and Recycling Programmatic Environmental Impact Statement" (PEIS).

1/18.01 It is my understanding that the Department of Energy feels it needs to have a new tritium facility in operation by the year 2011. There are a lot of good reasons why this plan should not be implemented. Mr. Sohinki, the proliferation of radioactive products is a matter of great concern. There are so many life-threatening hazards in the world today, radioactive and otherwise. I feel we must strive to reduce the hazards anywhere we can. I feel that this is a moral responsibility for all residents of our society.

Thanks to the START II treaty, many of the deadly arms in both Russia and the US are being dismantled. Some of the needed tritium could, of course, come from these dismantled weapons. Bearing in mind the future possibility of additional reductions in arms, we could have plenty of tritium already to fulfill the DOE's needs well beyond 2011. This approach would be similar to recycling in other areas of society, ie; paper, glass, metals,etc.

2/12.02 There are a lot of serious environmental problems that now exist at nuclear weapons sites. If the funds allocated for environmental cleanup are reduced by 9%, as I understand

3/19.01 is proposed, we are only putting off the inevitable, leaving it to our children to clean up the mess we've made. This can be likened to the budget deficit problem.

4/18.01 Why is the Administration proposing to spend money on an un-needed program that contradicts the non-proliferation treaty it will try to negotiate in New York next month?

5/13.00.01 It is a dangerous world, it is true, with more nations striving for nuclear capabilities. But the US has a huge supply of all arms materials needed for it's (and the world's) protection. Lets not resume production of tritium. I urge the DOE to choose the "No Action" alternative for tritium supply.
Sincerely

Barry M. Tashian

Tashian Music
P.O. Box 160921
Nashville, TN 37215

Tel: 615-383-8948 Fax: 615-292-6722

April 5, 1995

Hazel R. O'Leary
Office of the Secretary
U. S. Department of Energy
P. O. Box 3417
Alexandria, VA 22302

Programmatic Environmental Impact Statement for Tritium Supply and Recycling (DOE/EIS-0160)

Dear Madam Secretary:

Why is procurement of tritium not considered an alternative method of meeting demand?

Volume I of the Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling states that DOE proposes to provide tritium supply and recycling facilities for the (nuclear weapons) complex. It further states that the alternatives considered for tritium supply and recycling consist of four different supply technologies and five locations. The four technologies under consideration are Heavy Water Reactor, Modular High Temperature Gas-Cooled Reactor, Advanced Light Water Reactor, and Accelerator Production. Rightfully, the no action alternative has been included to satisfy the NEPA requirements.

I suggest that every year as you go through the PEIS process for tritium supply that you survey the world market for tritium supply. By obtaining quotations for tritium supply, DOE will establish a cost per kilogram of tritium. Knowledge of this value will permit DOE and OMB to make a legitimate make/buy decision. Any PEIS submitted without analysis of a procurement option will be fatally flawed.

DOE is currently participating in the procurement of 500 tonne of Russian HEU blended to LEU. Since the world market is awash in uranium, there is little need to buy this material now. If DOE wishes to support the Russian economy, why not buy a service we need when we need it - tritium production in ten years.

1/13.00.16 Please consider the procurement of tritium as one of the options that must be analyzed as part of the PEIS process.

Sincerely, Yours,

Charles R. Bieber

Charles R. Bieber
604 Riverbend Rd.
Clinton, Tn. 37716

TSR–M–035
COMMENT LETTER

April 8, 1995

Stephen Sohinki
U.S. DOE

Dear Mr. Sohinki;

1/13.00.01 This is a vote for not resuming production of Tritium. Please go with the 'No action' alternative for a Tritium supply.

Sincerely,

Glenn Marshall
513 Tavern Hill Rd.
Jonesborough, TN 37659

TSR–M–036
COMMENT LETTER

Thomas J. Burns, M.D.
4235 Skyland Drive
Kingsport, TN 37664

Stephen Sohinki, Dir.
Ofc. of Reactor Fuels
U.S. DOE
P.O. Box 3417
Alexandria, VA 22302

USA 19

Dear Mr. Sohinki: 4-7-95

1/13.00.01 I am writing to strongly encourage a "no action" decision regarding the building of tritium facilities. Given the START II treaty, it seems irresponsible & wasteful to spend money in this way when tritium can be recycled & our own nuclear arsenal not be depleted. Please advise me as to your stance on this important issue.

Sincerely,
Tom Burns

CHARLES & JOY LORD
P.O. Box 464
Pleasant Hill, TN 38578

April 7, 1995

Dear Sir:

My wife and I are dismayed that the DOE is planning to increase nuclear weapons spending and reduce funding for environmental cleanup. With the huge deficit caused largely by military buildup, how can anyone propose increases for nuclear weapons? You should reduce weapons and increase cleanup.

1/14.02

Also you are having a PEIS on tritium supply. We oppose any increase in tritium and support the "No action" alternative. Otherwise you contradict the NPT you are trying to negotiate.

2/13.00.01

Sincerely,
Charles & Joy Lord

Vicki P. Tolbert
6161 Acorn Road
Bartlett, Tennessee 38134

Apr. 4, 1995

Mr. Stephen Sohinki, Director
Office of Reconfiguration
U.S. DOE
P.O. Box 3417
Alexandria, VA 22302

Dear Mr. Sohinki,

I believe the DOE should choose the "No Action" alternative for tritium supplys.

1/13.00.01

Sincerely,
Vicki Tolbert

TSR–M–039
COMMENT LETTER **PAGE 1 OF 1**

8 April 1995

Dear Mr. Sohinki,

I am writing in regard to the draft "Tritium Supply and Recycling PEIS."

1/19.01 We do not need to boost the nuclear weapons program spending. The

2/18.01 program violates the non-proliferation treaty that the U.S. is trying to negotiate.

3/13.00.01 Please choose the "No action" alternative presented in the PEIS and use the money for environmental

1/19.01 continued cleanup instead.

Sincerely
Kathy Sjodquist
Box 1003
Norris TN 37828

TSR–M–040
COMMENT LETTER **PAGE 1 OF 1**

Amarillo National Bank

BILL WARE
EXECUTIVE VICE PRESIDENT

April 11, 1995

Secretary O'Leary
Office of Reconfiguration
DP-25
U.S. Department of Energy
P.o. Box 3417
Alexandria, Va. 22302

Dear Secretary O'Leary:

We certainly think Pantex would be an ideal location for Tritium Supply and Recycling. Pantex is a vital part of our community, and we urge you to consider this location for Tritium Supply and Recycling.

1/13.08.01 The infrastructure is already in place, and we feel it would be the most inexpensive avenue the government should take. Pantex has a tremendous amount of local, as well as statewide, support. Our utility costs are some of the most inexpensive in the nation, and we have quality of life second to none.

Thank you very much for your consideration.

Sincerely,

Bill Ware

Bill Ware
Executive Vice Pres.

PLAZA ONE BOX ONE AMARILLO, TEXAS 79105-0001 806-378-6000

TSR–M–041
COMMENT LETTER **PAGE 1 OF 1**

Kathy O'Brien
1136 S. 3rd
Pocatello, ID 83201

Comments regarding DOE's tritium production plans

1/18.01 I strongly oppose building a tritium production facility. It is not needed. What is needed is further arms reduction, nuclear non-proliferation and cleanup of existing facilities. Tritium production would cost untold

2/19.01 too much money, money that is desperately needed to clean up the INEL and other sites.

1/18.01 continued Please do not build a tritium facility now in Idaho or anywhere else.

Sincerely,
Kathy O'Brien

Copies: Sens. Larry Craig, Sens. Dirk Kempthorne, Rep. Mike Crapo

TSR–M–042
COMMENT LETTER **PAGE 1 OF 1**

Dear Mr. Sobiecki,

I am writing to express my opinion and hope you will heed it.

1/19.01 I think the idea of a new site for tritium production is a poor use of our money, and really cannot understand the DOE's plans to build such a facility. Not only is our budget vastly overstrained already, but environmental cleanup is a much more financially needy area. Also, our non-proliferation (nuclear) program

2/18.01 will be jeopardized by such building, and I understand that tritium can continue to be used from dismantled weapons until beyond the year 2011.

Thank you for your consideration,

Elizabeth S Hoefer
12018 Couch Mill Rd
Knoxville, TN 37932

TSR–M–043
COMMENT LETTER

Ernest Morgan
1901 HANNAH BRANCH ROAD
BURNSVILLE, NC 28714

April 12, 1995

U.S. Department of Energy
P.O. Box 3417
Alexandria, VA 22302

Dear Friends:

I am writing to register my active opposition to the production of addtional tritium.

1/18.01 From both a fiscal and health standpoint it seems unwise, not to mention the political.

I hope you will seriously reconsider any plans for additional tritium production.

Sincerely,

Ernest Morgan

TSR–M–044
COMMENT LETTER

John Smithee
State Representative
District 86
Armstrong
Deaf Smith
Oldham
Randall

The State of Texas
House of Representatives
Austin, Texas

Committees:
Insurance
Chairman
Energy Resources

April 10, 1995

Secretary of Energy Hazel R. O'Leary
c/o Office of Reconfiguration, DP-25
U.S. Department of Energy
P.O. Box 3417
Alexandria, Virginia 22302

Dear Secretary O'Leary:

1/15.01 Thank you for this opportunity to express my support for retention and expansion of the Pantex Plant through the proposed draft Tritium Supply and Recycling Programmatic Environmental Impact Statement issued by the U.S. Department of Energy (DOE). I would like to compliment you and the DOE for holding this hearing to ensure that the public's views and concerns are fully considered.

2/11.00.29 I feel it is paramount that any current and future functions at Pantex be conducted in a safe and environmentally sound manner. The implementation of the expansion of Pantex should be done in a cautious way because the health and safety of area residents and the environment are top priorities.

3/14.03 I endorse the siting of any new activities to be sited at Pantex through the DOE's deliberations on the PEIS, given the assurance that such storage is safe and environmentally sound. I would also support a new tritium facility at Pantex, if the DOE chose Pantex as the preferred site. Pantex is ideal for expansion because of its existing capital plant, cost-effectiveness, and efficiency, and it should remain a crucial part of the Nuclear Weapons Complex and an active participant in fissile materials storage and disposition activities.

4/13.08.01

Capitol: P.O. Box 2910 • Austin, Texas 78768-2910 • 512-463-0702 • FAX: 512-478-7016
District: P.O. Box 12038 • Amarillo, Texas 79101 • 806-372-3327 • FAX: 806-379-8366

5/14.09 Research in the DOE's decision-making process would better allow us to meet these goals. I strongly support the recent establishment of the Amarillo National Resource Center at Pantex to examine these issues. I also would like to support the formation of the Higher Education Consortium by the Texas A&M University System, Texas Tech University, and the University of Texas System to manage the Amarillo National Resource Center.

Thank you for the opportunity to express my views.

Yours very truly,

John Smithee

Amarillo National Bank

April 12, 1995

RICHARD WARE II
PRESIDENT

Office of Reconfiguration
DP-25
U.S. Department of Energy
PO Box 3417
Alexandria, VA 22302

Dear Secretary O'Leary:

To the U.S. Department of Energy:

We would like to comment on the proposed draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling issued by the U.S. Department of Energy (DOE). We feel Pantex would be an ideal site for any new functions dealing with the Nuclear Weapons Complex or the storage and disposition of fissile materials (including the proposed new tritium production and recycling facilities), in whatever technology DOE chooses.

Local public support for the Pantex plant and any expansion is very strong as well as support from area and state elected officials. The Amarillo area can provide the project with a large, well educated and comparatively inexpensive labor pool. Average wage costs for manufacturing employment in Amarillo are 18% below the national average.

1/13.08.01 Southwestern Public Service Company can provide reliable electric service to a major expansion at Pantex at very reasonable prices, SPS being ranked in the lowest 11% among investor-owned utilities in Texas. Water is plentiful, inexpensive and readily available, and industrial wastes and sewage can be disposed of in nearby facilities.

The Pantex site is recognized as one of the cleanest which would result in far lower costs of remediation and site preparation. Its location near Amarillo offers easy accessibility to a tri-state region. The flat topography of the area, the environment and the moderate climate would allow practically year-round construction and operation of a new facility.

The excellent living conditions and educational opportunities the Amarillo area offers are tops in the nation and rank Amarillo as one of the most desirable places to live. The city of Amarillo also enjoys high quality medical, cultural and economic amenities as well as a broad selection of employment opportunities for family members of employees at a new tritium facility.

We strongly support the siting of any new functions at Pantex including tritium facilities. We appreciate your consideration of the Pantex Plant as a site for any new functions and wish you the best in your deliberations.

Sincerely,

Richard Ware II

PLAZA ONE 806 378 AMARILLO, TEXAS 79105 [illegible]

TSR–M–046
COMMENT LETTER **PAGE 1 OF 1**

April 13, 1995

Dear DOE,

1/20.01 Don't you have enough to clean up without building new tritium production facilities? I oppose my tax dollars being spent on new nuclear anything!

2/19.01 It's time for the US Government to grow up and get beyond the nuclear age.

3/18.15 DOE, you are currently on parole for nuclear misconduct. No more nukes for you.

- Jimmy Lindsey

TSR–M–047
COMMENT LETTER **PAGE 1 OF 1**

Dr. Marcia A. McDonald
3000 Hillsboro Road, No. 69
Nashville, Tennessee 37216

April 22, 1995

Mr. Stephen Schinki, Director
Office of Reconfiguration
U.S. Department of Energy
P.O. Box 3417
Alexandria, VA 22302

Dear Mr. Schinki,

1/13.00.01 In light of the reductions in nuclear bombs mandated by Start II, and in light of the ability to reuse tritium from dismantled bombs, the DOE should not develop a facility to produce tritium. I urge the DOE to choose the "No Action" alternative for the "Tritium Supply and Recycling Programmatic Environmental Impact Statement." The US should not attempt to maintain Start II nuclear levels into the next century. Instead, we should devote our resources and energy to reductions of our nuclear arsenal.

Cordially,
Marcia McDonald

Anderson Merchandisers

Amarillo ♦ Atlanta ♦ Dallas ♦ Denver ♦ Reno

April 12, 1995

Office of Reconfiguration
DP-25
US Department of Energy
P.O. Box 3417
Alexander, Virginia 22302

Dear Secretary O'Leary:

To the US Department of Energy:

1/13.08.01 Please accept this personal statement regarding the potential upgrade of the facilities at Pantex Plant to include recycling and production of weapons grade tritium. I do not believe you could find a better location and I believe the results of your Programmatic Impact Statement for Tritium Supply and Recycling will prove this out.

As you know from recent previous studies here by your department regarding plutonium recycling this area has an available, reasonable and talented work force. The state and local government have demonstrated their highest level of support repeatedly.

The local people are pretty much in favor of anything that offers potential opportunity to better an individual or the area without compromising our standards of being one with the environment and our fellow man.

From reading your literature on the potential sites, it appears to me that you have your work cut out for you as 2 or 3 of these locations can do this job. Whatever your decision, I hope it is right for our country.

Sincerely,

Frank O. Nelson
Vice President
Anderson Merchandisers

FON/vp

L. O'BRIEN THOMPSON
2900 South Polk
AMARILLO, TEXAS
79109-3644
(806) 372-1416
(Pho & Fax)

April 20, 1995

Office of Reconfiguration
DP-25
U. S. Department of Energy
P. O. Box 3417
Alexandria, VA 22302

Dear Secretary O'Leary: PEIS for Tritium Supply & Recycling at Pantex Plant

To the U. S. Dept. of Energy:

Your staff will evaluate the details of positive and negative parameters in site selection for the subject program. In several prior hearings the writer has offered comments in person but due to absence on May 20, 1995 the following observations relate to this activity:

1. The people of this area have a long history of appreciation for, and support of, complex governmental operations such as Pantex. A vast majority, although aware of the potential environmental problems, are confident that DOE and operators will exercise good judgement in current and future operations. Local and statewide leaders have publicly expressed their support for an expanded Pantex to cope with future national objectives.

2. Our climate is excellent. The work ethic of our people results in efficiency and reasonable labor costs. This is reflected, for example, in electric power costs lower than about 90% of other sources in Texas. Our geographic location, level and available land, living costs and transportation facilities are favorable to major expansion at Pantex.

3. Educational opportunities for families are excellent. A consortium of three major universities will make this area recognized worldwide in nuclear technology. Our living environment will be an inducement for technical people and scientists to choose this area for their professional employment.

Citizens of this area recognize the economic benefits of expanded Pantex operations. Although this is an important factor, the pride and satisfaction that permeates our people is the knowledge that we support major efforts to improve the quality of life for people everywhere.

1/13.08.01 We urge DOE to thoroughly consider placing tritium facilities at Pantex.

Sincerely,

L. O'Brien Thompson

L. O'Brien Thompson
Resident of Amarillo for 62 years

Selected items for better identification:

Prior Activities
- Petroleum industry.(44 yrs.), Chief Chemist and environmental concerns.
- Amarillo College Board of Regents (6 yrs.)
- Commissioner, City of Amarillo (6 yrs.)
- President, Texas Municipal League of Cities (1969)
- Texas Criminal Justice Council through appointment by former Governors Connally, Smith & Briscoe. Chairman under Smith & Briscoe.
- Member, Senate Committee on Land Use & Environmental Control. Appointed by former Governor Smith.
- Chairman, Regional Waste Management Study (1974)
- Amarillo "Man of the Year" - 1990.

Current Activities
- Honorary Member, Amarillo Chamber of Commerce. Member, Legislative Affairs Comm. (10 Yrs. +)
- Member, Amarillo College Foundation Board of Directors (5 yrs.)
- Member, Harrington Regional Medical Center Inc. Administrative Council (5 yrs. +)
- Honorary Chairman, Keep Amarillo Beautiful (3 yrs.) Conservation. & environmental concerns.
- Member, Board of Directors, Amarillo Industrial Development Corp. (5 yrs. +) Appointed by Mayor, City of Amarillo.

Las Vegas, Nevada
April 5, 1995

Tritium Supply & Recycling
U.S. Department of Energy
Post Office Box 3417
Alexandria, VA 22302

PUBLIC HEARING
APRIL 5, 1995, LAS VEGAS, NEVADA

My name is William G. Flangas and I reside at 4209 El Cederal, Las Vegas, Nevada 89102. I am presenting these comments in my capacity as a native Nevadan and a mining engineer experienced in nuclear testing activities. I am a graduate of the Mackay School of Mines, University of Nevada-Reno. I am experienced in operating in radioactive environments and am very familiar with the related hazards.

1/13.06.01

Facts to support consideration of the Nevada Test Site (NTS) as a candidate site for tritium supply and recycling may be summarized as follows:

- The NTS at Mercury has successfully served the nation as an outdoor laboratory for weapons testing and a host of other activities dating back to 1951. During this period, a highly skilled cadre of scientific, professional, technical, government, and craft personnel has been developed that has no equal anywhere in the nation and, in fact, the world. It is a thoroughly integrated, cohesive, and disciplined work force schooled in the complicated and often hazardous business of building and executing high tech experiments without losing sight of the safety, environmental, health, and quality responsibilities.

- The NTS is located in a sparsely populated area some 65 miles northwest of Las Vegas within the boundaries of the Nellis Air Force Range. The site is remote, has a large area for testing purposes, and is already dedicated to nuclear purposes. It has no population or agricultural encroachment, river systems, fast-moving underground aquifers, nor any public highways running through the area. Surrounded by mountain ranges, it has a

built-in natural security that can be, and has been, easily maintained. Its dry climate permits year-round activities with little or no weather delays.

- Because of the numerous underground testing and drilling projects conducted at the NTS over the years, its geological and hydrological suitability has been firmly established and it remains as one of the most highly studied and geologically mapped areas that exists anywhere in the world.

1/13.06.01 continued

- The former Nuclear Rocket Development Station (NRDS), now a part of the NTS, has available facilities whose replacement value amounts to hundreds of millions of dollars and which could be readily modified to serve new tasks. This includes such activities as remote handling, sidewall manipulators, sophisticated radiological controls, etc.

