CHAPTER 1
INTRODUCTION AND PURPOSE AND NEED FOR AGENCY ACTION

1.0 INTRODUCTION AND PURPOSE AND NEED FOR AGENCY ACTION

Chapter 1 of this environmental impact statement (EIS) gives an overview of the activities at the Western New York Nuclear Service Center and a brief history of events leading to the development of the document. It includes the purpose and need for agency action, the scope of the EIS and decisions to be made, the relationship of this EIS to other National Environmental Policy Act documentation, and discussion of both the scoping process and public comment period for the Draft EIS used to obtain public input on the issues addressed in this EIS. Chapter 1 concludes with a discussion of major changes made between the Draft and Final EISs and a final section describing the organization of this document.

1.1 Overview

The Western New York Nuclear Service Center (WNYNSC) is a 1,351-hectare (3,338-acre) site located 48 kilometers (30 miles) south of Buffalo, New York owned by the New York State Energy Research and Development Authority (NYSERDA). In 1982, under terms of a Cooperative Agreement between the U.S. Department of Energy (DOE) and NYSERDA, DOE assumed control, but not ownership, of the 68-hectare (167-acre) portion of the site known as the Project Premises to conduct the West Valley Demonstration Project (WVDP), as required by the 1980 WVDP Act (Public Law 96-368; October 1, 1980) (DOE and NYSERDA 1981). In 1990, DOE and NYSERDA entered into a supplemental agreement to prepare a joint environmental impact statement (EIS) to address both WVDP completion and closure of WNYNSC. The *Draft Environmental Impact Statement for Completion of the West Valley Demonstration Project and Closure or Long-Term Management of Facilities at the Western New York Nuclear Service Center (Cleanup and Closure Draft EIS)* (DOE/EIS-0226-D) (DOE 1996a) was issued for public comment in 1996, but a preferred alternative was not identified, and a final EIS was not prepared.

On March 13 and 19, 2003, DOE and NYSERDA issued Notices in the *Federal Register* and the *New York State Environmental Notice Bulletin*, respectively, of intent to prepare an *Environmental Impact Statement for Decommissioning and/or Long-Term Stewardship at the West Valley Demonstration Project and Western New York Nuclear Service Center (Decommissioning and/or Long-Term Stewardship EIS)*. This EIS revises the 1996 *Cleanup and Closure Draft EIS* and analyzes sitewide alternatives for management or decommissioning of facilities and property at WNYNSC. DOE and NYSERDA are joint lead agencies for the preparation of this EIS, and the U.S. Nuclear Regulatory Commission (NRC), the U.S. Environmental Protection Agency (EPA), and the New York State Department of Environmental Conservation (NYSDEC) are cooperating agencies. The New York State Department of Health (NYSDOH) and NYSDEC are involved agencies as provided for by the State Environmental Quality Review Act (SEQR). The *Revised Draft Decommissioning and/or Long-Term Stewardship EIS* was issued for public comment on December 5, 2008 (73 *Federal Register* 74160). The public comment period was scheduled for 6 months, until June 8, 2009, but was extended for another 90 days, until September 8, 2009. This *Decommissioning and/or Long-Term Stewardship Final EIS* reflects revisions based on agency consideration of public comments.

Established in 1961 as the site of a nuclear center, WNYNSC comprised commercial spent nuclear fuel reprocessing and waste disposal facilities. Nuclear Fuel Services, a private company, built and operated the fuel reprocessing plant and the burial grounds, processing 640 metric tons (705 tons) of spent nuclear fuel at WNYNSC from 1966 to 1972 under an Atomic Energy Commission license. These spent nuclear fuel reprocessing operations resulted in the generation of 2,498,000 liters (660,000 gallons) of high-level radioactive waste which were stored in two underground storage tanks. In 1976, Nuclear Fuel Services withdrew from the reprocessing business and returned control of the facilities to the site owner, NYSERDA.

However, Nuclear Fuel Services remained on site until 1981 to continue plant cleanup activities. The reprocessing operations and subsequent plant cleanup generated approximately 5,380 cubic meters (190,000 cubic feet) of radioactive waste that were buried in a 2.83-hectare (7-acre) burial area termed the "NRC-Licensed Disposal Area" (NDA). An additional 5,663 cubic meters (200,000 cubic feet) of radioactive waste generated by WVDP decontamination and decommissioning activities were disposed of in the NDA between 1982 and 1986. Radioactive waste was accepted at a second burial area adjacent to the NDA, the 6.1-hectare (15-acre) State-Licensed Disposal Area (SDA), from 1963 until 1975. The SDA received waste from offsite locations, as well as waste generated at WNYNSC by nuclear fuel reprocessing operations. The total volume of radioactive waste disposed of in the SDA is estimated to be approximately 68,000 cubic meters (2.4 million cubic feet).

Terminology for the Western New York Nuclear Service Center

Western New York Nuclear Service Center or WNYNSC – The 1,351-hectare (3,338-acre) site located 48 kilometers (30 miles) south of Buffalo, in West Valley, New York. WNYNSC is owned by the New York State Energy Research and Development Authority. WNYNSC was established in 1961 as the site of a nuclear center, with commercial spent nuclear fuel reprocessing and waste disposal facilities. Today, activities at WNYNSC are focused on completion of the West Valley Demonstration Project and remediation of legacy contamination. WNYNSC is divided into the Project Premises and the Retained Premises. In this EIS, *site* refers to the entire WNYNSC, such as in *wastes will be transported off site for disposal*.

Project Premises – An area of approximately 68 hectares (167 acres) within WNYNSC made available to DOE for carrying out the West Valley Demonstration Project. The Project Premises is under DOE control and includes the facilities (e.g., the Main Plant Process Building) made available to DOE to be used to solidify the high-level radioactive waste remaining on site when Nuclear Fuel Services left WNYNSC, and the 3.3-hectare (8-acre) NDA.