- The NTS team has developed a highly sophisticated scientific network to maintain the best possible personnel safety and health, both for its employees onsite and for public health and safety offsite. No effort is spared to achieve the highest standards possible. The NTS team fully recognizes that business can no longer be conducted in the U.S. the way it was as recently as a decade ago. The NTS team has enthusiastically accepted and energetically responded to the new regulatory requirements that affect the environment, safety, health, waste mitigation, total quality, etc.

The NTS team is profoundly proud of its major contribution to the nation's security and it has earned self-confidence in its ability to conduct high tech operations. The NTS team is eager to take on and successfully compete in this new task.

W. J. Flangas

W. G. Flangas
4209 El Cederal
Las Vegas, NV 89102
(702) 871-1730 (Home)
(702) 295-6642 (Office)

April 11, 1995

Mr. Stephen Sohinki, Director
Office of Reconfiguration
U.S Department of Energy
P.O. Box 3417
Alexandria, VA 22302

Dear Mr. Sohinki:

I feel that the Department of Energy is wrong in considering an increase in its nuclear weapons program especially the plans for a new facility to produce tritium.

The U.S is negotiating an international treaty for non-proliferation. How can we expect other countries to believe that we really seek control of nuclear weapons when we plan continued production of a principal ingredient for nuclear weapons?

1/18.01

All possible funds should be used for the clean-up and disposal of nuclear wastes at weapons facilities.

2/19.01

3/13.00.01 Please choose the "No Action" alternative of no new production facility.

Sincerely,
Isabel Chgeioni
ISABEL CHIQUOINE
31 Norton Ave.
Clinton, NY 13323

WILEY HICKS, JR., INC.
GENERAL CONTRACTOR
P.O. Box 10150 • 1301 West Third • Amarillo, Texas 79116-1150 • 806/376 5941 • FAX 806/376-4252

April 14, 1995

Office of Reconfiguration
US DOE
P. O. Box 3417
Alexandria, VA 22302

Dear Sirs:

I would like to take a moment to thank you for your continued efforts to research the use of Pantex for any new function dealing with the Nuclear Weapons Complex. Pantex is an ideal location for the use due to many positive factors:

The local area has shown overwhelming support for this facility in the past. The area's people realize what a positive force the Pantex Plant is to our economy. Our local public officials along with the Texas Congressional Delegation have pledged their continued support for the plant. Pantex brings steadfast strength to an economy that, based on agriculture, can fluctuate.

1/13.08.01 The local labor force is available and qualified for any necessary construction. Our average wage for manufacturing is 16% below the national average. That in addition to that fact many companies, like my own, have worked at the plant for over 20 years. This allows a more safe environment because these people all understand the need for a safe work place.

The existing facility operates smoothly and I feel certain new areas of technology would only enhance that tradition. The people at Pantex believe in their facility and that makes a definite difference. People working with confidence provide the best type of work place.

Member of Associated General Contractors of America

In closing, I would like to inform the DOE I enthusiastically support the siting of any new function at Pantex, including new tritium facilities. The major plus for Pantex is the support we give. I cannot imagine going into a place where I wasn't wanted. Again, I appreciate your time and consideration concerning the Pantex Plant and with you the best.

Yours truly,
WILEY HICKS, JR., INC.

James P. Hicks
PRESIDENT

JPH/ho

1012 Battery Lane
Nashville, TN. 37220
4-22-95

Mr. Stephen Sohinki, Director
Office of Reconfiguration
U.S. Department of Energy
P.O. Box 3417, Alexandria VA. 22302

re: reconfiguration

Dear Mr. Sohinki:

I ask you to support and work for the "No Action" choice on the "Tritium Supply and Recycling Programmatic Environmental Impact Statement." Your office has kindly mailed me information on this Statement, to which I am responding.

In my view it is futile and wasteful to continue making Cold War weaponry when the COLD WAR is over. International competition has moved to the arena of trade; military measures are not only costly and destabilizing to world peace, they are irrelevant.

1/18.01

As a Tennessean, a parent and grandparent and recycler, I am troubled that the Department of Energy continues to generate toxic pollutants and proposes building more facilities, in this case for tritium production. We need instead to phase-out and close-down existing plants, then use the funds released to clean up the pollution, especially at Oak Ridge.

2/13.00.16

Sincerely,
Hilchard Thatcher

TSR–M–055
COMMENT LETTER **PAGE 1 OF 1**

4/17/95

To U.S. DOE – re. tritium plans.
Alexandria, Va. ——

The New Production Reactor (NPR) project is like a re-occuring cancer & just about as welcome.

1/13.00.20 | Need has never been justified for more tritium to enhance the explosive power of nuclear weapons.

2/18.01 | This project doesn't fit with future arms reduction or with non proliferation goals.

3/19.01 | A request for 50 million dollars for 1996, sure doesn't fit budget cuts. Construction time along with multi-year operational costs (15 years) will reach into the billions.

I am unalterably opposed to this facility. My position is to do nothing.

Pat Clark
3120 Crescent Rim #305
Boise, Idaho
83706

P.S. I called this comment in - but I wasn't sure it was recieved! So - I just wanted to be sure.

TSR–M–056
COMMENT LETTER **PAGE 1 OF 2**

TOM HAYWOOD
STATE SENATOR
DISTRICT 30

Committees
ECONOMIC DEVELOPMENT
EDUCATION
NATURAL RESOURCES
• SUBCOMMITTEE ON AQUACULTURE

The Senate of
The State of Texas

CAPITOL OFFICE
P.O. Box 12068
Austin, Texas 78711
512/463-0130
TDD 512/475-3750

DISTRICT OFFICE
2525 Ker Ste 300
Wichita Falls, Texas 76308
817/767-2072
800/866-7330

April 20, 1995

Secretary of Energy Hazel R. O'Leary
c/o Office of Reconfiguration, DP-25
U.S. Department of Energy
P.O. Box 3417
Alexandria, Virginia 22302

Dear Secretary O'Leary:

1/15.01 | I want to express my full support for retention and expansion of the Pantex Plant through the proposed Tritium Supply and Recycling Programmatic Environmental Impact Statement issued by the U.S. Department of Energy (DOE). I want to compliment you and DOE for holding this important hearing to ensure both that public concerns and views are fully considered, and that Pantex remains a vital, environmentally sound facility for many years to come.

My number one priority is to ensure that any current and future functions at Pantex will be conducted in a safe and environmentally sound manner. Any expansion at Pantex must be implemented in a way that does not impair the health or safety of area residents or have an adverse affect on the environment.

2/13.08.01 | I endorse the siting of any new activities to be sited at Pantex through the DOE's deliberations on the PEIS, given adequate assurances that such storage is safe and environmentally sound. I would support a new tritium facility at Pantex, if DOE chose Pantex as the preferred site. Pantex is an ideal site for any new functions, because of the unparalleled local and statewide support enjoyed by the plant, lower labor and utility costs, lower costs to DOE through environmental soundness at Pantex, and other factors. Given the fiscal constraints faced by the federal government, cost-effectiveness, efficiency, and environmental soundness - all adding up to lower costs, especially when capital outlays necessary to transfer functions are factored in - should be of paramount importance in decision-making processes such as these. Pantex, because of its efficiency, cost-effectiveness, and existing capital plant, should be an obvious choice for expanded functions, and remain a vital part of the Nuclear Weapons Complex, as well as an active participant in fissile materials storage and disposition activities.

3/14.03 |

4/14.09 Finally, I believe that all of these goals can best be met through the inclusion of research in DOE's decision-making process. I strongly support the recent establishment of the Amarillo National Resource Center at Pantex, with adequate funding to examine these increasingly critical issues. In addition, I support the formation of the Higher Education Consortium by the Texas A&M University System, Texas Tech University, and the University of Texas System to manage the Amarillo National Resource Center. This consortium offers a wealth of resources to assist DOE in addressing these issues, which are of the utmost importance to our national security.

Thank you for the opportunity to express my views. I look forward to working with you on these vital issues.

Sincerely,

Tom Haywood

Alliance for JUSTICE
645 Washington Blvd. Baltimore, MD 21230 Tel. (410) 385-0893

April 19, 1995

Mr. Stephen Sohinki, Director
Office of Reconfiguration
US Department of Energy
P.O. Box 3417
Alexandria, VA 22302

Dear Mr. Sohinki,

Re: The building of a new tritium production facility.

1/18.01 As representatives of two Catholic Sisterhoods whose members are working with oppressed persons in many countries of this world, we write to implore you to reconsider the Department of Energy's proposed plan to build a new facility to produce tritium. During these days when the "world" is debating the extension of the Nuclear Non-Proliferation Treaty, it seems counter productive, to say the least, for the U.S. to begin a new plant to make material for nuclear weapons.

Such a facility is, we believe, an affront to those who wish to see the U.S. government abide by its obligations to negotiate cuts in nuclear stockpiles. How can the U.S. declare its position on nuclear non-proliferation and, at the same time, seek to produce more tritium for more nuclear weapons. Where is U.S. integrity? And what of the world's poor who beg for bread not bombs and an earth that cries out for a clean environment.

Please terminate any plans for additional tritium plants.

Peace to you.

Sincerely,

Mary Louise Lynch, M.M.S. — Sister Mary Louise Lynch, Medical Mission Sisters

Helen Scheel, M.M. — Sister Helen Scheel, Maryknoll Sisters

Committed to pursue justice in solidarity with those made poor.

TSR–M–059
COMMENT LETTER **PAGE 1 OF 1**

4/16/95

To whom it may concern,

1/13.07.01 | my husband, Frank Michael, and I are very much against the building of a tritium plant anywhere in Tenn. Thank-you.

Sincerely,

Annie Freeman
102 The Farm
Summertown TN
38483

Frank Michael
102 THE FARM
SUMMERTOWN TN
38483

TSR–M–060
COMMENT LETTER **PAGE 1 OF 1**

P.O.Box 921
Lake Junaluska,NC 28745-0921
April 18, 1995

U.S.Department of Energy
P.O.Box 3417
Alexandria, Virginia 22302

Dear Sir:

RE: Tritium Supply and Recycling PEIS
Public Comments

1/18.01 | 1. I am against the further production of tritium.

2. We have enough tritium for the next fifteen years, I believe.

2/10.02 | 3. There is no safe way to dispose of nuclear waste.

3/18.01 | 4. The United States and other countries must stop the production of nuclear materials.

Sincerely yours,

J.C. Phillips, Jr.

J.C.Phillips, Jr.
Ref.10831

P.S. Please send notice of the results of the Public Hearings and your further action on this matter. Thank you.

JCP

LEAH R. KARPEN
518 Ox Creek Road
Weaverville, NC 28787
April 12, 1995

To: U.S. Department of Energy
P.O Box 3417
Alexandria, VA 22302

Tritium Supply and Recycling

I represent the Asheville Branch of Women's International League for Peace and Freedom.

Along with three other women, I attended the public meeting at Oak Ridge, Tennessee on April 12. I was appalled not only by the idea of manufacturing tritium but by the many uncertainties surrounding the proposed project.

1/13.00.02 | None of the experts present could give a cost estimate for the alternative methods of production. Some of the methods were still in an experimental stage; many uncertainties surrounded the ultimate design.

None could give an answer as to disposal of radioactive waste that would result from the production.

2/18.01 | At a time when the world is trying to rid itself of nuclear weapons, I can see no reason for further tritium supply and recycling. The use of nuclear weapons, in view of the horrible consequences, is unthinkable. It is bizarre that our country would even be thinking of establishing such a facility as proposed.

I find none of the alternatives proposed to be acceptable. Instead, the U.S. needs to find ways of storing or ridding itself of present stockpiles of tritium.

Respectfully submitted,

(Mrs.) Leah R. Karpen

Casa Maria

CATHOLIC WORKER HOUSE
OF HOSPITALITY

1131 N. 21st Street P.O. Box 05206
Milwaukee,WI 53205 Phone: 344-5745

4-17-95

Dear Mr. Sohiaki,

We understand that there is a proposed tritium production plant at the Idaho National Engineering Laboratory, the Nevada Test Site, Oak Ridge Reservation, Pantex Plant and the Savannah River Site.

1/18.01 | We would hope that there will be a total abolition of the production of fissile materials for weapons. There is a need to stop the insanity of building more and more weapons. These weapons end up in the hands of many who do violence to others causing much unrest and sadness in the world.

2/11.00.12 | The production of tritium, a radioactive element, poses serious risks to health and the environment. Hundreds of thousands of curies of radiation have been released into the air and water by the Savannah River Tritium production plant. Radioactive elements cannot be safely stored for long periods of time. Already there are military bases that have such components making the land unable to be used ever again. This is a travesty.

3/18.03 |

Please work for the abolition of all weapons and not create more and more destruction of people, land and environment.

Thank you for your attention.

Sincerely,

Don Timmerman

TSR–M–063
COMMENT LETTER **PAGE 1 OF 1**

Hickory Nut Gap Farm
15 Clarke Lane
Fairview, N.C. 28730

To the U.S. Dept of Energy-
PO Box 3417
Alexandria VA 22302

April 19th '95

Dear Friends!

I and many members of my family of 6 children and their spouses oppose our government's 1/20.01 building a facility to produce TRITIUM.- We think the recycling technology is safer, and we know it is less costly -

Thank you for your consideration in this matter -

sincerely

Elspeth M. Clarke

TSR–M–064
COMMENT LETTER **PAGE 1 OF 11**

NRDC
Natural Resources Defense Council
1350 New York Ave., N.W.
Washington, DC 20005
202 783-7800
Fax 202 783-5917

May 30, 1995

Mr. Stephen M. Sohinki, Director
Office of Weapons Complex Reconfiguration, DP-25
United States Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

Attention: Draft PEIS for Tritium Supply and Recycling

Dear Mr. Sohinki:

Please find below an expanded version of the Natural Resources Defense Council's ("NRDC's") May 15 comments on the Department of Energy's ("DOE's") Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling (the "PEIS"). Unless we receive written notice to the contrary within ten days, we will expect that DOE will consider these comments fully as part of the PEIS process.

I. The Present Draft in Light of NEPA Requirements.

1/16.16 The current draft does not meet the requirements of the National Environmental Policy Act (NEPA) and its implementing regulations. The Council on Environmental Quality's regulations for implementing NEPA call the discussion of alternatives "the heart of the environmental impact statement." 40 C.F.R. § 1502.14. An EIS must discuss a reasonable range of alternatives, and an EIS that fails to do so violates NEPA. See, e.g., *Natural Resources Defense Council v. Morton*, 458 F.2d 827 (D.C. Cir. 1972). Because the draft analysis is not based on a reasonable range of estimates for the size of the post START II nuclear weapons stockpile in the period 2003-2050 -- the period when a tritium supply option would actually be constructed and operated -- this PEIS fails to analyze a reasonable range of tritium supply alternatives and thereby violates NEPA. The uneven treatment and inadequate discussion of some of the alternatives considered in the analysis also violates NEPA.

2/16.04 NEPA imposes a requirement for "sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public" through the analysis of alternatives in an EIS. 40 C.F.R. § 1502.14. The draft PEIS manifestly fails to meet this standard. Not only does it fail to identify a preferred alternative, it fails even to present a consistent set of criteria by which the preferred alternative could be selected in the future. The purported "Summary Comparison" table (ES-1) of tritium supply alternatives runs 31 pages in the "Executive Summary." A similar table runs 44 pages in Volume I (Table 3.6-1), and represents nothing more than a mechanical application of several possible production alternatives to a matrix of possible sites. Yet a third table, "Comparison of Environmental Impacts of the

NRDC Recycled Paper
40 West 20th Street
New York, New York 10011
212 727-2700
Fax 212 727-1773
71 Stevenson Street
San Francisco, CA 94105
415 777-0220
Fax 415 495-5996
6310 San Vicente Blvd., Suite 250
Los Angeles, CA 90048
213 934-4600
Fax 213 934-1210

Tritium Supply and Recycling Alternatives" is contained in Appendix I, and runs 95 pages. It is by no means clear that even hours of detailed study of the draft PEIS will reveal which alternative at which site entails the least overall environmental impact and public health risk for a given level of investment. Evaluating the environmental risks of various proposed alternative technology/site combinations relative to their financial costs is impossible because no cost data is presented. The draft fails to present a comparative, qualitative discussion of the environmental impacts of the various alternatives in a manner that would allow the concerned citizen, with a reasonable investment of time and energy, to gain an understanding of which options pose the least overall environmental burdens and risks. The lack of such a comparative, qualitative discussion of alternative environmental impacts is a clear defect in the current draft that must be remedied in the final PEIS.

2/16.04 continued

Moreover, it is unacceptable to suggest, as does the present draft, that having failed to identify a preferred alternative based on the analysis presented in the draft PEIS, the Department will continue to develop costs, technical risks, and schedule risks for the alternatives under consideration in order to select a preferred alternative for inclusion in the final PEIS. PEIS at 3-53. This strongly implies that the selection of a preferred alternative will be made on the basis of information not now available to the public in the draft EIS, an action that would be in plain violation of NEPA. In this case, the PEIS must be reissued as a draft incorporating such information, including comprehensive cost, technical risk, and schedule risk data.

II. Detailed Comments

3/13.00.06

A. The current stockpile plan does not represent the horizon of reasonable alternatives. The draft states that "the analysis in this [PEIS] is based on the requirements of the Nuclear Weapons Stockpile Plan" (NWSP) approved by President Clinton on March 7, 1994. PEIS at 2-1. The draft further states that "the Plan covers an 11-year period, specifies the types and quantities of weapons required, and sets limits on the size and nature of the stockpile changes that can be made without additional approval of the President." PEIS at 1-3. This document standing alone is not an appropriate basis for establishing the purpose and need for the DOE's proposed action, for the following reasons:

(1) the period covered by the NWSP does not extend through the construction phase, and does not even begin to address the operational phase (2010-2050) of DOE's proposed tritium supply and recycling capability -- therefore it cannot form

the basis for assessing stockpile tritium requirements and supply/recycling alternatives in the PEIS;

(2) an EIS for a tritium supply and recycle capability for the years 2010-2050 must take into account reasonable -- indeed likely -- alternatives not presently accounted for in the NWSP for 1994 (or 1995, assuming Appendix CA in the final PEIS will contain updated stockpile plan information). By definition, the range of "reasonable alternatives" for tritium supply in the first half of the 21st century cannot be narrowed to sole consideration of the tritium "requirement" in an *already approved* government plan for the period 1995-2005. Not only does such a premature narrowing of options make a mockery of NEPA's requirement for analysis of reasonable alternatives, but the NWSPs themselves historically have been unreliable predictors of actual nuclear weapon requirements and force levels. They have in fact regularly overestimated future nuclear materials requirements.

3/13.00.06 continued

Moreover, the NWSP is by no means the only source of government approved guidance bearing on the question of long-term future tritium supply arrangements, now or in the future. For example, on May 11, 1995, the United States government, in concert with the other nuclear weapon state parties to the Nuclear Nonproliferation Treaty (NPT), adopted a "programme of action" for "the determined pursuit by the nuclear weapon-states of systematic and progressive efforts to reduce nuclear weapons globally, with the ultimate goal of eliminating those weapons,..."[1] An appropriate discussion of "reasonable alternatives" would therefore include the following:

(a) a stockpile drawdown versus tritium inventory decay curve, based on the "No Action" alternative for tritium supply, and on optimized purification, loading and reservoir exchange capabilities, showing year-by-year reductions and reconfigurations of the stockpile to adapt to a decaying tritium inventory. This analysis should incorporate various prospective "stopping points" along this drawdown curve, based on reasonable, alternative projections of future stockpile sizes and their corresponding "steady-state" tritium requirements. Points along this curve should reasonably include the possibility of: [1] the elimination or near elimination of nuclear weapons by or before the year 2050 --

[1] 1995 Review and Extension Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, "Principles and Objectives for Nuclear Non-Proliferation and Disarmament," NPT/CONF. 1995/L.S., 9 May 1995, p.2.