Retained Premises – The remainder of WNYNSC, not including the Project Premises, under NYSERDA control. The Retained Premises includes the 6.1-hectare (15-acre) SDA adjacent to the NDA.

West Valley Demonstration Project or WVDP – All activities undertaken by DOE in carrying out the requirements of the West Valley Demonstration Project Act. The West Valley Demonstration Project Act of 1980 authorized DOE to carry out a high-level liquid nuclear waste solidification demonstration project. The Act further directed DOE to develop containers suitable for the permanent disposal of the solidified high-level radioactive waste, to transport the solidified high-level radioactive waste offsite for permanent disposal at a Federal repository as soon as feasible after solidification and in accordance with applicable provisions of law; to decontaminate and decommission the tanks and other facilities, materials and hardware at WNYNSC used in conjunction with waste solidification; and to dispose of low-level radioactive waste and transuranic waste produced in conjunction with these activities in accordance with applicable licensing requirements. DOE solidified 2,498,000 liters (660,000 gallons) of liquid high-level radioactive waste under the WVDP Act, resulting in 275 canisters of solidified high-level radioactive waste currently in storage at WNYNSC.

In 1976, when Nuclear Fuel Services exercised its contractual right to leave the site and transfer ownership and responsibility for the waste and facility to the State of New York, the state-initiated discussions with the U.S. Government concerning management of the waste and facilities.

In 1980, Congress passed the WVDP Act, which directed DOE to take the lead role in solidifying the liquid high-level radioactive waste remaining in underground tanks and decontaminating and decommissioning the facilities at WNYNSC used in solidifying the waste. In particular, the WVDP Act called for DOE to complete the following actions:

1. Solidify, in a form suitable for transportation and disposal, the high-level radioactive waste at WNYNSC.

2. Develop containers suitable for the permanent disposal of the high-level radioactive waste solidified at WNYNSC.

3. Transport as soon as feasible, in accordance with applicable provisions of law, the waste solidified at WNYNSC to an appropriate Federal repository for permanent disposal.

4. Dispose of low-level radioactive waste and transuranic waste produced under the project by the solidification of the high-level radioactive waste in accordance with applicable licensing requirements.

5. Decontaminate and decommission the tanks, facilities, material, and hardware used in the solidification of the high-level radioactive waste and in connection with WVDP in accordance with such requirements as NRC may prescribe.

To take these actions, NYSERDA granted DOE exclusive use and possession of the Project Premises and project facilities solely for the purpose of carrying out the project. The Project Premises consists of the developed areas on WNYNSC, with the exception of the SDA.

DOE has made substantial progress toward completing its WVDP Act requirements. By August 2002, DOE had completed the first two requirements by solidifying the high-level radioactive waste and placing it in 275 canisters suitable for permanent disposal. These 275 canisters are currently stored in a heavily shielded cell in the former reprocessing plant. Completion of WVDP involves completion of requirements 3 through 5. DOE will remain on site until its responsibilities under the WVDP Act are completed.

While DOE has been discharging its responsibilities under the WVDP Act, NYSERDA has continued to monitor and maintain the SDA and the balance of the retained premises (that portion of WNYNSC not provided to DOE for conduct of WVDP activities). NRC has continued to fulfill its WVDP Act responsibilities through informal review and consultation with DOE and by conducting monitoring activities.

While most site activities have focused on the management of radioactive waste and contamination, there are also hazardous chemicals and hazardous wastes on site that are being managed in accordance with EPA and New York State regulations, including those issued to implement the Resource Conservation and Recovery Act (RCRA) Subtitle C Hazardous Waste Management Program. These regulations are referred to hereafter as either "RCRA regulations" when referring to EPA's regulations (40 *Code of Federal Regulations* [CFR] 260–279) or "Part 373/RCRA regulations" when referring to New York State's regulations (6 NYCRR 370–374 and 376).

Resource Conservation and Recovery Act Background

In 1984, DOE notified EPA of hazardous waste activities at WVDP and identified WVDP as a generator of hazardous waste. This preceded the 1987 DOE interpretive rule clarifying that the nonradioactive chemically hazardous component of mixed low-level radioactive waste (waste containing both radiological and RCRA-regulated hazardous components) would be subject to regulation under RCRA. In June 1990, New York State regulations governing mixed low-level radioactive waste became effective and a RCRA Part A Permit Application for WVDP was filed with NYSDEC for the storage and treatment of hazardous waste and mixed low-level radioactive waste generated on site. Similarly, in 1990, NYSERDA submitted a RCRA Part A Permit Application to NYSDEC to store and treat hazardous and mixed low-level radioactive waste at the SDA on its portion of WNYNSC.

In March 1992, DOE and NYSERDA entered into a joint EPA/NYSDEC RCRA 3008(h)/New York State Environmental Conservation Law, Article 27, Titles 9 and 13 Administrative Order on Consent (Consent Order). The Consent Order required DOE and NYSERDA to conduct RCRA facility investigations (RFIs) of solid waste management units (SWMUs) to determine if there had been, or was a potential for, release of RCRA-regulated constituents. The final RFI reports were submitted in 1997, completing the investigation activities required by the Consent Order. Both NYSDEC and EPA approved the RFI reports for SWMUs located within the Project Premises; no corrective actions were required other than continued groundwater monitoring as proposed in the RFI reports. NYSERDA proposed and implemented additional infiltration control measures for the SDA, which were performed as an interim measure under the Consent Order. In the

SDA RFI report, NYSERDA also proposed continued operation and maintenance of installed interim corrective measures. In response to a January 2004 NYSDEC request, the *West Valley Demonstration Project Solid Waste Management Unit Assessment and Current Conditions Report* was submitted to NYSDEC. This report summarized the historic activities at individual SWMUs and provided current environmental monitoring data and information about site activities performed since the completion of the RFI reports. As a result of its review, NYSDEC determined that five Corrective Measures Studies for WVDP SWMUs and a Corrective Measures Study for the SDA would be required pursuant to the Consent Order.

In August 1996, to comply with the Federal Facility Compliance Act, DOE entered into a second Consent Order with NYSDEC to prepare a site treatment plan for treating mixed low-level radioactive waste inventories to meet land disposal restrictions and to update the plan annually to account for development of treatment technologies, capacities, and changes in mixed low-level radioactive waste inventories. The initial plan was submitted in 1997, and updates have been submitted each year.

The RCRA Part A Permit Application for WVDP is revised as changes to the site's interim status waste management operations occur. An update to the WVDP RCRA Part A Permit Application was submitted to NYSDEC in March 2001. In November 2001, NYSDEC responded that the RCRA Part A Permit Application modifications met the requirements for changes to interim status treatment and storage operations at WVDP. Modifications to the WVDP RCRA Part A Permit Application were submitted to NYSDEC in February and December 2008. NYSDEC has completed its review of specific portions of these submittals. Subsequent to additional communication with DOE, including submittal of additional information, NYSDEC granted approval in February 2009 and conditional approval in October 2009 of unit-specific additions to the WVDP Part A Permit Application.

In July 2003, NYSDEC made an official request for the submittal of a Part 373/RCRA Permit Application for WVDP; the application was transmitted to NYSDEC in December 2004. NYSDEC sent a letter to DOE in February 2005 stating that the application was deemed incomplete and that an EIS, as well as other items, was required. At that time, NYSDEC intended to commence its technical review of the permit application. However, NYSDEC's review of the 2005 internal preliminary Draft EIS and 2008 Revised Draft EIS, its participation on the Core Team, and the on-going work at the site has taken precedence. Submission of a revised Part 373/RCRA permit application is planned for 2010 and will be contingent on the outcome of the NEPA process.

Developing a method for completing WVDP and managing the decommissioning and/or long-term stewardship of WNYNSC require consideration of both radioactive and nonradioactive hazardous materials and constituents and the regulations that govern them. Both DOE and NYSERDA are integrating these considerations into their decisionmaking processes as applicable and are coordinating their efforts with the relevant regulatory authorities—NRC, EPA, and NYSDEC.

1.2 History of the Development of This Environmental Impact Statement

In a 1987 Stipulation of Compromise settling a lawsuit filed by local citizens, DOE agreed that by the end of calendar year 1988, it would begin a closure EIS to evaluate disposal of Class A and Class B/C waste generated by DOE activities at WVDP and to evaluate erosion impacts. On December 30, 1988, DOE published a Notice of Intent (NOI) in the *Federal Register* to prepare an EIS for WVDP completion. A similar notice was published by NYSERDA in the *New York State Environmental Notice Bulletin* on January 11, 1989. After publication of these notices, public comments on the scope and content of the EIS were received in letters and during public scoping meetings. Additional characterization information to support preparation of the Draft EIS was collected and a Draft EIS was prepared. The *Cleanup and Closure Draft EIS* (DOE 1996a) was issued in March 1996 without identifying a preferred alternative.

A total of 113 comment letters were received on the 1996 *Cleanup and Closure Draft EIS*. Some commentors expressed a preference for a particular alternative. Other commentors expressed the opinion that selection of an alternative that complied with regulations was not possible because NRC had not prescribed requirements for decontamination and decommissioning as required by the WVDP Act. Other commentors attempted to apply NRC requirements (10 CFR 61) to draw conclusions about the acceptability of various alternatives. Still other commentors called for more characterization of the site (specifically, structural geology and seismic risk) and waste. Commentors also called for erosion analysis methods that would address gully growth. Some commentors questioned aspects of specific closure designs, including the reasonableness of assumptions and the appropriateness of specific design features.

Both DOE and NYSERDA acknowledged the need for additional characterization information and analytical methods to support a final EIS and proceeded to collect additional information on structural geology, local fractures, and seismicity. Updated methods for analyzing erosion were developed and refined. The assumptions and design features for specific alternatives were reviewed and revised. Discussions took place between DOE and NYSERDA on how to select a preferred alternative and what a preferred alternative might involve.

During this time, DOE was also preparing the *Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste (WM PEIS)* (DOE 1997a). In 1999 and 2000, DOE issued Records of Decision (RODs) based on the *WM PEIS* that affected WVDP. The ROD for high-level radioactive waste issued in August 1999 called for storage of high-level radioactive waste at the site of generation until a disposal site was available. The February 2000 ROD for low-level radioactive waste and mixed low-level waste established both the Hanford Site (Hanford) and the Nevada Test Site (NTS) as regional DOE disposal sites for low-level radioactive waste and mixed low-level radioactive waste, although the ROD did not preclude the use of commercial disposal facilities, as appropriate.

On March 26, 2001, DOE and NYSERDA issued an NOI in the *Federal Register* announcing their plan to (1) revise the strategy for completing the 1996 *Cleanup and Closure Draft EIS* by preparing a revised draft EIS focusing on DOE's actions to decontaminate WVDP facilities and manage WVDP wastes controlled by DOE under the WVDP Act that would focus solely on DOE actions and would not include NYSERDA as a joint lead agency; and (2) prepare a separate EIS on decommissioning and/or long-term stewardship of WVDP and WNYNSC on which NYSERDA would participate as a joint lead agency. Decisions made after completion of the *West Valley Demonstration Project Waste Management Environmental Impact Statement (Waste Management EIS)* would permit DOE to perform additional facility decontamination and ship stored legacy waste and newly generated waste off site for disposal, as WVDP waste could now be disposed at DOE disposal facilities such as NTS. Completing the *Waste Management EIS* also ensured that DOE could continue to make progress toward completing WVDP Act requirements for facility decontamination and waste disposal while the National Environmental Policy Act (NEPA) process for decommissioning and/or long-term stewardship continued. On November 6, 2001, DOE independently issued an Advance NOI to prepare the *EIS for Decommissioning and/or Long-Term Stewardship at WVDP and WNYNSC*.