Mr. Stephen M. Sohinki, Director
Office of Weapons Complex Reconfiguration
May 30, 1995
Page 4

the time horizon of the present PEIS -- achieved on a schedule faster than or equal to that mandated by the decay rate of tritium; [2] a future "minimum deterrent" stockpile of 100 nuclear weapons, as advocated by a number of senior retired defense officials, such as former SACEUR General Andrew Goodpaster, former Secretary of Defense Robert McNamara, Livermore Laboratory Director Herbert York, and others; [3] START III and subsequent negotiated and/or unilateral reductions leading to a total stockpile of 1000 deployed warheads, as advocated the former Chairman of the Joint Chiefs of Staff, Admiral William Crowe, and former National Security Adviser McGeorge Bundy; [4] a START III Treaty by the year 2008 (i.e. five years after the treaty deadline for completion of START II reductions), leading to a total U.S. stockpile of 2500 warheads -- a 50% reduction from the currently planned level of about 5000 operational and 2500 "inactive reserve" weapons.

3/13.00.06 continued

(b) ratification, entry into force, and full implementation by Russia and the U.S. of the START II Treaty, leading to elimination after 2003 of the "inactive reserve" component -- amounting to approximately 2500 weapons -- of the current NWSP that is now slated for retention as a "hedge" against Russian noncompliance with START II. The size of this inactive reserve influences both the timing and scale of production capabilities needed to replenish the intended five year tritium reserve in the event of a missile uploading "contingency," which in all probability will no longer be required after 2003. In any event, the potential lack of a need for the "hedge" will be known seven years before the planned 2010 startup of a new tritium source, and therefore this possibility must be explicitly included in current reasonable alternative projections of future tritium requirements.

(c) reduction of any long-term tritium "reserve" from the current five years to whatever is prudently needed as a working and "pipeline" inventory to insure smooth operation of the tritium extraction, purification, reservoir loading, and reservoir exchange operations, pending startup of contingency production in the control rods of existing Light Water Reactors (LWRs).

4/13.00.49

B. The effect of tritium's decay on U.S. nuclear deterrent capability is exaggerated. The draft PEIS states that once the "strategic tritium reserve" is used up -- in "approximately 2016" according to Figure 2.1-1 -- the "nuclear deterrent

Mr. Stephen M. Sohinki, Director
Office of Weapons Complex Reconfiguration
May 30, 1995
Page 5

capability would degrade because the weapons in the stockpile would not be capable of functioning as designed. Eventually, the nuclear deterrent would be lost." PEIS at 2-2.

This statement is open to serious misinterpretation. It wrongly appears to equate the number of D-T boosted weapons in the U.S. stockpile with the existence of a U.S. "nuclear deterrent *capability*," which would clearly persist even without boosted weapons in the stockpile. Without additional tritium production, the performance of some (not all) weapons would begin to degrade in subsequent years and they would have to removed from the operational stockpile -- which weapons are removed would be a matter of choice -- and a sizeable number (e.g 500 - 1000) of high priority D-T boosted weapons could be retained in the stockpile for several more decades using tritium recycled from retired weapons. During this period, which would last for several decades, the United States could, if required, produce conservatively designed, unboosted gun-type and implosion-type pure fission weapons that would assure the persistence of a "nuclear deterrent capability" with or without testing for an indefinite period. Even two-stage thermonuclear weapons could be manufactured using unboosted primary stages, and a smaller number of the resulting heavier warheads could still be carried by bombers and ballistic missiles, originally designed to carry 8 to 24 of the more efficient boosted weapons. We are aware of no technical experts who would dispute the technical feasibility of this course of action.

4/13.00.49 continued

C. Baseline tritium requirements are presented in a misleading manner. The discussion in Chapter 3 of Tritium Supply and Recycling Alternatives is inadequate and potentially misleading to those without a detailed prior knowledge of what is being discussed. It is bizarre and misleading to define the "baseline requirement" as being composed of a "steady-state" requirement (for an unknown number of weapons) to make up for the tritium lost through natural decay and a "surge requirement" to replenish within five years the loss of a tritium reserve stockpile to some unspecified "emergency" or "contingency." PEIS at 3-1. This definition stands logic on its head. The "baseline" requirement should be defined as that quantity of tritium needed to offset tritium decay in a given stockpile, and any "surge requirements" should be considered as excursions above this "baseline" requirement.

5/13.00.26

Moreover, the current explanation of the "surge requirement" -- as the amount needed to replenish the "reserve" within five years -- begs the question of how and why this reserve would be depleted, and why it was established in the first place. Without a comprehensive justification of why an actual "reserve" -- rather than a reliable contingency production option -- makes sense for an inherently decaying asset such as tritium, and of the specific contingencies under which such a reserve might be

5/13.00.26 continued

used in weapons -- there can be no basis for the so-called "50% of baseline" requirement to replenish this reserve within five years. This whole analysis is built on intellectual quicksand, and requires a major rework.

6/13.00.66

D. The evaluation of Light Water Reactor supply options is uneven, biased, and fraught with contradictions. Construction of an Advanced Light Water Reactor under DOE ownership is assessed in detail for its potential impact on five individual DOE sites, yet analysis of DOE's potential purchase of an existing operational or partially-completed LWR is given a once-over-lightly "generic analysis" under the heading "Commercial Light Water Reactor Contingency." PEIS at 4.10. Why is an option that could save the taxpayer billions of dollars relegated to second-class "generic" treatment, while a similar LWR option costing billions more receives detailed site-by-site analysis? Moreover, this generic approach effectively equates the impacts of control rod production of tritium in eight utility owned, commercial LWRs under contract to DOE, with DOE's purchase or long-term lease of a single existing or partially completed LWR for production of tritium in fuel-target assemblies. The environmental, technical, institutional, and political impacts of these proposals are sufficiently different to warrant separate analyses as distinct tritium supply alternatives.

7/22.02

While discussed under the heading of "Commercial Light Water Reactor *Contingency*," the single reactor purchase option is described as "an option to meet the stockpile tritium requirement mission." PEIS at 4-465. Obviously, one does not satisfy a "baseline requirement" with a "contingency." If this is true, why then is the reactor purchase/completion option not discussed in detail in the main body of the "Alternatives" analysis? In Section 3.1.3, "Alternatives Considered but Eliminated from Detailed Study," this exclusion is explained as follows:

> Tritium could be produced directly in existing light water reactors by irradiating target rods made from lithium. However, the production of tritium for defense purposes in nuclear reactors which generate electricity for commercial sale would be contrary to the long-standing policy of the United States that civilian nuclear facilities should not be utilized for military purposes. Such use of commercial reactors would make the United States nonproliferation efforts much more difficult because other countries could demand equal footing. For this reason, DOE does not consider the use of commercial reactors to be a reasonable alternative for a long-term assured supply of tritium to be evaluated in the PEIS. PEIS at 3-7.

7/22.02 continued

This statement does not justify the exclusion of either the commercial reactor-purchase or control rod production alternatives from the full-scale analysis of tritium supply alternatives. It is not true that "the production of tritium for defense purposes in nuclear reactors which generate electricity for commercial sale would be contrary to longstanding U.S. policy..." Indeed, the N-reactor at Hanford produced plutonium for weapons and steam for electric power production for more than two decades, and Russian plutonium production reactors have long provided heat and electricity to their surrounding communities. While longstanding U.S. policy discourages the use of commercial civilian nuclear facilities for military purposes, this policy has not applied to the use of *military* nuclear facilities for *civilian* purposes. The DOE purchase/completion option for an existing LWR would convert the reactor involved to a government-run defense mission involving (potentially) the ancillary production of steam for commercial generation of electricity. DOE could own and operate the steam turbines and generators itself, or these could be owned and operated by a "civil" public utility that purchased steam from the DOE "military" plant. The nonproliferation policy implications of the reactor purchase option are not sufficiently different from the DOE's own proposed ALWR alternative, which includes the use of a next generation civil reactor design and the generation of electricity for commercial sale, to justify its "elimination from detailed study."

Moreover, the United States and its allies *have* used "civilian nuclear facilities" for "military purposes." The United States has used its enrichment plants to make highly enriched uranium for nuclear weapons and nuclear missile submarine reactor fuel. The United States also extracted the highly enriched uranium from spent civilian research reactor fuel and used it as "driver fuel" to produce tritium and plutonium for weapons at the Savannah River Site. U.S. allies France and the United Kingdom operate spent fuel reprocessing plants that have simultaneously served both civilian and military purposes. France has produced weapons plutonium in dual-purpose reactors and nominally "civil" reactors, such as the Rapsodie and Phenix fast breeder reactors. It is useful to recall that under the NPT, the vast majority of countries in the world are not allowed to maintain nuclear facilities for military purposes, so the issue of "separation" never arises. While a clear separation of civil and from military programs in nuclear weapon states is politically desirable, to discourage "misuse" of civil nuclear energy facilities for military purposes in nuclear threshold states, as discussed below, the universe of countries where this distinction applies is quite small, and the U.S. "example" may in fact be of little actual relevance.

Indeed, nothing in existing nonproliferation law or practice suggests that the United States could not *legally* produce tritium for military or civil purposes in a "civil" reactor. Indeed, tritium is not a material subject to IAEA safeguards, is not regarded

7/22.02 continued

as central to the proliferation problem, and is also produced for civil purposes, such as runway lighting and fusion energy research. "Federalizing" such a "civil" reactor under DOE ownership would be sufficient to harmonize this option with the nonproliferation "optics" allegedly demanded by present policy. Indeed, the tritium could be produced under IAEA safeguards to assure other nations that the DOE reactor was not also being used to produce plutonium for military purposes.

8/13.03.08

Moreover, it is argued elsewhere in the PEIS that "a power conversion facility (steam turbine) is an integral part of the design for the ALWR because of the high temperature of the exit coolant and will be included in this analysis.". PEIS at 3-36. And Appendix A states that the "ALWR and the MHTGR technologies offer the added benefit of being able of producing [sic] steam for electricity production that could prove to be desirable in offsetting operational and capital costs" (PEIS at A-99), and that "*the [ALWR] reactor would be an improved version of existing commercial electric power generating reactors* and would operate at or near rated power...Modifications to the design for tritium production would be minimal..." PEIS at A-52 (emphasis added). Indeed, one of the candidate ALWR designs, ABB-Combustion Engineering's System 80+, is essentially the same design as the System 80 units already in operation at the "civil" Palo Verde Nuclear Generating Station in Arizona, and as the "civil" KHIC/C-E reactors built under license in South Korea and recently offered to North Korea as an allegedly "proliferation resistant" inducement to end its plutonium separation program!

9/13.00.66

So the current PEIS analysis would have us believe that, on the one hand, DOE's purchase/completion of an existing LWR, such as WNP Unit 1 (65% complete) TVA's Bellefonte Unit 1 (88%) or Unit 2 (57%) or Watts Bar Unit 1 (99%) or Unit 2 (61%), is not worthy of detailed analysis due to lofty considerations of nonproliferation policy, but, on the other hand, that building *the prototype of the next generation standardized civil reactor expressly for military production at a DOE weapons program site, and subsidizing such production with the commercial sale of electricity*, is somehow entirely consistent with this alleged "policy!" The current PEIS analysis thus appears grounded on an untenable double standard. The apparent motive is to tilt the PEIS analysis in the direction of supporting the maximum expenditure of public funds at current DOE sites, and gaining the maximum public subsidy for the next generation of commercial nuclear power development.

10/22.02

In reality, there are a number of existing commercial reactors in the U.S. today that are candidates for early retirement because they have operation and maintenance costs in excess of $.04 per Kwh, the approximate cost of electricity from competing sources. The possibility exists that DOE might be able to purchase such a reactor for

10/22.02 continued

as little as the unfunded future decommissioning liability to the utility -- on the order of several hundred million dollars. Since this future liability also exists in the case of a new production reactor, it may well be possible for DOE to purchase an existing reactor for essentially nothing, because it could well be in the financial interest of the utility to give it away. The possibilities for such an early retirement "buyout" of an existing commercial reactor should be explored, and if feasible in concept, this option should be analyzed in detail in the PEIS.

The current draft misstates, or overstates, the proliferation significance of U.S. control rod production of tritium in civil reactors. Two points are relevant here. First, from a proliferation perspective, only those countries that already have nuclear weapons, and are seeking to advance to DT-boosted and two-stage thermonuclear weapons, would be in a position to point to the DOE's action and possibly seek to take advantage of it to justify a similar program. Which are these countries? For the last two decades, they have been India, Pakistan, and Israel -- i.e. countries outside of the NPT with significant nuclear weapons capabilities. But Israel and Pakistan have no "civil" nuclear program to speak of, and India already uses its "civil" reactors to produce unsafeguarded plutonium for weapons. Second, should they so desire, any non-weapon state party to the NPT could legally produce tritium in safeguarded civil reactors, or in *unsafeguarded* accelerators as long as no fissionable materials were present.

11/13.00.28

Today, for example, there is no legal or other barrier to Japanese or German production of tritium in safeguarded civil reactors for their fusion energy research programs, should they choose to do so. Since Japan is already producing and separating tons of *weapon-usable* plutonium in its safeguarded civil nuclear facilities -- including *weapon-grade* plutonium from breeder reactor blankets -- the production of tritium in safeguarded civil nuclear facilities alters the proliferation picture very little, if at all. At most, one could logically argue that any tritium production, extraction, purification or utilization in non-weapon states should occur under safeguards. Unless one is willing to bar the production of plutonium in "civil" facilities, it makes no sense to arbitrarily apply a higher nonproliferation standard to production of tritium -- a less strategically significant material -- in "civil" reactors, particularly when the penalty for doing so could well amount to *several billion dollars in additional spending on nuclear weapons* -- a fact that is itself not devoid of political significance for nonproliferation.

On the other hand, if the fear is that a country might cite "the U.S. example" to justify using a "civil reactor" for some *other* military use, such as plutonium production, the U.S. could preempt such a response by placing the civil reactors

11/13.00.28 continued | involved in control rod production of tritium under IAEA safeguards, and insist that any country contemplating similar production should do likewise.

12/22.02 | **E. Safeguards issues are not addressed.** In light of the May 11 commitment of the nuclear weapon states to "the immediate commencement and early conclusion of negotiations on a non-discriminatory and universally applicable convention banning the production of fissile material for nuclear weapons or other nuclear explosive devices,"[2] it is likely that any future tritium production for weapons will have to occur under some type of safeguards in any case. The safeguards dimension of the various tritium production options does not appear to be addressed anywhere in the draft PEIS -- a major omission. From a safeguards perspective, control rod production of tritium affords the least amount of disruption of the easily monitored high-burnup LWR fuel cycle for electric power production, and therefore a high degree of assurance that weapon-grade plutonium production is not surreptitiously being carried out in association with tritium production. The single reactor alternative involves more frequent refueling and therefore poses the prospect of more intrusive safeguards to deter possible violations of a cutoff agreement.

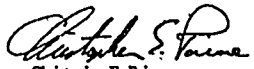
Taken together, the considerations enumerated in sections D and E above lead to the conclusion that the exclusion in the draft PEIS of both the control rod production in multiple civil reactors option, and the single-reactor "federalization" option, is premature and not sustainable on the basis of the analysis presented. Both of these options should be analyzed as full-fledged alternatives on a par with those already included and subjected to detailed analysis.

13/13.04.04 | **F. The discussion of power supply options to support operation of an APT is unduly limited to an analysis of coal and natural gas plants.**[PEIS Sec 4.8.2]. This discussion should be expanded to include the options of obtaining the necessary electric power for (a) the initial phase (100 milliamperes) APT, and (b) full size (200 milliamperes) APT, by investing equivalent sums in conservation and efficiency improvements to, and/or renewable energy sources for, the relevant regional grid that would supply the APT.

14/15.05 | **G. The analysis relies excessively on information that remains classified without adequate justification.** Finally, there is the question of the DOE's continued reliance in a major PEIS in the post-Cold War era on secret descriptions of future tritium requirements as the foundation for the alternatives analysis. We can find no

14/15.05 continued | justification for continuing to classify the number of kilograms in the overall tritium inventory, as well as the current and projected, active and reserve nuclear stockpile requirements. Declassification would allow citizens to draw their own conclusions regarding the reasonableness and urgency of future tritium supply and recycling alternatives. Indeed, declassification of such basic stockpile data is a necessary precondition for fully informed citizen participation in the important tritium decisions that DOE must make.

Respectfully submitted,



Christopher E. Paine
Senior Research Associate

Amarillo Globe-News

SouthWestern Newspapers Corporation

GARET VON NETZER
PUBLISHER

April 28, 1995

Office of Reconfiguration
DP-25
U.S. Department of Energy
P.O. Box 3417
Alexandria, Virginia 22302

Dear Secretary O'Leary:

I was unable to attend the DOE hearings April 28 in Amarillo, but I would like to comment on the proposed draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling issued by the U.S. Department of Energy.

People in Amarillo and this region strongly support the Pantex Plant and its mission. They always have, thanks to the plant's efficient and safe operation by Mason & Hanger. Public support of the Pantex Plant appears to be as strong or stronger than that for any other DOE complex facility.

1/13.08.01

I understand that the Pantex Plant is one of several possible sites being considered for location of new tritium production facilities. This area strongly supports such an expansion at Pantex, and we hope DOE will consider Pantex seriously for relocation of this function which was discontinued several years ago at the SRS Plant.

Amarillo has a lot going for it.

The Pantex Plant has the fewest environmental concerns of DOE plants, making it one of the most economical sites for the tritium facilities. DOE already owns 10,000 acres which could be used for expansion. Thus, the Pantex Plant makes economical sense in this era of cost-containment concerns.

Amarillo Daily News | Amarillo Globe-Times | Amarillo Sunday News-Globe
900 Harrison • P.O. Box 2091 • Amarillo, Texas 79166 • Phone (806) 376-4488

Page Two

1/13.08.01 continued

Amarillo provides a wonderful quality of life for those who live and work here. It is a trade center for 35,000 square miles, and as such, it provides an outstanding level of medical care and education (a university, community college, graduate engineering program with Texas Tech, a vocational school and fine public education facilities for dependent children), outstanding cultural opportunities, a strength in employment opportunities for dependents of Pantex employees and a healthy environment.

The newly formed National Resource Center for Plutonium, being managed by a consortium of Texas Tech, Texas A&M and the University of Texas, offers outstanding possibilities for the future as peaceful uses of plutonium are studied. A great deal of plutonium is being safely stored at the Pantex Plant now, and for that matter, has been for a long time. This area has a lot of confidence in DOE's ability to safely store these pits.

Amarillo has demonstrated a strong work ethic. We have good local contractors who can provide everything from outstanding home construction to plant expansion.

Again, we are big supporters of Pantex and would welcome additional work reassigned to Pantex, such as the tritium-producing function.

Sincerely,

Garet von Netzer
Publisher

GVN:sb

Barbara A. Cloud
2105 20th Avenue, South
Nashville, TN 37212

April 20, 1995

Stephen Sohinki, Dir.
Office of Reconfiguration
U.S. DOE
P.O. Box 3417
Alexandria, VA 22302

Dear Mr Sohinki,

I urge a decision of No Action on the question of a new facility for the production of tritium.

Nuclear weapons are not appropriate to ever use. Their effect is too widespread.

1/20.05 The future doesn't belong to the poor country with the biggest weapons. The future belongs to the country with the strongest economy. (Making the biggest weapons tends to make a country poorer.)

For nuclear energy to contribute to a strong economy, ways need to be found to make it safer. Ways need to be found to deal with nuclear wastes for the long haul.

Sincerely,

Barbara Cloud

April 13, 1995
US DOE
PO Box 3417
Alexandria, VA 22301

COMMENT RE THE PUBLIC MEETING HELD IN POCATELLO, IDAHO ON APRIL 12 ABOUT THE TRITIUM EIS:

I went to the 6 pm meeting as an interested citizen. I did not have any bias about nuclear energy. By the time I left, I was angry.

1/15.01 First, I think the process is excellent. DOE is finally relaxing its CIA-like approach to public involvement. The individuals who presented the information and those who acted as facilitators were calm, without ego involvement, and certainly not defensive. So, for that aspect of the program, I would give you high marks.

However, I think those who are concerned about nuclear proliferation have a point in addition to some other discrepencies noted throughout the meeting. Please read on:

2/15.03 1. Indian tribes: the representatives of the Shoshone-Bannock Fort Hall Reservation have not been made a part of the process. They should have been.