After issuance of the March 26 and November 6, 2001 *Federal Register* notices and consideration of public scoping comments, DOE decided to focus the *Waste Management EIS* exclusively on waste management actions. DOE also determined that the *Waste Management EIS* would be a new EIS, and that the *Decommissioning and/or Long-Term Stewardship EIS* would instead be considered the revised draft of the 1996 *Cleanup and Closure Draft EIS*. DOE issued the *Waste Management EIS* (DOE 2003e) in draft form for public comment in May 2003 and in final form in January 2004. A ROD was issued on June 16, 2005.

While DOE and NYSERDA were developing additional information and analyses to support preparation of a Revised Draft *Cleanup and Closure EIS*, NRC initiated work that culminated in the 2002 issuance of an NRC policy statement announcing the WVDP decommissioning criteria. On February 1, 2002, NRC published

"Decommissioning Criteria for the WVDP at the West Valley Site; Final Policy Statement" (67 *Federal Register* [FR] 5003). In this notice, NRC announced its decision to apply its License Termination Rule (10 CFR 20, Subpart E) as the decommissioning goal for the entire NRC-licensed site. In addition, the NRC Final Policy Statement also provided specific criteria for classification of waste "incidental" to reprocessing[1] that might be present after decontamination activities.

The License Termination Rule does not apply a single public-dose criterion for meeting license termination requirements. Rather, it provides for a range of criteria. For unrestricted release, the License Termination Rule specifies a dose criterion of 25 millirem per year total effective dose equivalent (TEDE) for the compliance receptor, plus as low as is reasonably achievable (ALARA) considerations. For restricted release, the License Termination Rule specifies an individual dose criterion of 25 millirem per year TEDE plus ALARA considerations using legally enforceable institutional controls established after a public participation process. Even if institutional controls fail, individual doses should not exceed 100 millirem per year TEDE. If it is demonstrated that the 100-millirem-per-year TEDE criterion is technically not achievable or prohibitively expensive in the event of failure of institutional controls, the individual dose criterion in the event of such failure may be as high as 500 millirem per year TEDE. However, in circumstances where restricted release is required, if the 100-millirem-per-year TEDE criterion is exceeded, and/or the use of alternate criteria has been determined, the area would be rechecked by a responsible government entity no less frequently than every 5 years. Finally, the License Termination Rule permits alternative individual-dose criteria of up to 100 millirem per year TEDE plus ALARA considerations for restricted release, with institutional controls established after a public participation process.

In addition to specifying the License Termination Rule as described in the preceding paragraph, the NRC Final Policy Statement also provides certain flexibility to consider other alternatives to the License Termination Rule, if it is demonstrated that the rule cannot be met. The Final Policy Statement indicates that the applicable goal for the entire NRC-licensed site is compliance with the License Termination Rule, but recognizes that health and safety and cost-benefit considerations may justify the use of an alternative that does not fully comply with License Termination Rule criteria. However, to support an exemption to the rule criteria, it must be rigorously demonstrated that protection of the public health and safety for future generations could be reasonably ensured through more-robust engineered barriers and/or increased long-term monitoring and maintenance. The Final Policy Statement indicates that NRC is prepared to provide flexibility to ensure cleanup of the NRC-licensed site to the maximum extent technically and economically feasible. Any exemptions or alternate criteria authorized for DOE to meet the provisions of the WVDP Act will also apply to NYSERDA at the time of site license termination, if license termination is possible.

As discussed in Section 1.1 of this chapter, on March 13 and 19, 2003, DOE and NYSERDA published Notices in the *Federal Register* and the *New York State Environmental Notice Bulletin*, respectively, announcing that they would jointly prepare this *Decommissioning and/or Long-Term Stewardship EIS* to revise the 1996 *Cleanup and Closure Draft EIS*. This *Decommissioning and/or Long-Term Stewardship EIS* builds on a clearer understanding of the major regulatory requirements, including NRC WVDP decommissioning criteria and Part 373/RCRA regulations as they apply to units on site. In this EIS, updated long-term performance assessment models for groundwater and erosion releases are used and closure designs that have waste isolation barriers are analyzed. Short- and long-term impacts, local impacts, and impacts associated with transportation are analyzed in this EIS. The analysis is intended to provide the decisionmakers and public with an updated understanding of the environmental impacts of each alternative.

Following the NOI and scoping meetings of early 2003, DOE, with input from NYSERDA and the cooperating agencies, refined the definitions of five alternatives and prepared an internal preliminary Draft EIS in

[1] *Chapter 5, Section 5.2 of this EIS includes a discussion of the NRC Final Policy Statement (67 FR 5003). Waste "incidental" to reprocessing is defined in Chapter 8 (Glossary) of this EIS.*

September 2005, in which the environmental impacts of the five alternatives were analyzed. This internal preliminary Draft EIS did not present a preferred alternative and did not address the issue of which agency is responsible for specific portions of the site. The internal preliminary Draft EIS was reviewed by the co-lead and cooperating agencies, and their comments revealed different expectations about the purpose and content of the EIS. To resolve the differences about alternatives to be analyzed and the type of analyses, and to help identify a preferred alternative, DOE established a core team comprising the co-lead and cooperating agencies to discuss and, where practical, resolve the issues raised by the review of the September 2005 internal preliminary Draft EIS. This historical information about the evolution of this *Decommissioning and/or Long-Term Stewardship EIS* is depicted chronologically in **Figure 1–1**. This Final EIS reflects the results of discussions with the core team regarding alternatives to be analyzed, the nature of the analyses, and the nature of the Preferred Alternative that occurred during both the preparation of the Revised Draft EIS and this Final EIS.

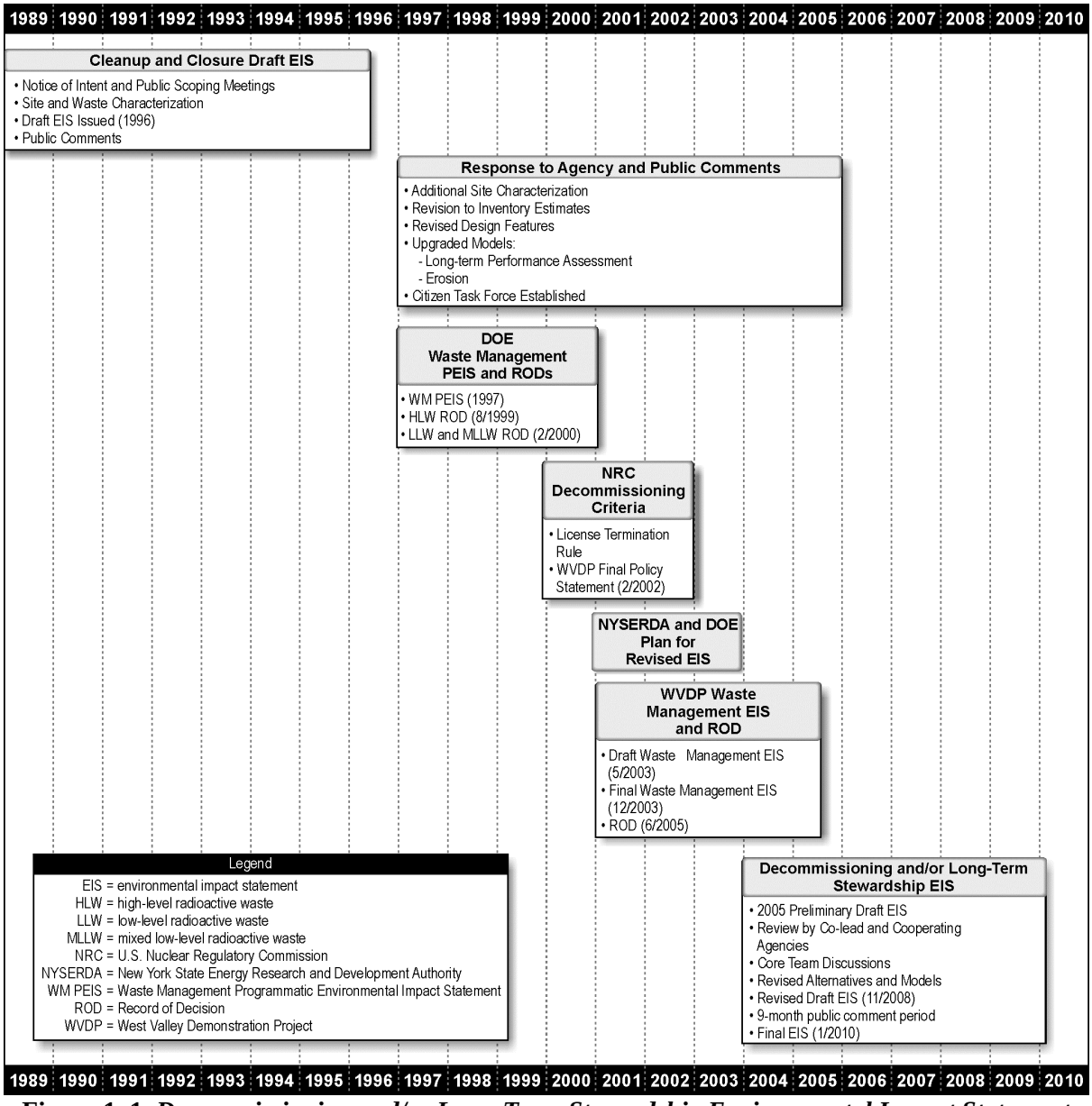

Figure 1–1 ***Decommissioning and/or Long-Term Stewardship Environmental Impact Statement*** **History Timeline**

1.3 Purpose and Need for Agency Action

The WVDP Act requires DOE to decontaminate and decommission the waste storage tanks and facilities used in the solidification of high-level radioactive waste, and any material and hardware used in connection with WVDP, in accordance with such requirements as NRC may prescribe. As discussed in Section 1.2, NRC has prescribed its License Termination Rule as the decommissioning criteria for WVDP. DOE needs to ensure that the facilities, materials, and hardware for which it is responsible are managed or decommissioned in accordance with applicable Federal and state requirements, including Part 373/RCRA regulations. To this end, DOE needs to determine which, if any, materials or structures for which it is responsible would remain on site, and what, if any, institutional controls, engineered barriers, or stewardship provisions would be needed. This EIS evaluates alternatives by which DOE would complete its responsibilities under the WVDP Act in accordance with Council on Environmental Quality regulations and DOE implementing procedures (40 CFR 1500–1508 and 10 CFR 1021, respectively).

Likewise, NYSERDA needs to ensure that the manner in which facilities and property for which it is responsible, including the SDA, will be managed or decommissioned in accordance with applicable Federal and state requirements. To this end, NYSERDA also needs to determine which, if any, materials or structures for which it is responsible would remain on site and what, if any, institutional controls, engineered barriers, or stewardship provisions would be needed. In addition to other purposes for this document, this EIS has been prepared to meet NYSERDA's SEQR responsibilities for its decisionmaking process for management of WNYNSC. As the lead New York State agency for preparing SEQR documents for WNYNSC, NYSERDA will submit public notices and issue its Findings Statement under SEQR in parallel with DOE's publication of notices and its ROD under NEPA.