3/18.01 2. I am absolutely opposed to an increase in nuclear weapons. If the Tritium is expressedly for its own replenishment in existing warheads, then I could accept it. But, I thought we were supposed to be downsizing our nuclear arsenal. If the Tritium is for new weapons, then I think we have learned nothing. People in this country are tired of the hypocrisy in government that insists we are downsizing while we sell weapons to other countries and then expand our own arsenal. And, it does seem less than forthcoming to be cryptic about the number of weapons we have now.

4/10.02 3. I am not opposed to peaceful uses of nuclear materials. However, the first priority is cleanup. Your people can still talk blithely about things that were done in the past, but until you get them cleared up, it seems ridiculous to continue adding to that problem until you get cleanup under control.

4. I would suggest that you do more research that is linked among sites instead of doing repetitive efforts, such as for cleanup strategies. Your mathematical models need to be refined and made more uniform. You also need to concentrate

TSR–M–068
COMMENT LETTER **PAGE 2 OF 2**

4/10.02 continued

on the funding aspect of your programs so that monies are not allocated and then withdrawn before closure is reached.

You may, at this point, wonder why I am not adhering more closely to the EIS for Tritium. My only response is that you remind me of a kid that wants a new toy before he or she gets his or her room cleaned up---and look at the mess parenting is in today.

Thank you,

Kay Merriam

Kay Merriam, Ph.D.
4780 Clearview Ave
Pocatello, ID 83204

cc: Senator Larry Craig
Senator Dirk Kempthorne

TSR–M–069
COMMENT LETTER **PAGE 1 OF 1**

1705 Alpine Dr.
Aiken, S.C. 29803
(803)-648-3515

April 22, 1995

Mr. Stephen Sohinki, Director
Office of Reconfiguration
Department of Energy
PO Box 3417
Alexandria, Va. 22302

TRITIUM SUPPLY AND RECYCLING PEIS

Dear Mr. Sohinki:

1/18.01

As I indicated at the hearing in North Augusta on April 20, I see DOE's timing to build and start up new tritium production facilities to be inconsistent with the efforts of this Administration to extend the Nuclear Non-proliferation Treaty this year. The nuclear have-nots want to see serious efforts made for substantial cuts in nuclear weapons. How can we expect their support for an indefinite extension, which we say is very important, if at the same time we say by our actions that we must maintain the Start II level of weapons?

I urge you to get word promptly to Secretary O'Leary, that she use her influence in the Administration to urge work toward the next step in arms reduction. A number of 500-1000 warheads would still be overkill, but would be on the correct path, and would allow postponement of start up of tritium facilities for 20 years or more.

This action would reduce the threat of global chaos in the event of a major war, and it would save billions of dollars in construction and operation of tritium facilities, money urgently needed for other defense needs or to reduce the deficit.

2/13.00.55

I also have a comment on the idea of producing tritium in a so-called "triple play" reactor, from which electric power is sold. DOE leaves the impression that its ownership of the plant would get around our policy on not co-producing weapons materials and commercial power. See Draft PEIS for tritium, p. ES-22, Column 1. The rest of the world is not likely to appreciate the fine distinction of government ownership as making a difference. After all, the countries we would want to influence on this matter would probably own the plant anyway, or could easily follow our example and transfer ownership. Let us stop trying to kid ourselves on this.

Victor J. Reilly

TSR–M–070
COMMENT LETTER **PAGE 1 OF 1**

April 21, 1995

TO: United States Department of Energy
P.O. Box 3417
Alexandria, Va. 22301

FROM: James G. Fowke, P.E.
994 Campbellton Drive
North Augusta, S.C. 29841

SUBJECT: Comments on the Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling

My comments on the Accelerator Production of Tritium, APT, technology for tritium supply and recycling follow:

- The APT technology is unproved for the proposed mission, and, therefore, should not be further considered as a candidate technology.

1/13.04.03

- The helium-3 target gas supply, solely from the radioactive decay of tritium, is limited and single source. Reduction in the supply of helium-3 gas would severely impact tritium production capability. Therefore, the accelerator should not be further considered as a candidate technology.

2/11.00.07

- The potential health hazard to workers from electromagnetic fields associated with APT operation is not fully understood or known. Therefore, the accelerator should not be further considered as a candidate technology.

Consideration of the above comments in forming the record of decision (ROD) for tritium supply is appreciated.

TSR–M–071
COMMENT LETTER **PAGE 1 OF 1**

Box 463
Elmsford NY 10523-0463
April 23, 1995

Mr. Stephen Sohinki
Director, Office of Reconfiguration
US Department of Energy
PO Box 3417
Alexandria VA 22302

Dear Mr. Sohinki,

The proposal to build a new plant to produce tritium is unnecessary, wasteful, and counter to the national security interests of our country.

Our goal must be to minimize proliferation of nuclear weapons. Initial negotiations for a convention prohibiting fissile material production are beginning, and will be severely undercut if the United States begins to build a new tritium plant. Meanwhile, we are attempting to get a permanent extension to the Non-Proliferation Treaty, and if we succeed; will be obligated to continue reductions of our own under Article IV. Let us be pessimistic and say that it takes another 12 years to negotiated further stockpile reductions with Russia. We would still be scheduled for further reductions long before the tritium from the weapons we are decommissioning in this decade had decayed and prevented the recycling we've been doing for the last 7 years. These reductions would free up more tritium which could also be recycled.

1/18.01

At a time when the Federal Government must reduce spending by hundreds of billions of dollars per year, building a new tritium plant under the circumstances above is ludicrous. Given the imminent financial insolvency of Medicare, the poor state of American schools, etc. proceeding with plants for a tritium plant signals long-term irresponsibility, that can only hurt us through weakening of the value of the US currency way beyond what we are now seeing. Our current tritium supply permits us to continue the US nuclear policies for between 20 and 40 years.

2/19.01

Please advise me of the decisions made in coming months.

Sincerely yours,

Robert J. Schloss

April 20, 1995

TO: United States Department of Energy

FROM: James G. Fowke, P.E.
James G. Fowke
994 Campbellton Drive
North Augusta, S.C. 29841

SUBJECT: Comment on the Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling

This documents my comments favoring the siting of the replacement tritium production facility at the Savannah River Site (SRS). For backgrount, I am a native of Barnwell County, South Carolina, and was born and reared one mile east of the SRS. I was a Barnwell High School student during Initial construction of the Site. A number of my family members and friends still reside in Barnwell County near the Site. I reside in North Augusta, South Carolina, a distance of approximately twenty (20) from SRS.

The replacement tritium production facility should be a reactor of proven design, and should be located at SRS for the following reasons:

- SRS already has the infrastructure necessary to support the replacement tritium production facility.
- SRS has the new Replacement Tritium Facility (RTF) for recycling degraded tritium and for loading virgin and recycled tritium into containers for commercial and Department of Defense use.
- SRS has the public support of surrounding communities and the state governments of South Carolina and Georgia for locating the replacement tritium facility there.

1/13.09.01

- SRS has the technical and management resources for designing, constructing, and operating the facility.
- SRS has the necessary safeguards and security capabilities in-place for the operation of the replacement tritium production facility and related facilities.
- SRS is remotely located such that the consequences to workers and the general population of any accidents resulting in releases of radioactive materials are minimized.
- SRS has an extensive environmental monitoring program directed at non-radioactive and radioactive releases to the atmosphere.

1/13.09.01 continued

- SRS has the geology, natural resources, and climate conditions that are favorable to the siting of the replacement tritium production facility.
- The area surrounding SRS has the ability to draw and support a skilled labor force of the size necessary to construct the replacement tritium production facility.

The above considerations favoring the siting of a replacement tritium production facility at the SRS will certainly enhance the schedule and significantly reduce capital and operating costs of future virgin tritium production.

TSR–M–073
COMMENT LETTER

Office of the Governor•Grant Services
South Carolina Project Notification and Review
1205 Pendleton Street
Room 477
Columbia, SC 29201

State Application Identifier
KIS-960205-005

Suspense Date
2/23/95 3/9/95

Stan M. McKinney
Office of the Adjutant General

The Grant Services Unit, Office of the Governor is authorized to operate the South Carolina Project Notification and Review System (SCPNRS). Through the system the appropriate state and local officials are given the opportunity to review, comment, and be involved in efforts to obtain and use federal assistance, and to assess the relationship of proposals to their plans and programs.

Please review the attached information, mindful of the impact it may have on your agency's goals and objectives. Document the results of your review in the space provided. Return your response to us by the suspense date indicated above. Your comments will be reviewed and utilized in making the official state recommendation concerning the project. The recommendation will be forwarded to the cognizant federal agency.

Should you have no comment, please return the form signed and dated.

If you have any questions, call me at (803) 734-0495. Rodney Grizzle

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MAR 15 1995
GRANT SERVICES

1/17.02

- [x] Project is consistent with our goals and objectives.
- [ ] Request a conference to discuss comments.
- [ ] Please discontinue sending projects with this CFDA# to our office for review.
- [ ] Comments on proposed Application is as follows:

Signature: _____ Date: 13 MAR 95
George J. Schneider
Title: Asst Director Phone: (803) 734-0020

TSR–M–075
COMMENT LETTER

Office of the Governor•Grant Services
South Carolina Project Notification and Review
1205 Pendleton Street
Room 477
Columbia, SC 29201

State Application Identifier
KIS-960205-005

Suspense Date
2/23/95

Larry Setzler
South Carolina State Ports Authority

The Grant Services Unit, Office of the Governor is authorized to operate the South Carolina Project Notification and Review System (SCPNRS). Through the system the appropriate state and local officials are given the opportunity to review, comment, and be involved in efforts to obtain and use federal assistance, and to assess the relationship of proposals to their plans and programs.

Please review the attached information, mindful of the impact it may have on your agency's goals and objectives. Document the results of your review in the space provided. Return your response to us by the suspense date indicated above. Your comments will be reviewed and utilized in making the official state recommendation concerning the project. The recommendation will be forwarded to the cognizant federal agency.

Should you have no comment, please return the form signed and dated.

If you have any questions, call me at (803) 734-0495. Rodney Grizzle

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- [ ] Project is consistent with our goals and objectives.
- [ ] Request a conference to discuss comments.
- [ ] Please discontinue sending projects with this CFDA# to our office for review.
- [ ] Comments on proposed Application is as follows:

Signature: Larry W. Setzler Date: 21 FEBRUARY 1995
Title: ENGINEERING PROJECT MANAGER Phone: 803-856-7051

TSR–M–076
COMMENT LETTER **PAGE 1 OF 1**

Office of the Governor • Grant Services
South Carolina Project Notification and Review
1205 Pendleton Street
Room 477
Columbia, SC 29201

State Application Identifier
EIS-950306-006
Suspense Date
2/22/95

Dr. James A. Timmerman, Jr.
South Carolina Wildlife and Marine Resources Department

The Grant Services Unit, Office of the Governor is authorized to operate the South Carolina Project Notification and Review System (SCPNRS). Through the system the appropriate state and local officials are given the opportunity to review, comment, and be involved in efforts to obtain and use federal assistance, and to assess the relationship of proposals to their plans and programs.

Please review the attached information, mindful of the impact it may have on your agency's goals and objectives. Document the results of your review in the space provided. Return your response to us by the suspense date indicated above. Your comments will be reviewed and utilized in making the official state recommendation concerning the project. The recommendation will be forwarded to the cognizant federal agency.

Should you have no comment, please return the form signed and dated.

1/17.02 If you have any questions, call me at (803) 734-0495. Rodney Grizzle

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MAR 07 1995
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- [x] Project is consistent with our goals and objectives.
- [ ] Request a conference to discuss comments.
- [ ] Please discontinue sending projects with this CFDA# to our office for review.
- [ ] Comments on proposed Application is as follows:

Signature: [illegible] Date: 3-2-95

Title: Environmental Programs Dir. Phone: _____

TSR–M–077
COMMENT LETTER **PAGE 1 OF 1**

Office of the Governor • Grant Services
South Carolina Project Notification and Review
1205 Pendleton Street
Room 477
Columbia, SC 29201

State Application Identifier
EIS-950306-006
Suspense Date
4/4/95

Steve Davis
S.C. Department of Health and Environmental Control

The Grant Services Unit, Office of the Governor is authorized to operate the South Carolina Project Notification and Review System (SCPNRS). Through the system the appropriate state and local officials are given the opportunity to review, comment, and be involved in efforts to obtain and use federal assistance, and to assess the relationship of proposals to their plans and programs.

Please review the attached information, mindful of the impact it may have on your agency's goals and objectives. Document the results of your review in the space provided. Return your response to us by the suspense date indicated above. Your comments will be reviewed and utilized in making the official state recommendation concerning the project. The recommendation will be forwarded to the cognizant federal agency.

Should you have no comment, please return the form signed and dated.

1/17.02 If you have any questions, call me at (803) 734-0495. Rodney Grizzle

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- [x] Project is consistent with our goals and objectives.
- [ ] Request a conference to discuss comments.
- [ ] Please discontinue sending projects with this CFDA# to our office for review.
- [x] Comments on proposed Application is as follows:

We are presently reviewing the document and will provide our comments directly to the U.S. Department of Energy.

Signature: [illegible] Virgil R. Autry Date: 4/3/95

Title: Director, Div. of Radioactive Waste Phone: (803) 896-4744

TSR–M–078
COMMENT LETTER **PAGE 1 OF 1**

Office of the Governor • Grant Services
South Carolina Project Notification and Review
1205 Pendleton Street
Room 477
Columbia, SC 29201

State Application Identifier
EIS-950306-006
Suspense Date
4/4/95

Richard P. Stroker
S.C. Dept. of Probation, Parole, & Pardon Services

The Grant Services Unit, Office of the Governor is authorized to operate the South Carolina Project Notification and Review System (SCPNRS). Through the system the appropriate state and local officials are given the opportunity to review, comment, and be involved in efforts to obtain and use federal assistance, and to assess the relationship of proposals to their plans and programs.

Please review the attached information, mindful of the impact it may have on your agency's goals and objectives. Document the results of your review in the space provided. Return your response to us by the suspense date indicated above. Your comments will be reviewed and utilized in making the official state recommendation concerning the project. The recommendation will be forwarded to the cognizant federal agency.

Should you have no comment, please return the form signed and dated.

If you have any questions, call me at (803) 734-0495.

1/17.02

RECEIVED
Rodney Grizzle
APR 04 1995
GRANT SERVICES

- [X] Project is consistent with our goals and objectives.
- [ ] Request a conference to discuss comments.
- [ ] Please discontinue sending projects with this CFDA# to our office for review.
- [ ] Comments on proposed Application is as follows:

Signature: Richard P. Stroker Jr. Date: March 30, 1995

Title: Deputy Director for Field Services Phone: 734-9240

TSR–M–079
COMMENT LETTER **PAGE 1 OF 1**

Office of the Governor • Grant Services
South Carolina Project Notification and Review
1205 Pendleton Street
Room 477
Columbia, SC 29201

State Application Identifier
EIS-950306-006
Suspense Date
4/4/95

Olney England
Office Of Community Grant Program

The Grant Services Unit, Office of the Governor is authorized to operate the South Carolina Project Notification and Review System (SCPNRS). Through the system the appropriate state and local officials are given the opportunity to review, comment, and be involved in efforts to obtain and use federal assistance, and to assess the relationship of proposals to their plans and programs.

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Should you have no comment, please return the form signed and dated.

If you have any questions, call me at (803) 734-0495.

RECEIVED
Rodney Grizzle
MAR 20 1995
GRANT SERVICES

- [ ] Project is consistent with our goals and objectives.
- [ ] Request a conference to discuss comments.
- [ ] Please discontinue sending projects with this CFDA# to our office for review.
- [ ] Comments on proposed Application is as follows:

Signature: _____ Date: _____

Title: _____ Phone: _____

TSR–M–080
COMMENT LETTER **PAGE 1 OF 1**

Office of the Governor • Grant Services
South Carolina Project Notification and Review

1205 Pendleton Street
Room 477
Columbia, SC 29201

State Application Identifier
EIS-950306-006
Suspense Date
4/4/95

Mr. David Thompkins
South Carolina Department of Agriculture

The Grant Services Unit, Office of the Governor is authorized to operate the South Carolina Project Notification and Review System (SCPNRS). Through the system the appropriate state and local officials are given the opportunity to review, comment, and be involved in efforts to obtain and use federal assistance, and to assess the relationship of proposals to their plans and programs.

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Should you have no comment, please return the form signed and dated.

If you have any questions, call me at (803) 734-0495. Rodney Grizzle 1995 GRANT SERVICES

- ☐ Project is consistent with our goals and objectives.
- ☐ Request a conference to discuss comments.
- ☐ Please discontinue sending projects with this CFDA# to our office for review.
- ☐ Comments on proposed Application is as follows:

Signature: _____ Date: 3-23-95

Title: Assistant Commissioner Phone: 734-7210

TSR–M–082
COMMENT LETTER **PAGE 1 OF 1**

South Carolina
DHEC
Department of Health and Environmental Control

4130 Faber Place, Suite 300
Charleston, SC 29405

Commissioner: Douglas E. Bryant

Board: Richard E. Jabbour, DDS, Chairman; Robert J. Stripling, Jr., Vice Chairman; Sandra J. Molander, Secretary; John H. Burriss; William M. Hull, Jr., MD; Roger Leaks, Jr.; Bernet R. Maybank, III

Promoting Health, Protecting the Environment

Office of Ocean and Coastal Resource Management
H. Wayne Beam, Ph.D., Deputy Commissioner *Christopher L. Brooks, Assistant Deputy Commissioner*

(803) 744-5838 *(803) 744-5847*

March 21, 1995

Mr. Rodney Grizzle
Office of the Governor-Grant Services
1205 Pendleton Street, Room 477
Columbia, South Carolina 29201

Re: EIS-950306-006
Draft Programmatic Environmental Impact Statement For Tritium Supply and Recycling, Volume 1

Dear Mr. Grizzle:

1/17.02 The above referenced project is not within the coastal zone of South Carolina and, therefore, no adverse impacts on the coastal zone are anticipated. The project is consistent with the South Carolina Coastal Zone Management Program.

Sincerely,

Robert D. Mikell
Director of Planning
and Federal Certification

RDM/c:/Rodney/jk

cc: Dr. H. Wayne Beam
Mr. Christopher L. Brooks
Mr. H. Stephen Snyder

RECEIVED
MAR 22 1995
GRANT SERVICES

recycled paper

Office of the Governor • Grant Services
South Carolina Project Notification and Review
1205 Pendleton Street
Room 477
Columbia, SC 29201

State Application Identifier
EIS-950306-006
Suspense Date
4/4/95

Robert E. David
South Carolina Employment Security Commission

The Grant Services Unit, Office of the Governor is authorized to operate the South Carolina Project Notification and Review System (SCPNRS). Through the system the appropriate state and local officials are given the opportunity to review, comment, and be involved in efforts to obtain and use federal assistance, and to assess the relationship of proposals to their plans and programs.

Please review the attached information, mindful of the impact it may have on your agency's goals and objectives. Document the results of your review in the space provided. Return your response to us by the suspense date indicated above. Your comments will be reviewed and utilized in making the official state recommendation concerning the project. The recommendation will be forwarded to the cognizant federal agency.

Should you have no comment, please return the form signed and dated.

If you have any questions, call me at (803) 734-0495. RECEIVED Rodney Grizzle 4.1.1995 CLEARINGHOUSE

1/17.02

- [x] Project is consistent with our goals and objectives.
- [ ] Request a conference to discuss comments.
- [ ] Please discontinue sending projects with this CFDA# to our office for review.
- [ ] Comments on proposed Application is as follows:

Signature: Robert E David Date: 2/23/95

Title: Executive Director Phone: 737-2617

DEPARTMENT OF HEALTH & HUMAN SERVICES — Public Health Service

Centers for Disease Control
Atlanta GA 30341-3724

April 17, 1995

Stephen M. Sohinki, Director
Office of Weapons Complex Reconfiguration, DP-25
Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Mr. Sohinki:

We have completed our review of the Draft Programmatic Environmental Impact Statement (DPEIS) for Tritium Supply and Recycling. Technical assistance for this review was provided by the Radiation Studies Branch (RSB), Environmental Hazards and Health Effects Division, National Center for Environmental Health, Centers for Disease Control and Prevention (CDC). We are responding on behalf of the Public Health Service.