Cooperating and Involved Agencies

Both NEPA and SEQR contain provisions that encourage participation by other Federal and state entities to reduce duplication between NEPA and state and local requirements. Cooperating agencies under NEPA are agencies other than the lead agency that have jurisdiction by law or special expertise with respect to any environmental impact involved in a major Federal action significantly affecting the quality of the human environment. Under SEQR, agencies may be either an involved agency or an interested agency. An involved agency is one that has jurisdiction by law to fund, approve, or directly undertake an action and that will ultimately make a discretionary decision in that regard. An interested agency lacks the jurisdiction to fund, approve, or directly undertake an action but may participate in review of a draft EIS because of its specific expertise or concern about the proposed action. An interested agency has the same ability to participate in the review process as a member of the public. No interested agencies have participated in the review of this EIS. Cooperating agencies are typically invited to participate on an EIS by the lead agency; involved agencies are so by definition.

DOE formally invited NRC, EPA, and NYSDEC to participate on this *Decommissioning and/or Long-Term Stewardship EIS* as cooperating agencies under NEPA. In addition, NYSDEC and NYSDOH are involved agencies under SEQR. The three cooperating agencies were invited by DOE because of both their jurisdictional roles and the special expertise they would provide to the EIS process. These agencies may ultimately choose to adopt or rely on some or all of the analyses in this EIS in fulfillment of their own environmental analysis requirements under NEPA or SEQR regulations, as applicable.

***U.S. Nuclear Regulatory Commission*—**NRC has regulatory responsibility under the Atomic Energy Act for WNYNSC, with the exception of the SDA, and this responsibility is exercised through the NRC license issued to NYSERDA pursuant to "Domestic Licensing of Production and Utilization Facilities" (10 CFR 50). The

technical specifications and certain other portions of the NRC license were put into abeyance pending completion of WVDP.

The WVDP Act specifies certain responsibilities for NRC, including (1) prescribing requirements for decontamination and decommissioning and (2) providing review and consultation to DOE and monitoring of WVDP for the purpose of ensuring public health and safety. Because of these mandated responsibilities, NRC was invited to be a cooperating agency under NEPA on this EIS. During NRC's independent environmental review to fulfill its own NEPA responsibilities, NRC may choose to adopt all or part of this EIS to assist in its determination that the Preferred Alternative meets NRC's decommissioning criteria. As a cooperating agency, NRC reviewed agency review draft versions of the 2008 Revised Draft EIS and other documents developed by DOE and NYSERDA to provide early input on the analysis of environmental impacts associated with the proposed alternatives. NRC also reviewed and provided comments on the 2008 Revised Draft EIS during the public comment period.

In addition, DOE has provided a decommissioning plan to NRC in accordance with the September 1981 Memorandum of Understanding between DOE and NRC establishing procedures for review and consultation by NRC of DOE activities conducted under the WVDP Act. The initial *Phase 1 Decommissioning Plan for the West Valley Demonstration Project* (Decommissioning Plan) was submitted to NRC in December 2008 and is based on the Preferred Alternative identified in the Revised Draft EIS. It was updated and resubmitted in December 2009 to reflect the Preferred Alternative in this Final EIS. This Decommissioning Plan will provide information to allow NRC to determine whether the Preferred Alternative, if selected, meets the decommissioning criteria that NRC has identified for WVDP. If DOE selects an alternative other than the Preferred Alternative identified in this Final EIS, the Decommissioning Plan will be revised to reflect the selected alternative. If appropriate, DOE will also provide the waste determination on its classification of incidental wastes to NRC.

NRC retains regulatory responsibility for non-DOE activities in areas outside the Project Premises exclusive of the SDA to the extent that contamination exists both on and off site resulting from activities performed when WNYNSC was operating under its NRC license.

Following completion of activities required by the WVDP Act, the Project Premises will be returned to NYSERDA and NRC will have regulatory responsibility for WNYNSC, exclusive of the SDA.

New York State Department of Environmental Conservation—With respect to DOE Proposed Actions, NYSDEC participates as a cooperating agency on this EIS. As a cooperating agency, NYSDEC reviewed agency review draft versions of the 2008 Revised Draft EIS and other documents developed by DOE and NYSERDA to provide early input on the analysis of environmental impacts associated with the proposed alternatives. NYSDEC also reviewed and provided comments on the 2008 Revised Draft EIS during the public comment period. NYSDEC is also an involved agency under SEQR with respect to permitting actions at the SDA and with respect to any approvals NYSDEC would issue for WVDP or WNYNSC under Part 373/RCRA regulations.

NYSDEC regulates the SDA through issuance of permits under "Rules and Regulations for Prevention and Control of Environmental Pollution by Radioactive Materials" (6 NYCRR 380). NYSDEC regulates hazardous and mixed low-level radioactive waste at WNYNSC (6 NYCRR 370 *et seq*.) and is responsible for permitting activities under interim status for RCRA-regulated units.

In addition, both EPA and NYSDEC are responsible for ensuring that DOE and NYSERDA comply with the Consent Order discussed in Section 1.1 of this chapter. This Consent Order requires investigation of SWMUs, performance of interim corrective measures, and completion of Corrective Measures Studies, if necessary.

New York State Department of Health—NYSDOH is an involved agency as defined by SEQR because it has jurisdiction over the commercial and industrial use of radioactive materials in New York State, including the possession of radioactive materials at the SDA at WNYNSC. It now maintains authority over the radioactive materials license (originally issued by the New York State Department of Labor) that authorizes NYSERDA to possess and manage emplaced radioactive waste at the SDA.

U.S. Environmental Protection Agency—As a cooperating agency under NEPA, EPA reviewed agency review draft versions of the 2008 Revised Draft EIS and other documents developed by DOE and NYSERDA to provide input on the analysis of environmental impacts associated with the proposed alternatives. EPA also reviewed and provided comments on the 2008 Revised Draft EIS during the public comment period. EPA is responsible for assessing compliance with National Emission Standards for Hazardous Air Pollutants (NESHAPs) requirements (40 CFR 61, Subpart H); assessing the ability of the alternatives to meet the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) risk range, if required; and addressing sole-source aquifer concerns.

In addition, both EPA and NYSDEC are responsible for ensuring that DOE and NYSERDA comply with the Consent Order discussed in Section 1.1 of this chapter. This Consent Order requires investigation of SWMUs, performance of interim corrective measures, and completion of Corrective Measures Studies, if necessary.

Regulatory Compliance Processes

This EIS meets the Federal procedural requirements set forth under NEPA of 1969 (as promulgated in 40 CFR 1500 *et seq*.), as well as New York State SEQR requirements (6 NYCRR 617). Both Federal and state regulations require the identification and evaluation of significant environmental impacts resulting from a proposed action and a discussion of mitigative actions. SEQR requires the mitigation of significant environmental impacts to the extent practicable. The requirements of both NEPA and SEQR call for comprehensive assessment of reasonable alternatives and the presentation of comparative information to facilitate agency decisionmaking. Both NEPA and SEQR have public involvement requirements to make the information available to public officials and citizens before decisions are made and actions taken.

Both DOE and NYSERDA recognize that there are regulatory requirements and processes associated with the implementation of each alternative. These regulatory

The NYSERDA View Indicates….

The Connection between the Final EIS Analyses and the Applicable Regulatory Framework Must be Strengthened. NYSERDA discusses its position that the Nuclear Regulatory Commission's low-level radioactive waste disposal regulations (10 CFR Part 61) were used to guide the long-term performance assessment rather than NRC's License Termination Rule and implementing guidance, NRC Consolidated Decommissioning Guidance (NUREG-1757). NYSERDA further states that 10 CFR Part 61 guidance should generally not be used as part of the analytical framework for the EIS.

DOE's Response….

The long-term performance assessment in this Decommissioning and/or Long-Term Stewardship EIS *meets DOE NEPA guidance and precedent. The analysis also uses the requirements of NRC's License Termination Rule (10 CFR Part 20, Subpart E) and Policy Statement for the WVDP (which prescribes the License Termination Rule as the decommissioning criteria for WVDP) and the implementing guidance in NUREG-1757 for the long-term performance analysis for this EIS. A preliminary discussion of compliance with NRC's License Termination Rule for WVDP may be found in Appendix L of this EIS. This discussion includes supporting analyses, but is considered only preliminary because actual compliance scenarios would be determined through the formal NRC process for preparing and reviewing a decommissioning plan specifically focused on license termination as described in NUREG-1757.*

Appendix D, Section D.3 of this EIS provides an overview of the approach used for long-term performance assessment for this EIS. This section provides a detailed discussion of the process DOE used to develop the approach for estimating long-term impacts, including scenario development and model selection. This discussion describes a carefully thought out and executed, scientific approach to evaluating and applying relevant, available scientific and regulatory guidance and precedent to an analysis lacking specific regulatory guidance or requirements. A number of possible sources were considered for development of the scenarios and models. As noted in Section D.3.1.3, information supporting the analyses in the *Environmental Impact Statement on 10 CFR Part 61, Licensing Requirements for Land Disposal of Radioactive Waste*, "proved useful in identifying receptors and receptor habitats," and as the discussion in Appendix D demonstrates, was by no means the exclusive source.

requirements may consist of RCRA permitting and corrective actions under New York State and/or EPA requirements, decommissioning according to NRC requirements, assessments relative to the CERCLA risk range, and assessment of compliance with NESHAPs regulations. This EIS is not intended to replace any of the regulatory compliance actions that may be undertaken as applicable by DOE and NYSERDA in decommissioning and closing WVDP or WNYNSC.

DOE and NYSERDA are required to comply with applicable RCRA requirements for management of hazardous wastes and the remedial actions/cleanup of their respective portions of WNYNSC. NYSDEC is the primary responsible agency for overseeing the management of hazardous wastes at the site pursuant to NYSDEC Part 373/RCRA requirements, and would issue a permit for the proper management of hazardous waste. EPA and NYSDEC are jointly responsible for the oversight of the site remedial actions/cleanup performed under the 1992 RCRA 3008(h) Consent Order. The aforementioned NYSDEC Part 373/RCRA permit, if and when issued, may also include applicable RCRA corrective action provisions which require remedial actions/cleanup necessary for specific portions of the site.

New York State Part 373/RCRA Permit Applications require a supporting EIS that meets the requirements of SEQR. This *Decommissioning and/or Long-Term Stewardship EIS* analyzes portions of WNYNSC in addition to those portions within the scope of Part 373/ RCRA Permit Application (e.g., the SDA). As such, NYSDEC can use the appropriate sections of this EIS to understand the environmental impacts of actions being considered in the Part 373/RCRA Permit Application.

In its Final Policy Statement (67 FR 5003), NRC prescribed its License Termination Rule as the decommissioning goal for WVDP and all NRC-licensed portions of WNYNSC. NRC will assess compliance during its review of the WVDP Decommissioning Plan.

The NRC Decommissioning Plan review and the RCRA compliance process focus on actions selected by DOE and NYSERDA. If the outcome of the Part 373/RCRA Permit Application review process or decommissioning plan review process results in the need for actions that are substantially different from those analyzed in this EIS, the agencies would prepare a supplement analysis to determine if this *Decommissioning and/or Long-Term Stewardship EIS* needs to be supplemented and the ROD or Findings amended.

EPA has regulatory authority for radioactive air emissions at WNYNSC under NESHAPs regulations.

Preliminary information with respect to compliance with the decommissioning requirements is presented in Appendix L of this EIS.

1.4 Scope of This Environmental Impact Statement

This EIS presents the environmental impacts associated with the full range of reasonable alternatives for decommissioning and/or long-term stewardship of WNYNSC, as well as the No Action Alternative as required by NEPA and SEQR. The environmental impacts along the transportation route(s) for wastes that are proposed to be transported to offsite locations, and the long-term impacts (post-decommissioning phase) at or near WNYNSC for facilities or wastes that are proposed to remain in place, depending on the alternative, are also analyzed.