This review focuses on the public health consequences associated with several proposed alternatives for the Tritium Supply and Recycling Facilities. The facilities include the Idaho National Engineering Laboratory (INEL), Nevada Test Site (NTS), Oak Ridge Reservation (ORR), Pantex Plant, and Savannah River Site (SRS). The attached general and specific comments provided by the RSB are offered for consideration in preparing the Final EIS.

Thank you the opportunity to review and comment on this draft document. Please ensure that we are included on your mailing list to receive a copy of the final document, and future EISs which may indicate potential public health impacts and are developed under the National Environmental Policy Act. If you have any questions about these comments, you may contact Mr. Robert Whitcomb, Physical Scientist, at (404) 488-7040, or me at (404) 488-7074.

Sincerely yours,

Kenneth W. Holt

Kenneth W. Holt, M.S.E.H.
Special Programs Group (F29)
National Center for Environmental Health

DP-25

003973

DEPARTMENT OF HEALTH & HUMAN SERVICES — Public Health Service, Centers for Disease Control

Memorandum

Date: April 17, 1995

From: Robert C. Whitcomb, Jr., Physical Scientist, National Center for Environmental Health, Division of Environmental Hazards and Health Effects, Radiation Studies Branch (F35)

Subject: Review of 'Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling'

To: Ken Holt, Environmental Health Scientist, Special Programs Office, National Center for Environmental Health

This review focuses on the public health consequences associated with several proposed alternatives for the Tritium Supply and Recycling Facilities. The facilities include the Idaho National Engineering Laboratory (INEL), Nevada Test Site (NTS), Oak Ridge Reservation (ORR), Pantex Plant, and Savannah River Site (SRS). Comments have been separated into two categories; general and specific. This page considers the general comments and subsequent pages provide specific comments.

General Comments

I was pleased to see an EIS that not only provided detailed information regarding the models used in the calculations but also the assumptions that went into the models. This addition has greatly improved the usefulness of this document in conveying to the reader the information necessary to do a thorough review. I commend the authors for providing this useful information.

1/11.00.06 There are some minor changes that would improve the document. On page E-3 of Volume II, internal committed doses are combined with external effective doses. For convenience, the sum is also called the committed effective dose equivalent in this Programmatic Environmental Impact Statement. This may be convenient but it is not correct or conventional. A committed dose has a specific definition that involves only radioactive materials taken internally in the body. The definition implies that an intake today results in a dose received over subsequent days or years depending on the radiological and biological half-life of the specific radionuclide. For external effective doses, the dose ends when the person or the source is removed from the area of influence. Therefore, it is more correct to call this combined dose a Total Effective Dose Equivalent or just Effective Dose for that year of practice.

Page 2 - Mr. Ken Holt

Specific Comments

1) Volume II, Appendix E, Footnotes on Tables E.2.4.1-2, E.2.5.1-2, E.2.6.1-2, E.2.7.1-2, E.2.8.1-3,

Annual background radiation doses are presented for the INEL, NTS, ORR, Pantex, and SRS as 350, 323, 306, 323, and 315 mrem respectively.

Volume I, Section 4, Tables 4.2.2.9-1, 4.3.2.9-1, 4.4.2.9-1, 4.5.2.9-1, 4.6.2.9-1,

2/11.00.30 The background radiation doses are presented for the INEL, NTS, ORR, Pantex, and SRS as 418, 382, 371, 411, and 380 mrem respectively.

The question here is why the difference? Besides the fact that they come from different referenced sources, there should be only one referenced value for background used. This discrepancy will confuse and mislead the reader.

Additionally, the reported values from NCRP 1987a are annual effective dose equivalents NOT committed effective dose equivalents as the column heading in the Volume I tables indicate.

2) Volume II, Appendix E, Footnotes on Tables E.2.4.1-3, E.2.5.1-3, E.2.6.1-3, E.2.7.1-3, E.2.8.1-4,

Collective doses to the population within 50 miles from background radiation in the year 2030 are presented for the INEL, NTS, ORR, Pantex, and SRS as 52,600, 5,770, 325,000, 88,500, and 240,000 person-rem respectively.

Volume I, Section 4, Tables 4.2.3.9-1, 4.3.3.9-1, 4.4.3.9-1, 4.5.3.9-1, 4.6.3.9-1,

3/11.00.31 Collective doses to the population within 50 miles from background radiation in the year 2030 are presented for the INEL, NTS, ORR, Pantex, and SRS as 53,270, 5,860, 329,800, 99,470, and 233,300 person-rem respectively.

Again, why the difference? Also note that individual background radiation doses differ between these tables as well (ex. Table E.2.5.1-2 and Table 4.3.3.9-1 gives 323 and 317 mrem respectively). Also Table E.2.7.1-2 and Table 4.5.3.9-1 gives 323 and 346 mrem respectively, and Table E.2.4.1-2 and Table 4.2.3.9-1 give 350 and 353 mrem respectively.

Page 3 - Mr. Ken Holt

3) Volume I, Table 4.4.2.9-2 and Table 4.4.2.9-3, page 4-199,

4/11.00.32 These Tables are incorrectly titled, `Doses to the General Public from Normal Operations at Nevada Test Site, 1992'. The corrected version should read `...at Oak Ridge Reservation'.

I thank you for the opportunity to review this document. I hope that these comments and suggestions will be helpful to the preparers.

Robert C. Whitcomb, Jr.

TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

April 7, 1995

Mr. Stephen M. Sohinki
Office of Reconfiguration
Department of Energy
Washington, DC 20585

RE: DOE, TRITIUM RECYCLING & SUPPLY, OAK RIDGE, ANDERSON COUNTY

Dear Mr. Sohinki:

Pursuant to your request this office has reviewed documentation relative to the above-referenced undertaking. Based on available information, we find that the undertaking as currently proposed may affect historic properties eligible for listing in the National Register of Historic Places.

1/07.01 Therefore, this office will need to review a cultural resources survey report for the area of transfer plus your agency's assessment of the existence of historic properties within the area of potential effect plus your agency's assessment of potential for project impact upon cultural resources for this project before any work commences. Questions and comments may be directed to Joe Garrison (615)532-1559. Your cooperation is appreciated.

Your cooperation is appreciated.

Sincerely,

Herbert L. Harper
Executive Director and
Deputy State Historic
Preservation Officer

HLH/jyg

TSR–M–086
COMMENT LETTER **PAGE 1 OF 1**

J. E. Pinkney
Council Member
James Pinkney
Council Member
Ben C. Perry III
Council Member

County of Allendale
P. O. Box 877
Allendale, South Carolina 29810
(803) 584-3438

J. W. Wall, Jr.
Chairman
Norman Lofton, Jr.
Vice Chairman
H. W. Priester, Jr.
Administrator

March 1, 1995

The Honorable Hazel O'Leary
Secretary
United States Department of Energy
Washington, D. C. 20585

Dear Secretary O'Leary:

It has come to our attention the Department of Energy is evaluating the options of producing Tritium for our country's Nuclear Weapons Program.

1/13.00.05 It is our belief, the most advantageous approach for the department and the American taxpayer is to construct a multi-purpose reactor which can produce the needed materials, plus provide needed power production for electrical consumers.

We are also aware of the several private initiatives that have offered proposals to provide this service, and we are of the opinion this would provide the most cost effective approach to this complex solution.

The communities of Allendale and Barnwell Counties house more than sixty-six percent of the Savannah River Site, with about 1600 employees living in our area.

2/13.09.01 When the department chooses the method of Tritium production, which we urge to be by reactor, we hope the department will take into account the long standing support our communities have given to the department, our rich pool of experience and knowledge at the Savannah River Site and the possible positive investment from the private sector.

Thank you for your kind consideration of this request.

Sincerely,

H. W. Priester, Jr.

HWP,JR:sw

TSR–M–087
COMMENT LETTER **PAGE 1 OF 2**

April 12, 1995

United Stated Department of Energy
Post Office Box 3417
Alexandria, VA 22301

COMMENTS ON TRITIUM SUPPLY AND RECYCLING DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT (DPEIS)

I am a Nevada Test Site contractor employee. I would like my comments on the Tritium Supply and Recycling DPEIS to go on record. In my opinion the tritium project should be sited at the NTS for several reasons.

1/13.06.01 First, the NTS is the best of the five candidate sites from an environmental impact standpoint. The population density is extremely low and unlikely to increase in the foreseeable future. The arid climate and great depth to groundwater renders the NTS superior to the other sites. The huge buffer zone provided by surrounding government property also makes the NTS unique. Yet, the NTS is within reasonable commuting distance of a major metropolitan center which provides excellent access to skilled labor. Although the project promises to generate a few thousand jobs, the impact on Las Vegas infrastructure will be lost in the 4,000 to 5,000 who move here monthly irrespective of NTS activity. However, the NTS jobs are, in general, much better paying than most of the gaming and service industry jobs, so they will have a very positive influence on employment in Southern Nevada.

Second, the tritium project would bring much needed stability to NTS and greatly enhance the mission of providing nuclear weapons testing readiness. The high technology jobs associated with the tritium project would provide challenging job opportunities to assist in the retention of scientists and technicians at the NTS. The advent of a sophisticated new facility, whether it is a reactor or an accelerator, offers significant opportunities for research and development (R&D) and spin-off industries. The University of Nevada Las Vegas and the Community College of Southern Nevada could greatly benefit from the availability of a tritium facility for educational and R&D pursuits. The situation would be a win-win for the DOE and the Las Vegas Community, as the DOE could draw on these institutions of higher education for skilled employees.

2/14.05 Third, the NTS offers the superior site for consolidation of defense programs activities in the future. The NTS is well-suited to host most of the other complementary facilities needed for a comprehensive weapons program. In fact, the NTS combined with the weapons laboratories could handle the entire future

2/14.05 continued

nuclear weapons program. There should be great economy and safety associated with this option to maximize consolidation and integration. For example, transportation issues involving special nuclear material and other hazardous materials would just about disappear. Consequently, if the tritium facility is located at NTS, it makes sense to co-locate numerous other related facilities at NTS as well. The site is certainly large enough to accommodate all and the environmental advantages are just as important for all defense programs facilities.

3/10.01

Fourth, the NTS already has in place an operation low level radioactive waste (LLRW) disposal site which could easily dispose of any LLRW generated as a result of the tritium facility. The LLRW program at the NTS has been highly successful and has set the standard for waste acceptance criteria in the DOE complex. By disposing of LLRW on site, the DOE avoids safety and transportation issues associated with off-site disposal.

Although there are numerous other reasons for locating the project at the NTS, the reasons given above are the most significant to me. The choice of the technology should be predicated on risk and cost analysis.

Howard W. Dickson

Howard W. Dickson
3021 Salerno Court
Las Vegas, NV 89128

Phone: (702) 255-2657 - home
(702) 295-3379 - office

2804 Acklen Ave,
Nashville TN 37212
April 23, 1995

Mr. Stephen Sohinki
Director, Office of Reconfiguration
U.S. Dept. of Energy
P.O. Box 3417
Alexandria VA 22302

Dear Mr. Sohinki,

1/13.00.01

DOE should choose the "No action" alternative for the "Tritium Supply + Recycling Programmatic Environmental Impact Statement."

2/18.15

The US should not attempt to maintain START II nuclear bomb levels far into the next century. Instead, our country should concentrate on further reductions.

Sincerely,
Anne Carey

TSR–M–090
COMMENT LETTER **PAGE 1 OF 1**

April 25,1995
104 Stuyvesant Rd.
Asheville, N.C. 28803

To Whom it may Concern:

1/18.01 I am writing to express my opposition to the continued production of tritium. It is not in the best interests, I believe, of our nation or the world,

The United States is at this moment proposing the extension of the Nuclear non-proliferation Treaty, and we have stated our commitment to working for the complete elimination of nuclear weapons. Both these policies are, in my view, the only sane approaches to prevent nuclear disaster of unimaginable proportions. How can we expect other nations to believe in our good faith and agree to our proposals if we are continuing the maintenance of our "overkill" nuclear arsenal?

Finally the dangers, known and unknown, in the methods of production, waste disposal and the astronomical expense should be enough in themselves to prevent us pursuing this dangerouse course.

As I sat there in the Hearing at Oak Ridge I thought of Einstein's and Eisenhower's warnings. And I thought how wonderful it would be if the intelligence and expertise seated in that room were working for creative solutions to our world's problems instead of destructive ones.

Sincerely,
Llewellyn L. Perry
Llewellyn L. Perry (Ms)

TSR–M–091
COMMENT LETTER **PAGE 1 OF 7**

To: Mr. Steve Sohlenki
Dept. of Energy
Office of Reconfiguration
P. O. Box 3417
Alexandria VA, 22302

Subject: New Tritium Production EIS

I believe the Draft PEIS as currently written does not include the full environmental impact of the APT. The Draft PEIS appropriately shows that a huge amount of additional electrical energy will be required to operate the APT compared to the other potential tritium production alternatives. However, the Draft PEIS does not identify the additional environmental effects that will result from the production of this additional electrical energy.

To properly assess the environmental impact of the APT the following or similar analysis is necessary.

First a baseline should be identified. It is suggested that 50 MWe be the baseline, since this is the approximate power that all the non-APT alternatives require. The full-APT then requires 550-50=500 MWe of additional electrical power beyond the baseline. This equates to 500 MWe X 24 hr/day X 365 days/yr = 4,380,000 Megawatt-hours per year of additional electrical energy required by the APT.

1/02.04 Next a determination must be made of the environmental impact resulting from the generation of the additional electrical energy. An assumption of the type of electrical energy source must be made, i.e. commercial nuclear, fossil, other. It is suggested for comparison purposes both (I) the statistics for the total nuclear commercial generation of the additional electrical energy be assessed and (II) the statistics for the "US average commercial generation" of the additional electrical energy be assessed. In the example below conversion factors identified as AA, BB, CC, and DD are used. The DOE should be able to obtain these conversion factors from its statistical files, EPRI, EEI, or other trade organizations.

(I) The production of one megawatt-hour of electrical energy from a commercial nuclear power plant results in the yearly creation of AA cubic yards of spent fuel. (It is expected to be about 10E-6.) Therefore the APT would be responsible for the additional yearly creation of approximately (AA times 4,380,000 or) five to twenty cubic yards of spent fuel when compared to the baseline. This yearly value should be included in the revised table attached. It is clear the APT is indeed responsible for the generation of spent nuclear fuel; the spent fuel being commercially produced spent fuel not production reactor spent fuel. Also the generation of LLW, mixed waste, etc. resulting from the additional commercially produced electrical energy should be calculated and displayed.

(II) The "US average commercial generator" would be a mix of different types of commercial nuclear and fossil units. The production of one megawatt-hour of electrical energy from the "US average commercial generator" results in BB cubic yards of spent commercial nuclear fuel plus CC cubic yards of fly ash plus DD pounds of sulphur dioxide plus etc. Therefore the APT would be responsible for the additional yearly creation of ([BB+CC+DD+etc.] times 4,380,000) cubic yards...etc.... respectively of spent commercial nuclear fuel, fly ash, sulphur dioxide, etc. and other forms of wastes when compared to the baseline.

Regardless of which electrical energy baseline process is chosen, about 8,700,000 megawatt-hours of additional thermal pollution each year would enter the environment due to the APT.

1/02.04 continued

It is recommended the final EIS assess the APT using the assumption that the electrical production facility is located on the same site as the APT. This would give an accurate picture of the waste and pollution to be produced by the huge required electrical generation plant. Why should this waste and pollution be diffused through out the US utility industry? Shouldn't the DOE be responsible for the disposal of the waste and pollution produced by the generation of the additional electrical energy required by the APT? For the purposes of waste and pollution evaluation the electrical power source should be considered an integral part of the APT.

One should expect the APT to produce more waste and pollution than a nuclear production reactor; since the APT requires thermal energy to be converted to electrical energy, which must be converted to momentum energy to accelerate protons in the accelerator, which are finally converted to the production of neutrons through scattering reactions which in turn produce tritium. A production reactor uses the neutrons immediately available in the reactor to produce tritium and does not require all the energy conversion steps of the APT alternative to obtain the needed neutrons.

With these revision a more true picture of the environmental consequences of the APT will be visible.

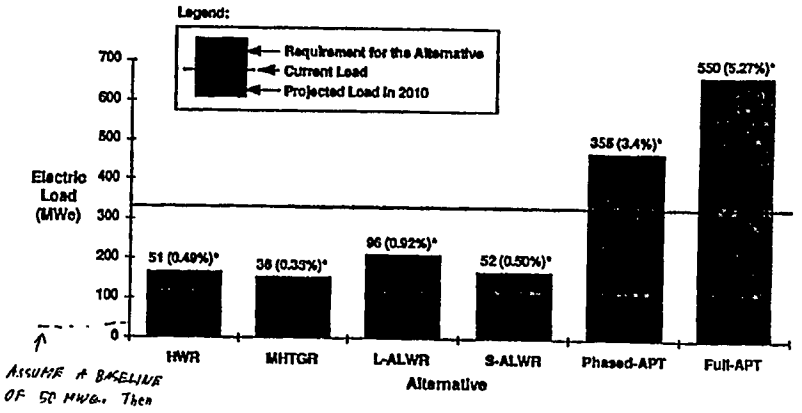
I have been unable to obtain a copy of the complete Draft PEIS and would appreciate receiving one. Also I would appreciate receiving a direct response to this letter to understand your assessment and disposition of the claims set forth herein.

W L Boettinger 4/26/95

W. L. Boettinger
7 Creekview Court
North Augusta, SC
29841

(803) 279-0827

Electrical Use by Technology
Comparison to Projected and Current Use for SRS



ASSUME A BASELINE OF 50 MWe. THEN THE APT IS 550-50 = 500 MWe BEYOND THE BASELINE

* Megawatts Electric Alternatives plus Projected Load (Percent Power Pool Capacity Margin)

Resource Requirements and Waste

	HWR	ALWR Small	ALWR Large	MHTGR	APT Phased	APT Full
Acreage - Supply - Recycle	260 202	350 202	350 202	360 202	173 202	173 202
Water (MGY) - Once through cooling - Closed loop cooling	5,900 48	7,200 50	16,000 90	4,030 30	1,691 n/a	2,642 n/a
Workers - Peak Construction - Operation	2,320 930	2,200 500	3,500 830	2,210 910	1,350 624	1,350 624
Electric (million MWh/yr) - Consumption - Generation	0.4/0.5 0	0.4/0.6 3.9	0.7/1.1 8.5	0.3/0.4 2.7	2.4/ n/a 0	3.7/ n/a 0
Spent Fuel (yd^3)	7	15	30	80	5 TO 20 0	0
Solid Low Level Waste for Disposal (yd^3)	1,870	272	567	468	MUCH MORE 54	54
FLY ASH, SO_2, NO_x, etc RESULTING FROM THE ADDITIONAL ELECTRICITY TO BE GENERATED BEYOND THE BASE	~0	~0	~0	~0	LOTS OF WASTE & POLLUTION	

RESULTING FROM THE PRODUCTION OF THE HUGE AMOUNT OF REQUIRED ELECTRICAL ENERGY

Waste Management (SRS)

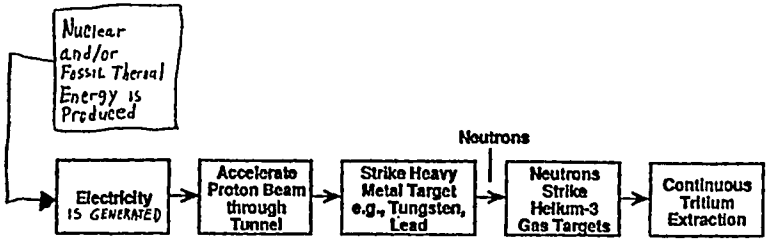
- Areas evaluated: spent nuclear fuel, low-level waste, mixed waste, hazardous waste, non-hazardous

	HWR	ALWR Small	ALWR Large	MHTGR	APT Phased / Full
Spent Fuel (yd^3/yr)	7	15	30	80	None
Low Level Waste Disposal Needs (acres/yr)	12	2	3.5	3	0.4
FLY ASH, SO_2, NO_x	0	0	0	0	MUCH

- Existing or planned waste management facilities may be adequate except for:
  - Spent nuclear fuel storage (HWR, ALWR, MHTGR)
  - New liquid LLW treatment facility (HWR, ALWR, MHTGR)

RESULT OF ADDITIONAL ELECTRICITY REQUIRE BEYOND THE BASELINE OF 50 MWe (APPLIES TO ANY SITE)

Accelerator Production of Tritium



Technology Discriminators

- APT has no spent fuel but SPENT FUEL & OTHER FORMS OF WASTE ARE PRODUCED IN THE GENERATION OF THE HUGE AMOUNT OF REQUIRED ELECTRICITY.
- APT has 1/5 the amount of low level waste as any reactor technologies, BUT THE GENERATION OF THE HUGE AMOUNT OF REQUIRED ELECTRICITY WILL PRODUCE MUCH ADDITIONAL WASTE.
- APT has no potential for severe accidents EXCEPT THOSE ACCIDENTS APPROPRIATE TO ELECTRICAL POWER PLANTS (WHICH ARE GREATER THAN PRODUCTION REACTORS)
- APT has the greatest potential to impact groundwater
- MHTGR has lowest potential for radiological impacts among reactor technologies
- MHTGR generates greatest amount of spent fuel
- HWR generates greatest amount of low level waste

TSR–M–092
COMMENT LETTER **PAGE 1 OF 2**

US DOE
PO Box 3471
Alexandria, VA 22301

Comments Regarding the
Tritium Supply and Recycling Draft Programmatic Impact Statement.

To Whom It May Concern

1/15.01 On April 20 I attended a public meeting in North Augusta which was sponsored by the DOE for comments concerning the future of our nations Tritium supply. I was very impressed with the selected speakers ability to explain a very complex subject in terms that were very easy to understand . These Doe representatives should be commended for there efforts.

In regard to the proposal presented I would like to make the following comments:

2/13.03.01 **1. The Advanced Light Water Reactor would be my preferred choice for Tritium production** . My reasons for this preference are as follows :
It's a proven technology , Uses/ Burns Excess Plutonium from both defense & commercial related activities, reduces the amount of waste plutonium, which must be treated & placed into long term storage, generates electricity, can still serve the public interest even if the nations Tritium needs change .

3/02.04 **2. My second choice would be the Linear Accelerator.**
The pros are cheapest to construct, no spent fuel, lowest amount of low level waste, possibility of being used for research & testing applications.
The cons are tremendous electricity consumption , untried in a continuous operation mode, does not burn plutonium, dependent on outside utilities or would require the construction of it's power generating facility, true operating costs unknown due to continuous rise in electric rates.

My preferred choice for the location of the new Tritium Production Facility regardless of the technology chosen would be the Savanna River Site.

4/13.09.01 The community surrounding the site are primarily Pro Nuclear.
Separation and Recycling facilities to meet the needs of all the concepts already exist.
Highly trained work force is already in place.
Water readily available.
Buildings and other structures which could be used in the supporting of the construction and operation of the new production facility.
Separations & Recycling facilities are already in place.

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COMMENT LETTER **PAGE 2 OF 2**

General Comments

5/13.00.25 I am uncomfortable with the idea of the new production facility being owned & operated by a private corporation, which has been suggested in one proposal. I strongly feel that whatever design is used that as in the past the United States Government be the owner and ultimate manager of the facility.

In the event that the decision is made to allow the private sector to own a defense facility I would ask that the DOE consider building a second facility capable of producing Tritium, as a secondary function. In the event the company was not able to meet the nations needs, this would still ensure a strong defense while providing many other benefits! Ex. A light water reactor with it's primary purpose to be power generation & plutonium destruction (burned) or a research based linear accelerator which could be used for Tritium production if necessary.

Thank You For Time
Sincerely

Carnell Eubanks

Carnell Eubanks
563 Hillman St.
Warrenville SC 29851

AMERICAN NUCLEAR SOCIETY

OAK RIDGE / KNOXVILLE SECTION

April 28, 1995

Address reply to:
Oak Ridge/Knoxville Section
American Nuclear Society
P.O. Box 5075
Oak Ridge, TN 37830-5075

U.S. Department of Energy
P.O. Box 3417
Alexandria, VA 22302

Comments on the Draft Programmatic Environmental Impact Statement (DPEIS) for Tritium Supply and Recycling

Ref: 1. U.S. Department of Energy, *Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling, Executive Summary and Volumes I and II*, DOE/EIS-0161, February 1995.

2. My letter, subject as above, April 24, 1995.

A revised compilation of detailed comments by the Oak Ridge/Knoxville Section of the American Nuclear Society is provided in the attachment. The revision to the comments submitted in Ref. 2 is made (1) to modify and amplify Comment 2 based on closer examination of the wording of Sect. 5.3 in the DPEIS and of the *Low-Level Radioactive Waste Policy Act* and (2) to provide an additional comment on the need to evaluate the impacts that selecting an accelerator would have on regulatory controls implementing the *Nuclear Non-Proliferation Act of 1978*. The following bullets briefly summarize the thrust of each detailed comment presented in the attachment:

★ All tritium requirements should be addressed including strategic defense, other defense missions, critical non-defense missions, and energy security; failure to consider energy security would not be consistent with goals imposed in Sects. 1602, 2001, and 2114 of the *Energy Policy Act of 1992*.

★ The classification of radioactive wastes generated by the target, multiplying blanket, and beam stop in the Accelerator Production of Tritium (APT) must be made by the U.S. Nuclear Regulatory Commission (NRC) either under Sects. 2(12)(B) and 2(16)(B) of the *Nuclear Waste Policy Act of 1982*, as amended, or under Sect. 2(9)(B) of the *Low-Level Radioactive Waste Policy Act*, or jointly under both.

★ The environmental evaluation of the APT must include the consideration of fissionable and fissile target materials and the comparative impacts that the electrical power requirements for different target materials have on waste streams, radiological and thermal effluent, and greenhouse gas emissions at the generating stations supplying power to the APT.

★ The accident analyses comparing impacts for the reactor alternatives to the APT must be revised so that there is parity; currently, the comparison is between postulated beyond-design-basis severe accidents for the reactors, in which all major safety systems including the robust containment are assumed to fail, and design basis accidents for the APT, in which key safety systems are assumed to work including the less-than-robust confinement.

★ The APT accident analyses should consider failures and events that NRC would likely impose in a licensing review. Examples include the risk of steam explosion during target melt and the failure to stop the beam in the event of loss of cooling. Consideration of these types of events is appropriate given that the APT (1) lacks inherent mitigating feedbacks, which licensed reactors must have for limiting over-power transients and mitigating Anticipated Transients without Scram (ATWS), and (2) does not have a robust containment.

★ The tritium supply technology should be licensed by NRC. Although accelerators are not addressed in the *Atomic Energy Act of 1954*, as amended, nor in the *Energy Reorganization Act of 1974*, as amended, NRC licensing of the APT should be assumed to assure consistency in the FPEIS and to avoid future possible legal challenges and costly delays that may arise from intervenors or from the states assorting jurisdiction over the candidate sites in the absence of NRC licensing and regulation.

★ To preclude the current rather misleading presentation of information, waste generation by each alternative should be quoted in several quantities besides volume; heavy metal content, projected Curie content, and other relevant factors should be included. As noted above, the APT as well as the heavy water reactor (HWR) should account for potential wastes generated by the electrical generating station(s) supplying the required power during production.

★ The multi-purpose reactor should be addressed in an integrated fashion to assure that the potential fiscal advantages of dual use for tritium production and plutonium disposition are obvious to the public if such advantages do exist.

★ The APT would be able to produce weapon-useable fissile material from source material if the latter were substituted for either helium-3 or lithium in the production targets. Since accelerators are not addressed in either the *Atomic Energy Act of 1954*, as amended, or the *Nuclear Non-Proliferation Act of 1978*, existing export controls given in NRC regulations at 10 CFR Part 110 and DOE regulations at 10 CFR Part 810 do not address controls on accelerator equipment that is used worldwide for research, development, and medical diagnosis and treatment. DOE should describe how key technology developed to deploy the APT, which is much more powerful than existing accelerators, will be controlled to assure no threat of proliferation.

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The Oak Ridge/Knoxville Section of the ANS is pleased to provide comments on the DPEIS for Tritium Supply and Recycling. If further information is needed, please contact us by mail at the address given above.

Sincerely,

David L. Moses, Ph.D., P.E.
Chairman 1994-95

Attachment

c: J. G. Toscas, ANS
A. E. Waltar, ANS

Detailed Comments by the Oak Ridge/Knoxville Section of the American Nuclear Society (ANS) on the U.S. Department of Energy (DOE) Draft Programmatic Environmental Impact Statement (DPEIS) for Tritium Supply and Recycling

Revised: April 28, 1995

Ref: U.S. Department of Energy, *Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling, Executive Summary and Volumes I and II*, DOE/EIS-0161, February 1995.

Introduction

The following comments address the information provided in the DPEIS and in the DOE presentations and handouts from the two DPEIS meetings held in Oak Ridge, Tennessee, on April 12, 1995. The comments are submitted to assist the DOE in preparing a balanced and technically defensible Final Programmatic Environmental Impact Statement (FPEIS) in support of the Record of Decision (ROD) and to assure that the best interests of the public are served in this important matter. It is hoped that the comments will be useful to DOE in assuring balance in the evaluations of the alternatives.

Documentation of Detailed Comments

1/18.09

★ Comment 1: The DPEIS focussed only on tritium supply for strategic defense. The FPEIS needs to address the total tritium supply needs for strategic defense, other defense missions, critical non-defense missions, and energy security consistent with both the intent of and the specific legally-binding goals imposed in Sects. 1602, 2001, and 2114 of the *Energy Policy Act of 1992*.

Detailed information, clarifications, and supplemental recommendations supporting Comment 1:

- During the scoping meetings on the Long-Term Storage and Disposition of Weapons-Usable Fissile Materials held in Oak Ridge on September 28, 1994, the DOE presentation on disposition of highly enriched uranium (HEU) discussed needs and uses of HEU material in the current stockpile for purposes other than for nuclear weapons. No equivalent discussion has been provided in the Tritium Supply and Recycling DPEIS documentation and presentations. Other needs should be addressed to assure that all DOE and government missions requiring tritium can be fulfilled successfully. Parity is needed in the planning process both for the preservation of strategic resources (such as HEU) and for the supply of the projected needs of strategic resources (such as tritium).

1/18.09 continued

- In particular, consistent with the least-cost and energy security goals of Sects. 1602, 2001, and 2114 of the *Energy Policy Act of 1992*, the FPEIS should describe how the need for tritium is to be met for energy research, development, and demonstration programs such as the International Thermonuclear Experimental Reactor (ITER). Specific attention should be given by DOE to the mechanisms by

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which long-term energy security is to be assured especially if such needs are to be met by foreign sources and not by the alternatives proposed in the DPEIS. DOE should explain why sources of supply that are not secure enough for strategic defense can be judged adequate for long-term energy security, recognizing that the lifetime of the proposed facility is 40 years starting up no later than the year 2011 and is thus within the lifetime of possible need for the deployment of fusion energy as a power source.

1/18.09 continued

- While the tritium needs for strategic defense are classified, the need for ITER alone has been quoted as being tens of kilograms of tritium. The capability of an alternative to satisfy at least part of the latter need should be considered by DOE in the selection of the technology for deployment.

2/10.03

★ Comment 2: The FPEIS needs to provide, at least by reference, documentation of the determination by the U.S. Nuclear Regulatory Commission (NRC) under Sects. 2(12)(B) and 2(16)(B) of the *Nuclear Waste Policy Act of 1982*, as amended, and under Sect. 2(9)(B) of the *Low-Level Radioactive Waste Policy Act* that the radioactive waste generated by spallation and activation in the target, multiplying blanket, and beam stop of the Accelerator Production of Tritium (APT) can be classified as low-level or mixed low-level and not high-level radioactive waste.

Detailed information, clarifications, and supplemental recommendations supporting Comment 2:

- Sect. A.2.1.4 (p. A-67) of Volume II of the DPEIS indicates that there is no high-level radioactive waste generated by the APT, only low-level waste and mixed low-level waste. The legal or regulatory basis for this assertion is not provided.

2/10.03 continued

- Heavy metal spallation and activation products in the APT include alpha emitters and many gamma emitters from both electron capture and positron emission. Spallation occurs due to the high-energy protons in the beam hitting the heavy metal atoms in the neutron-producing target as well as the resultant high-energy neutrons and protons emerging from spallation causing additional spallation and activation in the heavy metal target and multiplying blanket. Spallation and activation also take place in the beam stop when it is used to divert the beam from the target. Sect. A.2.1.4 (p. A-63) of the DPEIS indicates that the beam stop is capable of operation with full beam power for an unlimited time. Spallation and activation products formed in the APT have a significantly different mass distribution than fission products. Volatile radioactive metals such as mercury are formed as spallation products whereas mercury is not found in significant quantities in fission products. Many spallation and activation products decay away quickly, but some such as mercury-194 have significant half-lives.

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- At 200 MW of continuous power during operation, the beam energy delivered to the APT spallation target during its lifetime is at least four orders of magnitude and possibly as much as seven orders of magnitude or more greater than that in existing accelerators that operate intermittently and at much lower beam power. Thus, the content of spallation and activation products in the APT is several orders of magnitude greater in APT waste compared to existing accelerators. NRC has addressed over the past two decades the regulation and risks of low-level radioactive wastes from existing university, industry, and hospital accelerators in assessments reported in NUREG-0301, NUREG-0976, NUREG-1310, SECY-78-211, SECY-88-64, SECY-90-322, SECY-92-325, and NUREG/CR-5962, but the above assertion about the APT is a bit difficult to confirm readily for DOE-owned accelerators since the safety documentation for existing DOE facilities, including accelerators, is generally not publicly available and of limited distribution even within the DOE complex. Sect. A.2.1.4 (p. A-67) of the DPEIS indicates that spent lead targets have an activity of 10 to 20 million Curies (Ci) at discharge decreasing to 100,000 Ci over the first year. This is comparable to and within an order of magnitude of the activity in a spent fuel element from the High Flux Isotope Reactor (HFIR) located in Oak Ridge. Unpublished data on HFIR developed recently for the re-racking of spent fuel elements indicate that a typical HFIR spent fuel element contains about 50 million Ci at discharge (24 hours after shutdown) and about 370,000 Ci after one year. The radioactive waste generated in spent tungsten targets for the APT is not quantified in the DPEIS but should be in the FPEIS.

2/10.03 continued

- Sects. 5.1 through 5.4 and Table 5.3-1 (p. 5-9) of Volume I of the DPEIS indicate that DOE has committed to the provisions of the *Nuclear Waste Policy Act of 1982*, as amended, per the standards of 40 CFR Part 191 as well as to the provisions of the *Low-Level Radioactive Waste Policy Act*. Thus, the DPEIS indicates that DOE is not invoking the defense-waste non-applicability provisions of Sect. 8(a) of the *Nuclear Waste Policy Act* with regard to the new tritium supply technology. This interpretation is based on statements in Sect. 5.3 (p. 5-2) of the DPEIS in which DOE states that "Federal agencies must comply with all applicable provisions of Federal environmental statues and regulations" and that "DOE is committed to fully complying with all applicable environmental statutes, regulatory requirements." If the only applicable provision to which DOE is committing is the defense-waste non-applicability provision, then DOE needs to make that point clear to the public; otherwise DOE is obligated to obtain the requisite determination from the NRC under Sects. 2(12)(B) and 2(16)(B) of the *Nuclear Waste Policy Act* that APT radioactive wastes from the spallation and activation products in the target, multiplying blanket and beam stop are not high-level radioactive wastes.

2/10.03 continued

- Under Sect. 3(b)(1) of the *Low-Level Radioactive Waste Policy Act*, DOE is responsible for disposal of low-level radioactive waste, and, under Sect. 3(b)(2),

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DOE must use an NRC-licensed disposal facility if the activity that generates such waste is licensed by NRC. However, under Sect. 2(9)(B) of the *Low-Level Radioactive Waste Policy Act*, NRC not DOE retains the sole authority to classify low-level radioactive waste without regard to generating source. Thus, even if DOE were to claim non-applicability under the *Nuclear Waste Policy Act of 1982*, as amended, DOE is still obligated to obtain the requisite determination from the NRC that APT radioactive wastes from the spallation and activation products in the target, multiplying blanket and beam stop are not high-level radioactive wastes.

2/10.03 continued

- The definition for "high-level radioactive waste" in 10 CFR 60.2 does not appear to apply because of the scope limitations imposed in 10 CFR 60.1. The classification system given in 10 CFR 61.55 may not be appropriate either because the spallation and activation products in the APT target, multiplying blanket, and beam stop are significantly different than the radio-nuclides in reactor-derived waste streams upon which the rulemaking was based: namely, contamination with source, special nuclear, or by-product material as defined in Sect. 11 of the *Atomic Energy Act of 1954*, as amended, but, specifically, those listed in Table 1 and Table 2 of 10 CFR 61.55.

- To assure that the FPEIS is legally balanced in considering the reactor and APT alternatives with regard to radioactive wastes and to assure that the project is not delayed nor stalled by intervenors at a later critical date, DOE should obtain the requisite determination by NRC as soon as possible and preferably prior to issuing the FPEIS.

3/13.04.02

★ Comment 3: The FPEIS needs to address the comparative overall environmental impacts of alternative target/blanket materials for the APT. The FPEIS should address the comparative levels of waste generation, radioactive and thermal effluent, and greenhouse gas emissions from electrical generating stations supplying power to an APT using targets fabricated respectively from non-fissioning heavy metals (tungsten and lead), fissionable material (depleted uranium), and fissile material (such as uranium-235). For the same level of tritium production, the required beam power drops significantly for fissionable and especially fissile targets. After accounting for other potential power loads that may be required for alternative targets, the total waste generation and environmental loads from the APT and its supporting power station may be significantly less for a fissile target than for a non-fissioning heavy-metal target.

Detailed information, clarifications, and supplemental recommendations supporting Comment 3:

- As discussed in the DPEIS, the spallation target proposed for the APT is either tungsten or lead, and the proposed multiplying blanket is lead. Using a fissionable material such as uranium-238 for an optimally-designed target could

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increase the neutron yield by at least a factor of two compared to lead. Using a fissile material such as uranium-235, uranium-233, or plutonium-239 can increase the neutron yield by a factor of four to five or more. The increase in neutron yield relative to the incident beam power on the target would allow reducing the energy requirements for the beam for the same level of tritium production. The beam power was quoted by DOE as being more than half the APT's total energy requirements during the meeting in Oak Ridge.

- Tungsten is an important high-temperature refractory metal with many industrial applications. Unirradiated lead is regulated under the *Resource Conservation and Recovery Act*. As noted in the previous comment, it is not yet determined if spent lead or tungsten targets, multiplying blankets, and beam stops can be classified as low-level or mixed low-level radioactive wastes. DOE has an excess supply of both depleted uranium and enriched uranium from past weapons programs so there should be little additional cost to DOE. DOE also has excess uranium-233 and plutonium-239 that may provide other advantages as targets and that could be considered for the APT mission thereby beneficially supplementing and complementing other disposal mechanisms currently being considered.

- At a minimum, the FPEIS should address the lifetime impacts that target materials selection has on the waste streams and effluent at the APT facility and on waste streams, radioactive and thermal effluent, and greenhouse gas emissions by the generating station(s) supplying electrical power (nuclear, coal, and/or natural gas). The simplistic approach to APT power supply that has reportedly been adopted for the on-going cost analysis should not be used for this assessment. Environmental impacts are sensitive to both technology and site factors such as power losses in long-distance transmission that can increase waste and pollution at the generating station for each MWe delivered to the facility. A spectrum of electrical supply options (nuclear, coal, and gas) should be evaluated so that potential site dependence can be assessed. If use of a fissile target can reduce the power requirements from several hundred MWe to a few tens of MWe for the same level of tritium production, the overall environmental impacts should be reduced substantially.

4/11.02.04

★ Comment 4: Appendix F, "Facility Accidents," of the DPEIS needs to be revised substantially for the FPEIS to assure parity between the reactor and APT assumed accident scenarios. The high consequence accident analyses reported in the DPEIS compare latent cancer deaths from very low probability, beyond-design-basis severe accidents for the reactor alternatives, in which major safety related systems including the robust containment are assumed to fail, to design basis accidents for the APT, in which key safety systems are assumed to operate to mitigate the accident. For even the bounding low-to-moderate consequence accident, it is unclear as to whether the reactor containment and isolation systems are also assumed to fail making the probabilities much

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lower than that assumed in the DPEIS. In the DPEIS presentation of the APT low-to-moderate consequence accidents, all protective systems are assumed to operate. The assumed equipment failures and the specific reference documentation for the reactor accident analyses (deterministic safety analysis reports, probabilistic risk analyses, other topical reports submitted to NRC for bounding assessments) should be identified. The source term total inventory of releasable nuclides and the release fraction should be quantified for each accident and alternative technology.

Detailed information, clarifications, and supplemental recommendations supporting Comment 4:

- The disparity in assumptions and presented information between the reactor accidents and the APT accidents reported in the DPEIS is improperly biased in favor of the APT and is technically indefensible. The presentation of numbers of latent cancer deaths in tables without also presenting the risk along side is misleading and unacceptable. The assumed equipment failures and the associated probabilities of failure on demand (preferably at both 50 and 95 percent confidence) should be tabulated for each alternative and accident so that the reader can assess for himself the credibility or boundedness of the assumed accident. The inventory and release fraction should be included for the Modular High-Temperature Gas-Cooled Reactor (MHTGR) and the APT for comparison to that provided for the water-cooled reactors. Where credit is taken or not taken for inherent safety features such as hold-up in the LWR water or in the MHTGR fuel and graphite should be noted and explained. Whether an elevated release or near-ground release is assumed should be indicated.

★ Comment 5: The FPEIS accident analysis should include accidents for the APT that the NRC would be likely to impose as part of a licensing review of both the deterministic and probabilistic safety case. For example, it is likely that the NRC would require assuming that the beam is not stopped when a loss of target cooling occurs given the absence of inherent feedbacks short of target relocation due to melting or vaporization. This would be analogous to the Anticipated Transient without Scram (ATWS) event imposed by NRC for licensing of commercial reactors, which do have inherent feedback mechanisms to mitigate such transients. Similarly, considering that the proposed APT lacks a strong containment building, the NRC would also likely require assessing the probability and consequences of a steam explosion occurring if cooling flow can be restored after major melting of the target and blanket occurs or if the melted target can drop into water such as in the case of passive building flooding described in Sect. F.2.1.4.3 (p. F-20) of the DPEIS. 5/13.04.12

Detailed information, clarifications, and supplemental recommendations supporting Comment 5:

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- The DPEIS assumed beam termination occurred resulting in only partial melting of the target. One of the major operability and availability issues for a continuous beam accelerator is to design the APT so that inadvertent loss of the beam is minimized to assure meeting availability goals. The accelerator system is spread out over a mile, is designed to assure continued beam availability, and is to use equipment that has yet to be configured and operated for high availability and reliability with anywhere near the experience base of reactor control, protection and engineered safety features. There is confidence that a reliable protection system for the APT can be designed and demonstrated based on the long history of achieving success in the nuclear industry. However, imposing the assumption that, given no inherent feedback mechanisms short of target destruction, the beam stays on during a major upset in the target area, which is not located in a containment building like the reactors, does not seem to be overly conservative or unwarranted for this stage of the design. It can be assumed that NRC would follow a similar logic in requiring the implementation of a defense-in-depth philosophy.

- Compared to the non-fissioning heavy-metal target, a fissile target may provide some advantages in a loss of cooling with delayed beam trip due to substantially lower beam power requirements and to the feedback from reduced supplemental fissions if moderation is lost or decreases upon loss of coolant. In fact in a non-fissioning heavy-metal target, secondary spallation may increase in the target and blanket due to loss of moderation of very high energy neutrons in the coolant. Decay heating rates would be higher in a fissile target, but the comparison should be analyzed.

- Steam explosion as a mechanism for vessel failure or for initiating direct containment heating has been a major issue for severe accidents considered in the NRC certification of advanced light water reactors (ALWRs). The issue would have to be satisfactorily resolved for the APT considering the possibility of high-temperature melting of a highly radioactive target in a confinement.

- Other issues the NRC may raise are the effects of beam and thermal cycling on target integrity and the release of radioactive gases into the coolant during normal operations and transients. Also besides steam explosion, the NRC would probably want a quantification of the potential for and degree of water or steam oxidation of high-temperature or molten target and blanket metals during an accident and the resulting potential effects of detonation or burning of the released hydrogen on the confinement building and safety-related equipment. It may be that this latter point is not very significant because of the small amount of reacting metal compared to a large reactor, but a reactor would be located in a strong containment not a confinement.

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6/10.36

★ Comment 6: Consistent with the assumption by the DOE Office of Fissile Materials Disposition that options for the disposition of plutonium would have to be licensed by NRC to be deployed, the DOE should assume that the tritium supply technology will be licensed by NRC. NRC can provide the necessary independent review and oversight, and it is likely that the NRC would be required to oversee the confirmatory inspections, tests, analysis of the ALWR if selected for tritium supply so that the conditions of certification are validated for licensed operation. The Defense Nuclear Facility Safety Board (DNFSB) is judged not to be equipped for this task without using the NRC as permitted under law. It would be best not to burden the process with the DNFSB when the NRC has a proven track record for nuclear safety assurance based on the licensing and on-going regulation of over a hundred commercial reactors and numerous nuclear materials facilities. NRC also has provided DOE with the independent reviews for Naval Reactors, the Fast Flux Test Facility and the Light Water Breeder Reactor at Shippingport.

Detailed information, clarifications, and supplemental recommendations supporting Comment 6:

- The ALWRs are already in the NRC certification process under 10 CFR Part 52. The Commercial MHTGR has received a pre-application review documented in NUREG-1338. The APT and heavy water reactor (HWR) should be treated consistently with the other options. With regard to the HWR, the NRC has and can marshall recent and arguably relevant experience both from on-going re-licensing reviews of low-power, low-temperature aluminum-fuel-clad research reactors and from the pre-application safety reviews of the CANDU-3, a HWR power reactor but not a low-temperature aluminum-fuel-clad production reactor. The APT raises the legitimate question of what authority and experience the NRC has with regard to "licensing" an accelerator.

- Accelerators are not addressed in the *Atomic Energy Act of 1954*, as amended, nor in the *Energy Reorganization Act of 1974*, as amended. This situation exists because the authors of these laws never envisioned an accelerator of the power and radiation levels of the APT. The only place that the term "accelerator" appears in the codified energy laws (Title 42, *United States Code*) is at 42 USC 13503(a)(2)(D) in regard to a citation of a comparative review of accelerator and reactor neutron source technologies. In current NRC regulations, the term "accelerator" appears four times but in connection with the presence of source or by-product materials in accelerator targets or devices. Tritium is treated as a by-product material in the NRC regulations (such as 10 CFR Parts 30 and 33) although by the legal definition given in Sect. 11(e) of the *Atomic Energy Act of 1954*, as amended, tritium is apparently only a by-product material if "yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear materials." Other citations in regard to accelerator-produced radio-isotopes are found in several NRC guidance documents and reports. As described in the DPEIS, the APT makes no usage of

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NRC-regulated source, special nuclear, or by-product material as defined in Sect. 11 of the *Atomic Energy Act of 1954*, as amended, so the APT does not fall under the definitions of either production facility or utilization facility as defined in the law and used in 10 CFR Part 50 for licensing such facilities. But, as noted in Comments 2 and 3, this current design selection does not prevent NRC from having regulatory authority over the wastes generated by the APT nor is it perhaps the most environmentally judicious selection when the wastes and emissions from the station(s) supplying electrical power are properly considered. Switching target materials in the APT to utilize source or special nuclear materials would reclassify the APT to a production facility as defined in the law.

- However, NRC apparently may already assume more general responsibility for accelerators under its authorizing legislation based on the wording of Sects. 4 and 5 of the "Memorandum of Understanding Between the Nuclear Regulatory Commission and the Occupational Health and Safety Administration," *Federal Register 53*, p. 43950, October 31, 1988. This memorandum acknowledges OSHA responsibilities to regulate worker radiological safety at accelerator facilities while also acknowledging unique NRC responsibilities for protecting public health and safety and protecting the environment from radiological hazards. OSHA regulations in 29 CFR 1910.96 apply to worker safety at accelerator facilities, but there are no equivalent NRC regulations governing the protection of public health and safety or the environment from accelerator operational hazards because, prior to the proposed APT, there has not been an accelerator with the capability to pose a significant operational hazard. Given the DPEIS optimistic assessment of APT impacts on public health and safety and on the environment and in light of the information provided above in Comments 2, 4, and 5, DOE would be prudent to use NRC as an independent authority for the safety review, licensing and regulation of the APT. The technology issues of safety-related instrumentation and controls, cooling water systems, electrical power supply, seismic and environmental qualification of structures and equipment including vessel and containment structures, and analysis of accident risk are all areas of expertise for the NRC and are all areas requiring review for the APT safety case.

- Adapting NRC-sanctioned reactor standards for the APT and having NRC judge the adequacy of applying those standards to the APT appears to be a fair and cost effective approach if one considers the potential problems outlined below.

- DOE is authorized to regulate its contractors under the authority granted by Congress in the *Price-Anderson Amendments Act of 1988*. However, for the FPEIS, DOE should not assume self-regulation of the alternatives, including the APT, under Sect. 234A of the *Atomic Energy Act of 1954*, as amended. The rulemaking process under this part of the law is perceived to be behind schedule, not adequately supported by existing DOE guidance and staff, subject to a plethora of contractual interpretations, and subject to political maneuvering in both

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Congress and the Administration. It is not yet transparent to the public and may be challenged by intervenors as not being sufficiently independent. As noted above the DNFSB also lacks the resources unless it chooses to use the NRC. Cost effective program advancement is judged to be too risky along this route. It is not a proven standard of practice suitable for the FPEIS.

- If DOE avoids early commitment to NRC licensing, intervenors may stymie that decision, or the state government for the preferred candidate site may choose to impose its own requirements under or in spite of Compliance Agreements given the lack of either existing NRC regulations or the precedence of applying existing NRC regulations to an accelerator like the APT. As reported in the press, DOE relations with the governments in Idaho and Nevada with regard to handling nuclear materials is not the best. The taxpayer should not have to pay for delays that can be avoided. Committing to NRC licensing is judged to be the best option to avoid these pitfalls.

7/10.03

★ Comment 7: Quoting all waste production in cubic yards is misleading because it does not account for volume reduction or disposal packaging required nor for the projected radiation load. The MHTGR is misrepresented as being penalized when in fact the graphite fuel blocks have been found to be an advantage in studies performed and published by Oak Ridge National Laboratory. Volume, Curie content at shipment, and mass of waste, especially the heavy metal content, should be presented along with an estimate of effort or dollars required to package/compact the waste for disposal. The argument presented by DOE at the meeting in Oak Ridge that a simple measure is needed so the public can understand may be perceived as condescending and demeaning to the public. In addition consistent with Comment 3 above, the APT as well as the HWR should account for potential wastes generated by the electrical generating station(s) supplying the required power during production.

8/14.01

★ Comment 8: DOE needs to provide an integrated effort on the multi-purpose reactor for tritium production and plutonium disposal. The separate, uncoordinated approach being pursued in the respective DPEIS processes by the Office of Reconfiguration and the Office of Fissile Materials Disposition is questionable policy in the present era of constrained budgets and is potential fodder for DOE detractors in Congress. An integrated mission-evaluation allows for the clarification of cost advantages that may not be obvious nor even present in separate or disjointed analyses. An extreme example of this is that the Gas-Turbine Modular Helium Reactor (GT-MHR) is being considered for plutonium disposition while the Steam-Cycle MHTGR is being addressed for tritium supply although the DPEIS used GT-MHR reports as references. The taxpayer should not have to bear the burden of paying for two separate technologies and facilities when one can do both missions simultaneously for less capital and operating cost.

Detailed Comments
Page 11
Revised: April 28, 1995

9/13.04.13

★ Comment 9: The APT would be able to produce weapon-useable fissile material from source material if the latter were substituted for either helium-3 or lithium in the production targets. Since accelerators are not addressed in either the *Atomic Energy Act of 1954*, as amended, or the *Nuclear Non-Proliferation Act of 1978*, existing export controls given in NRC regulations at 10 CFR Part 110 and DOE regulations at 10 CFR Part 810 do not address controls on accelerator equipment that is used worldwide for research, development, and medical diagnosis and treatment. DOE should describe how key technology developed to deploy the APT, which is much more powerful than existing accelerators, will be controlled to assure no threat of proliferation.

Detailed information, clarifications, and supplemental recommendations supporting Comment 9:

- Since accelerator technology and equipment are already widely available, any country with an ample domestic supply of petroleum can buy the necessary equipment, employ its foreign-trained physicists, and produce the electricity needed to run such a device without oversight by the International Atomic Energy Agency. Depleted uranium, which is a commonly-used gamma-ray shielding material for accelerators, is an ideal target for absorbing spallation neutrons and producing plutonium. Domestic supplies of natural uranium and thorium could be used covertly without import restrictions placed on equipment that would be used in a reactor. Solutions by DOE to assure system availability in the scale-up of existing technologies will be of interest to all accelerator users no matter what the application.

- The provisions of Sects. 11(y), 142 and 148 of the *Atomic Energy Act of 1954*, as amended, with regard to classified information and unclassified controlled nuclear information (UCNI) apparently do not apply to APT technology because the Act does not apply. Currently classification controls would have to be made under National Security Information (NSI) by the Department of Defense. None of this is addressed in the DPEIS for the APT, but the situation is covered by law for the reactor options. Any such controls have to be applied carefully so that the availability of public information about public health and safety and environmental protection issues is not sacrificed. Past DOE practices of not adequately segregating classified or controlled information from public information may be challenged by activists or intervenors early in the project as violating the prohibitions against concealment at 18 USC 1001 and 2071(b). The cost impact of failing to plan for such contingencies should not be a burden on the taxpayer.

Conclusions

The Oak Ridge/Knoxville Section of the ANS is pleased to provide comments on the DPEIS for Tritium Supply and Recycling. If further information is needed, please contact us by mail at P.O. Box 5075, Oak Ridge, TN 37830-5075.

TSR–M–094
COMMENT LETTER

PAGE 1 OF 1

1/13.09.04 WE DO NOT WANT A TRITIUM PRODUCING FACILITY IN S.C. WE ALREADY HAVE MORE THAN OUR SHARE OF TOXIC WASTE IN OUR GROUND AND WATER. WE MUST SET AN EXAMPLE TO OTHER COUNTRIES BY NOT PRODUCING TRITIUM. CLEAN UP SAV. RIVER SITE, ANNISTON, AL ETC INSTEAD.

Chris & Sally MacMillan
Big Buck Island
24 Buck Point Road
Bluffton, SC 29910

POST CARD

DEPT. OF ENERGY
SAVANNAH RIVER OPER. OFFICE
P O BOX A
AIKEN, SC 29802

TSR–M–095
COMMENT LETTER

PAGE 1 OF 1

THOMAS L. MOORE

THE SENATE OF SOUTH CAROLINA

April 19, 1995

Mr. Rick Ford
Department of Energy
Post Office Box 616
Aiken, S.C. 29802

Dear Mr. Ford:

1/13.09.01 It is my understanding that a public hearing is being held on Thursday, April 20, 1995, to gather comments on the possibility of the Department of Energy locating a tritium supply facility at Savannah River site. I regret that I will be unable to attend this meeting and participate in the workshops for I feel that the locating of this facility at SRS would be a great benefit to Aiken County and the Department of Energy.

Relative to the fact that SRS has the existing infrastructure along with 40 years of tritium production and handling experience through a talented and skilled workforce, I wholeheartedly support and would lobby in favor of SRS. The history of SRS's safety performance record and the unmatched local public support lead me to believe that this project rallies in support from all facets of the Aiken area.

I would respectfully request that when reviewing your options, you will keep in mind my above comments and my heartfelt support. I trust that you will feel free to contact me with any questions that I may be able to answer for you.

Very truly yours,

Thomas L. Moore

TLM:avp

tritum-4.se

4/18/95

Department of Energy
Savannah River Operations Office
P.O. Box A
Aiken, South Carolina 29802

1/14.02

Dear Interested Party: Enough is Enough! I am totally opposed to the location of a tritium facility at the Savannah River Site –

The Department of Energy is proposing to build a facility to produce tritium for the next 40 years. Tritium is a hydrogen isotope used in nuclear weapons. The Department is asking the public to provide input on which technology it should employ and where it should locate such a facility. The Savannah River Site is one of five candidate sites under consideration for this program, which is presented in the Draft Programmatic Environmental Impact Statement for Tritium Supply and Recycling.

On April 20, 1995, the Department will host public meetings from 12:00 noon to 4:30 p.m. and from 6:00 p.m. to 10:30 p.m. at the

North Augusta Community Center
101 Brookside Drive
North Augusta, South Carolina

to provide the opportunity to discuss, ask questions, and submit comments on the Draft Programmatic Environmental Impact Statement. This meeting will feature discussion groups on Alternative Descriptions and Environmental Effects.

To receive more information on how to participate, preregister, hear alternative public hearing dates and locations in other states, or provide comments, call 1-800-776-2765.

Thank you for your interest in Savannah River Site environmental issues.

Sincerely,

Arthur B. Gould, Jr., Director
Environmental Compliance Division
SR NEPA Compliance Officer

Please read article at note at top of page –
Susan S. Dulany

OP]

8A – Morning News, Thursday, April 6, 1995 • • • •

Savannah Morning News.
Established 1850

FRANK T. ANDERSON
Publisher

REXANNA KELLER LESTER
Executive Editor

THOMAS S. BARTON
Editorial Page Editor

DAN SUWYN
Managing Editor

High price of victory

2/04.02.09

THIS week's U.S. Department of Energy report that cleanup of the nation's nuclear weapons plants that helped win the Cold War — including the Savannah River Site — will cost $230 billion and take 75 years is a little unnerving to say the least.

That's because the government's estimate is so low. The real cost could reach $350 billion if current wastes and inefficiencies in the cleanup aren't eliminated.

In addition, the Energy Department's study says that even after the public has paid immense sums to tidy up the sites, the problems won't be fixed. The government may have to spend up to $75 million a year to cordon off hundreds of acres at some major sites indefinitely because of severe contamination from buried debris.

But Congress isn't in any mood to make any big, long-term investments. In fact, it may cut the $6 billion that's currently spent on cleanups each year.

What makes the report so stark is that only two weeks ago the Energy Department was telling the public about a budget squeeze that will result in 4,200 of the 21,000 workers at the Savannah River Site being discharged in the next few months. SRS is located about 100 miles upriver from Savannah near Aiken, S.C., and Augusta.

For Savannah and other communities that are downriver from SRS, the government's ability and willingness to clean up its radioactive messes is a big concern. In fact, as area communities increasingly look to the Savannah River as an alternative to the aquifer for drinking water, preserving the quality of the river's water over the long term is in the public's best interest.

Westinghouse Savannah River Co., which operates SRS, has noted a general downward trend in the plant's radioactive releases since 1984. In a report that Westinghouse released last August, the company said the largest radiation dose that anyone off-site could have received in 1993 was 0.25 millirems. By comparison, the report stated, the average U.S. resident receives about 300 millirems of exposure annually from natural and man-made sources.

The reduced exposure level is positive — and that's all the more reason to continue the push to clean up SRS.

The assurances that the SRS cleanup would take 30 years and keep the number of workers employed there stable at about 21,000 do not square with a sharply cut budget and 4,200 workers soon to be fired.

The Energy Department cannot afford anything less than a full-scale cleanup effort. The congressional delegations of Georgia and South Carolina should be emphasizing this as well.

Weapons plants like SRS served their purpose. Unfortunately, it would appear that the total bill for the victory in the Cold War is yet to be calculated.

TSR–M–097
COMMENT LETTER **PAGE 1 OF 1**

APR-25-1995 05:27 FROM 1st REALTY OF AIKEN TO 7254657 P.02

Circulation 82,000 Daily
95,000 Sunday

THE AUGUSTA CHRONICLE
Augusta, Georgia

Tuesday - April 25, 1995
Page 4A
Page 1 of 1

SOUTH CAROLINA EDITION

SRS backers speak out

Often when public hearings are called to air various proposals affecting the Savannah River Site, anti-nuclear zealots and plant foes come out in force while the "silent majority," which generally favors SRS missions, is barely represented at all.

That's why it is heartening the "antis" were outnumbered at a couple of U.S. Department of Energy hearings last week in North Augusta on how and where the U.S. will resume tritium production — a decision DOE is expected to make next November.

A large majority of participants, including U.S. Rep. Lindsey Graham, R-S.C., and Metro Augusta Chamber of Commerce Board Chairman Warren Daniel, were on hand. They argued forcefully that if the U.S. is to continue as a nuclear power, as it certainly should, then SRS is the clear choice to produce tritium, a necessary nuclear weapon component.

The expertise and infrastructure is already here to build and sustain a new multi-purpose reactor, they point out, and support for it is uniformly strong throughout the Augusta-Aiken area. How many other potential tritium sites can make those claims?

In response, SRS foe Brian Costner of the Energy Research Foundation in Columbia claims the international conference in New York to renew nuclear non-proliferation means the U.S. should get out of the nuclear arms business. He called tritium production "a pork barrel project" that purports to solve a "proliferation policy with a non-proliferation answer."

Someone needs to tell Costner and like-minded eggheads that the U.S. is one of the five nations that the treaty allows to maintain a nuclear arsenal. The five original "nuclear club" members, in fact, called for non-proliferation 25 years ago.

Moreover, success has been mixed. Three nations believed to have nuclear capability — India, Pakistan and Israel — never signed the treaty. Four others — Iraq, Iran, North Korea and Libya — did sign it, but haven't complied with it; each has developed nuclear weapons, or is close to it.

As the Oklahoma City bombing and deadly gas attacks in Japan prove, this is still a very dangerous world we live in. It's wishful thinking at its worst to believe that unilateral disarmament, nuclear or otherwise, would enhance our security.

1/08.04

2/18.01

SRS Public Relations Department News Clips 803/725-8563

TSR–M–098
COMMENT LETTER **PAGE 1 OF 2**

GEORGE M. MINOT
3 Bateau Road
Hilton Head Island, SC 29928-3012
803-363-5150

Memorandum

To: Rick Ford, Department of Energy-Savannah River

From: George M. Minot

Date: April 19, 1995

Subject: **Comments and Questions on Draft Programmatic Environmental Impact Statement (PEIS) for Tritium Supply and Recycling**

BACKGROUND:

DOE terminated plans for a new tritium production facility in September, 1992. I was told this decision was reached, in part, as a "good faith" effort on the part of the United States to keep its Non-Proliferation Treaty (NPT) pledge to work toward the eventual elimination of all nuclear arms, including our own.

Since that time, I understand there has been an on-going, intense debate within the current administration between the "traditionalists"(those supporting an arsenal of nuclear weapons for the foreseeable future to deter nuclear-armed foes) and the "others" (those who believe that the best alternative is to lead the world toward a total elimination of nuclear weapons) regarding continued nuclear testing and nuclear weapons development. Also, being from South Carolina, I understand the considerable amount of "pressure" being brought to bear by Senator Strom Thurmond, Representative Floyd Spence and other political leaders to guarantee a future mission for the Savannah River Site (SRS).

Furthermore, I have been informed that with current arms control agreements, tritium production will not be needed for over twenty (20) years - we will have enough tritium from weapons being dismantled to supply our needs through at least 2016. Also, any further arms reduction agreements would likely extend this date farther into the future.

COMMENTS AND QUESTIONS:

1. If the construction estimates for the various alternatives being considered, ranging from five (5) years for the Accelerator Production for Tritium (APT) to nine (9) years for the Modular High Temperature Gas-cooled Reactor (MHTGR), are correct, why does DOE contend it may need fifteen (15) years to bring a new tritium production facility on line?

1/13.00.09

2/20.02

2. I understand that DOE officials were prepared to meet the Council of Environmental Quality (CEQ) requirement to designate a "preferred alternative" in this Draft PEIS by identifying the Accelerator Production for Tritium (APT) technology and the Nevada Test Site (NTS) location. However, pressure applied on Secretary O'Leary from the South Carolina and Georgia politicians succeeded in postponing any such designation. *Question* - when is a requirement not a requirement? *Answer* - when pork barrel politics are involved and/or when long-time SRS-reactor site proponents hear unfamiliar acronyms (i.e. APT and NTS).

3/13.00.12

3. What is the real basis for considering Heavy Water Reactor (HWR), Modular High Temperature Gas-cooled Reactor (MHTGR) and Advanced Light Water Reactor (ALWR) technologies? Isn't it really Construction Time, Construction Workers and Production Workers (i.e., jobs)? I understand that despite over $1 billion spent on completed technical studies, DOE's Office of Defense Programs does not believe a reactor technology is the best option for tritium production.

4/22.02

4. Both the MHTGR and ALWR alternative descriptions include a power conversion facility designed to produce electricity as an integral part of the design. Isn't this approach in direct conflict with the U.S.'s long-standing policy of separating civilian nuclear energy production from nuclear weapons manufacturing? Also, wouldn't this strengthen the positions of Iraq, Iran, North Korea and others in the nuclear safeguards debates? In addition, without any discussion of costs associated with the additional facilities/administration to produce and deliver electricity, it is impossible to estimate the size of the government subsidy involved. I understand that in the last ten (10) years, DOE has spent over $650 million on MHTGR technology and over $425 million on ALWR technology and no company or group of companies has yet to offer to build and operate such a reactor without a sizable government subsidy.

5/13.00.31

6/18.01

5. Doesn't the Multipurpose ("Triple-Play") Reactor concept fly-in-the-face of the U.S.'s position with regard to the International Atomic Energy Agency mission of detecting the misuse of known, ostensibly legitimate nuclear facilities? If we build a reactor that uses plutonium, how difficult will it be to discourage other countries from doing the same? How much more difficult will it be to keep track of fissile materials? Again, without any discussion of costs associated with the plutonium pit disassembly/conversion/plutonium oxide fuel fabrication facility, it is impossible to properly evaluate this possible alternative.

BM

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AUSTIN, TEXAS 78768-2910
(512) 463-0470

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610 E. FIRST STREET
DUMAS, TEXAS 79029
(806) 935-5445

1111 S. TAYLOR
AMARILLO, TEXAS 79101
(806) 374-8787

DAVID SWINFORD
STATE REPRESENTATIVE

COMMITTEES:
APPROPRIATIONS
AGRICULTURE AND LIVESTOCK
LOCAL AND CONSENT CALENDARS

April 27, 1995

Secretary of Energy Hazel R. O'Leary
c/o Office of Reconfiguration, DP-25
U.S. Department of Energy
P.O. Box 3417
Alexandria, Virginia 22302

Dear Secretary O'Leary,

1/13.08.01

Thank you for this opportunity to express our support for retention and expansion of the Pantex Plant through the proposed draft Tritium Supply and Recycling Programmatic Environmental Impact Statement issued by the U.S. Department of Energy (DOE). We would like to compliment you and the Department of Energy for holding this important hearing to ensure both

2/15.01

that public concerns and views are fully considered, and that Pantex remains a vital, environmentally sound facility for decades to come.

First and foremost, we are adamant that any current and future functions at Pantex will be conducted in a safe and environmentally sound manner. Our first priority is to ensure any expansion at Pantex be implemented in a way that does not impair the health or safety of area residents or have an adverse affect on the environment. These goals serve as a prerequisite to any current or future activities at Pantex, including expansion.

1/13.08.01 continued

We endorse the siting of any new activities to be sited at Pantex through the DOE's deliberations on the PEIS, given adequate assurances that such storage is safe and environmentally sound. We would support a new tritium facility at Pantex, if DOE chose Pantex as the preferred sight. Pantex is an ideal site for any new functions, because of the unparalleled local and statewide support enjoyed by the plant, lower labor and utility costs, lower costs to DOE through environmental soundness at Pantex, and other factors. Given the fiscal constraints faced by the federal government, cost effectiveness, efficiency, and environmental soundness - all adding up to lower costs, especially when capital outlays necessary to transfer functions are factored in - should be of paramount importance in decision-making processes such as these. Pantex, because of its inefficiency, cost effectiveness, and existing capital plant, should be an obvious choice for expanded functions, and remain a vital part of the Nuclear Weapons Complex, as well as an

DISTRICT 87
POTTER AND MOORE COUNTIES

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COMMENT LETTER **PAGE 2 OF 2**

active participant in fissile materials storage and disposition activities.

3/14.09 Finally, we believe that all of these goals can best be met through the inclusion of research in DOE's decision-making process. We strongly support the recent establishment of the Amarillo National Resource Center at Pantex, with adequate funding to examine these increasingly critical issues. In addition, we support the formation of the Higher Education Consortium by the Texas A&M University System, Texas Tech University, and The University of Texas System to manage the Amarillo National Resource Center. This consortium offers a wealth of resources to assist DOE in addressing these issues, which are of the utmost importance to our national security.

Thank you for the opportunity to express our views. We look forward to working with you on these vital issues.

Sincerely,

David Swinford

DS/ncf

TSR–M–100
COMMENT LETTER **PAGE 1 OF 1**

US DOE
PO Box 3417
Alexandria, VA 22301

Dear Department of Energy Personnel: April 24,1995

As a concerned citizen, I would like to register my opinion on the siting of the Tritium Recycling Missions and the New Tritium Source.

It is obvious to me that to be most cost effective the New Tritium Source and the Recycling Missions need to be located at one site. As a prudent tax payer I want to get the most bang for my tax dollar, and having the source and recycling in one place is fiscally sensible.

The new state of the art Replacement Tritium Facility completed last year at a cost of $400M has been functioning as a leader in the DOE Complex in the areas of Safety and Conduct of Operations for the past year.

1/13.09.01 The Savannah River Site has the expertise, the infrastructure, and safety record to support all of the DOE's Tritium Missions.

Weather the New Tritium Source is an Accelerator or one of the reactor types, the only logical place to site the DOE's Tritium Missions is at SRS.

Where else but SRS could the DOE get such broad public support, a safety record that is equaled by none in the DOE Complex, and an infrastructure that has served our country well for the past 40 years.

I urge you to do the right thing and keep all the Tritium Recycling Missions and site the New Tritium Source, whatever that source may be, at the Savannah River Site.

Respectfully Yours:

G. Bruce Raymond
4597 Bedford Dr.
Evans, GA 30809
706-855-5869

714 Warren Drive
Pleasant View TN 37146
April 22, 1995

Stephen Sohinki, Director
Office of Reconfiguration
U.S. DOE
P.O. Box 3417
Alexandria, VA 22302

Dear Mr. Sohinki:

1/13.00.01 I ask that DOE choose the "No Action" alternative for the "Tritium Supply and Recycling Programmatic Environmental Impact Statement." The U.S. should not attempt to maintain START II nuclear arms levels for into the next century. We should concentrate on further reductions.

2/18.01

As a citizen of Tennessee, I am particularly distressed that Tennessee is being considered for a new nuclear arms factory. Haven't we had enough? Oak Ridge is hopelessly polluted with mercury. The safety controls were so slipshod during wartime that many Tennesseans and neighbors who worked in Oak Ridge died early deaths. Whenever a scientist tries to research these topics he or she is cut off. Tennessee needs no expansion of nuclear facilities.

3/13.07.01

Martha Wetherman

Voter
Nampa, Idaho 83686

To: U. S. Department Of Energy
Box 3417
Alexandria, VA 22302

Subject: **Tritium options and all other issues relevant to existence of nuclear material in the State of Idaho. No! One simple word. One simple issue.**

I have come to the conclusion that there is no other issue to consider when it comes time to cast a vote for any politician regardless of office. ***If that individual at any time lends consent or support to any effort to allow nuclear material to reside this state, my vote in the next election will be against that individual .... regardless of what other issues exist, regardless of what the opponent stands for.*** There simply is no greater possible issue to consider.

Governor Phil Batt, you have already lost my vote in the next election unless you back up your most recent rhetoric with strong and unbending action. Rhetoric is not enough. It is nearly too late to redeem yourself. You have allowed yourself to be marked by the Fed. Govt. as a "pushover" on this issue and it is going to take a colossal effort on your part to stand against the onslaught now. But if you don't stand against it you will not have my vote in the next election. The only stand that is a successful one is one that **keeps nuclear shipments out of the State of Idaho.** One more shipment and you have lost my vote. Period.

1/13.05.02

I am currently coming into a huge sum of money. I intend to make this issue my avocation in life until INEL has all nuclear material physically removed from this State including what is currently here.

I will sponsor adds in the papers, and any local media that will run those adds, to convince the general public to adopt this same very simple stance, and fund any coalition that might develop. One single political issue. Sanity.

Past Governor Cecil Andrus was fully prepared to stand armed at the border of this State with the entire contingent of State police and forcibly turn those shipments back if necessary. I expect the same attitude from any Governor of this State. I would personally load up and go stand there with him in a heartbeat if the call was made and would gladly risk my life to get that garbage out of this State. So would most of the sane men in Idaho.

I know damned well the Federal Government is not about to go into armed conflict with a State to find a nuclear dump site. They will follow the path of least resistance and put one elsewhere.

Andrus knew this and was not afraid to pull that trump card and the Fed. Govt. knew that. I think that's what it takes and that less will not sway them. I hate violence. But I would have followed Governor Andrus out there into whatever violence developed, and I would have done it in a heartbeat.

I also contend that 90% of the impetus pushing gun control legislation is deliberately designed to disarm America so that public resistance of this nature will not be possible. It is called freedom of choice. We are about to lose it if people don't wake up and take action.

Vote, and vote on one or two issues and ignore all else. Never lose that focus no matter what the consequences. If that's what it takes, it is time to start doing it.

2/11.00.12 To have nuclear waste stored directly above the largest aquifer in this State is plain and simple insanity. To expect people to buy in on rationality that it is "safe" is an insult to intelligence. So long it is there the safety of thousands of people rides on a literal roulette wheel.

To even consider building a reactor in this State demonstrates the utmost stupidity imaginable. The Federal Government has repeatedly demonstrated it will pull out all stops to force shipment of nuclear waste into this State against our will. ***Why give them still another toe-hold?*** A Tritium reactor? Forget it!

The basements of the White House and Pentagon would be an ideal place to store that insane nuclear garbage. No, I am not kidding. That is where the idiocy which created this mess resides. Let them live with it face to face every day, not the innocent people of the State of Idaho. What is wrong with the middle of the Nevada desert? Why store that kind of insanity right in the middle of major populated areas directly over major aquifers that could render a quarter of the state a literal ghost town if ever severely polluted..... one single accident?

"Accident" is too lenient. It is absolutely guaranteed to happen sooner or later. Can you guarantee a concrete building will stand without a crack in it for one thousand years? Can you guarantee no earthquakes will happen in that time? Hell, no!!

It wasn't too long ago the INEL lost several tons of nuclear waste. Lost it. Couldn't find it. And you want us to trust that kind of stupidity? Let them build a @#&! Tritium reactor here?

It is the same kind of stupidity as forcing firefighters to load their pockets with hand grenades. Hell, they're safe .... look ... the pins are still in them! Yeah, sure guys. Do you really think we are that stupid?

Now let's get back to rights. States are supposed to be sovereign. The Federal Government is supposed to serve the Sovereign States. Not the other way around. I don't know where or how this principle became compromised, but it is time to start working to reinforce it. I stress the word force. If necessary. Quite simply the public has been lulled to sleep. It is time to wake up and regain rightful control of our own destiny as a State, it is time to demand that our politicians stand behind us in that pursuit, and it is time to hold them fully accountable when they don't.

For Governor Batt; Concerning gun control: Here's a novel idea:

1. The Constitution plainly and undeniably lays out the right to keep and bear arms as an inalienable right, without qualification.

2. I contend that if it doesn't already exist, it ought to be a mandatory requirement to public office that any individual taking public office swears an oath to uphold the Constitution of the United States.

3. I would like to see laws passed which state that any holder of public office who so much as suggests changing the Constitution or interpreting it other than what is laid out in plain black and white, or "regulating it", or upholding existing "regulation" of it, be considered to have made a defacto disqualification of self for office and be summarily dismissed from office the same day.

Nice and simple. ***It is time for the voting public to start voting based on this very principal whether such laws exists or not.***

I have been voting this way for some time. Before the year is out, there will be ads in the media imploring all Idaho citizens to do the same. Lots of ads. Weekly and daily. Upholding the Constitution as written, Gun control and Nuclear existence are the three issues to concentrate on and judge our politicians by. Only those issues. All other issues are subordinate to these, including political party affiliation. Whether you're Republican or Democrat won't mean a hell of a lot once you have lost your rights or your life or your health or your home.

cc Governor Phil Batt
Statehouse Mail
Boise, Idaho

TSR–M–103
COMMENT LETTER **PAGE 1 OF 1**

4.23.95

Dear Ms. Sobinski,

1/13.00.01 The DOE should choose the "No Action" alternative for the Tritium Supplies Program. We do not need any more nuclear weapons — please be a part of actions to save the world - not destroy it.

Thank you.

Dylis Sees
836 Kendale Dr.
Nashville, Tn
37207

TSR–M–104
COMMENT LETTER **PAGE 1 OF 1**

April 29, 1995

US DOE
P.O. Box 3417
Alexandria, VA 22302

Dear Sirs:

I am writing to voice my opposition to the siting of a tritium production facility at the Pantex Plant near Amarillo, Texas.

I am against such siting for the following reasons:

1/04.02.01 1. The water requirements for the various methodologies proposed would severly impact the already overproduced Ogallala aquifer.
2. The Ogallala aquifer has shown signs of being contaminated, as have some of the perched aquifers above it.
2/11.00.12 3. Tritium production would create additional environmental, safety, and health risks for the general population as well as the workers themselves.
3/18.01 4. Tritium production could be conceived as being a move counter to nuclear arms control, a message we do not want to send just as negotiators are trying to extend the Nuclear Non-Proliferation Treaty.
4/19.01 5. A multi-billion dollar expense for a tritium facility and its long term operation is a cost the U.S. can ill afford.
5/08.05 6. In the event of an "incident", the crops and livestock from this, the breadbasket of the nation, would be perceived to be contaminated (whether so or not), and hence become unmerchantible, thus destroying a multi-billion dollar annual agriculture industry.

What needs to be done is to eliminate the vast majority of our nuclear arsenal, not add to it.

Yours truly,

Addis Charless, Jr.

Addis Charless, Jr.

TSR–M–105
COMMENT LETTER **PAGE 1 OF 1**

May 3 1995

Dr. Dept of Energy:

I have been informed of the plan to build a new tritium production plant.

1/11.00.12 The Savannah River Tritium Production plant has released enormous amounts of radiation into the air + water.

2/20.01 For the sake of our environment + childrens environment find an alternative to opening a tritium prod. plant to produce Nuclear energy or weapons.

In GOD WE TRUST

M. Gould
Milwaukee WI

TSR–M–106
COMMENT LETTER **PAGE 1 OF 1**

May 1, 1995

US Department of Energy
FAX 703-831-9222
PO Box 3417
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1/13.09.01 I wish to express my strong preference for Tritium Production to be reestablished at the Savannah River Site (SRS) using Reactor Technology.

The reasons for my statement are based on the facts that, one, SRS has full capability to process tritium with existing plant and equipment which no other DOE facility possesses thus eliminating duplicate construction and major transportation considerations possibly as well. And, two, the reason I recommend using reactor technology is based on the fact that the United States already has proven designs, quality construction, and safe operations. Yes, there will be some waste byproduct but again SRS has existing plant and equipment to process that material.

Thank You for your attention.

G. J. Moosta

George Moosta
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