For further definition of the scope of this EIS, see Chapter 2, Tables 2–1 and 2–2. These tables describe the status of facilities at WNYNSC at the start of decommissioning, which is the starting point for the analyses in this EIS and is referred to as the Interim End State. The *Revised Draft Decommissioning and/or Long-Term Stewardship EIS* indicated that the Interim End State was estimated to be reached by 2011. Based on current information, it is now estimated that most, but not all the activities for achieving the Interim End State will be completed by 2011. In particular, the tanks in the Waste Tank Farm in WMA 3 are not expected to be dry

until about 2015. Achievement of the Interim End State is defined by the physical status of each facility or area identified in the referenced tables.

This EIS also addresses topics called for in SEQR implementing regulations (6 NYCRR 617.9), including mitigating measures, adverse environmental impacts that cannot be avoided, any growth-inducing aspects of the proposed action,[2] and the impact of the Proposed Action on solid waste management. These topics were added to this EIS to provide information required by SEQR so this EIS could be used to support NYSERDA decisions about management of non-WVDP portions of WNYNSC.

1.5 Decisions to Be Supported by This Environmental Impact Statement

This EIS will support decisions about actions to complete WVDP and to either close or manage WNYNSC. Major decisions would consist of decommissioning the former spent nuclear fuel reprocessing facility, storage buildings, and the NDA; exhumation, closure in place, or management of the SDA; and remediation and/or management of areas of contaminated soil, sediment, and groundwater.

This EIS may be used by cooperating agencies. In the future, NRC may adopt this EIS if NRC determines that the Preferred Alternative would meet its decommissioning criteria, or NRC could perform its own NEPA evaluation. EPA will review this EIS and other documents to determine if the remediated site would satisfy the requirements of the Consent Order and whether the remediated site would be consistent with the CERCLA risk range and therefore avoid the potential need to list WNYNSC on the National Priorities List. NYSDEC may rely on this EIS for purposes of SEQR to support the Part 373/RCRA Permit Application, RCRA Corrective Measures Study(ies), and decisions regarding the SDA under 6 NYCRR 380, *et seq*., as appropriate.

The NYSERDA View Indicates….

The Existing Long-term Performance Assessment is not Adequate to Support In-Place Closure of the Waste Tank Farm or any Other Facilities. This issue in the View reflects four other issues related to the long-term performance assessment effort presented in the Final EIS as discussed in the View: erosion, contaminant transport by groundwater, performance of engineered barriers, and the presentation of information about the uncertainty of the long-term performance assessment. NYSERDA believes that the Final EIS long-term performance assessment should not be used to support a decision to close the Waste Tank Farm, or any other facilities, in place.

DOE's Response….

DOE acknowledges that there is uncertainty inherent in long-term (i.e., 10,000 to 100,000 years) performance assessment modeling, but is of the opinion that the analyses and disclosure of uncertainties in the EIS provide a sufficient quality of information to adequately support agency decisionmaking. DOE's analyses account for these uncertainties using state-of-the-art models, generally accepted technical approaches, existing credible scientific methodology, and the best available data in such a way that the predictions of peak radiological and hazardous chemical risks are expected to be conservative (i.e., the results are more likely to overstate rather than understate the actual future consequences). For the Final EIS, DOE updated the hydrologic, groundwater dose, and erosion modeling methodology, and refined the models to reflect new site-specific information. Chapter 4, Section 4.1.10 and Appendices E, F, G, and H have been revised to present the updated results and discuss the changes in methodology, and Section 4.3.5 presents a comprehensive list of uncertainties that affect the results of the long-term performance assessment.

DOE's position is that it has spent much time and effort engaging highly qualified and respected experts in hydrology and hydrological transport, landscape evolution (erosion), human health and environmental risk analysis, and other technical fields, and stands behind the analyses performed for this EIS. These analyses are fully capable of supporting a decision to select any of the alternatives evaluated in this EIS.

[2] *SEQR specifies that assessment of environmental impacts should include the growth-inducing aspects of a proposed action. These are generally "secondary" impacts of a proposed action that trigger further development. For example, actions that add substantial new land use, new residents, or new employment could induce additional development of a similar kind or support uses such as stores or other businesses.*

1.6 Relationship of this Environmental Impact Statement to Other National Environmental Policy Act Documents

This section explains the relationship between this *Decommissioning and/or Long-Term Stewardship EIS* and other relevant NEPA documents.

1.6.1 *Draft Environmental Impact Statement for Completion of the West Valley Demonstration Project and Closure or Long-Term Management of Facilities at the Western New York Nuclear Service Center (Cleanup and Closure Draft EIS)* (DOE/EIS-0226-D)

The *Cleanup and Closure Draft EIS* (DOE 1996a) was issued for public comment in March 1996, and 113 comment letters were received by DOE and considered in preparation of this EIS. The sequence of events described in Section 1.2 of this chapter followed, which led to the decision to revise and reissue the 1996 *Cleanup and Closure Draft EIS* using information gained since 1996, the improved analytical methods developed since that time, and the clearer understanding of regulatory requirements. Responses to summarized comments in the letters received on the *Cleanup and Closure Draft EIS* are provided in Appendix A of this EIS.

1.6.2 *Final Environmental Impact Statement, Long-Term Management of Liquid High-Level Radioactive Wastes Stored at the Western New York Nuclear Service Center, West Valley* (DOE/EIS-0081)

In this EIS (DOE 1982), DOE evaluated alternatives for long-term management of liquid high-level radioactive waste stored in underground tanks. DOE issued a ROD announcing its decision to construct and operate facilities at WNYNSC to solidify the liquid high-level radioactive waste into a form suitable for transportation to and disposal in a Federal geologic repository. In a supplement analysis completed in 1993, DOE evaluated the impacts of modifications in the design, process, and operations since the 1982 EIS ROD. A second supplement analysis, completed in 1998, addressed high-level radioactive waste solidification, management, and interim storage; disposal and transport of wastes; site operations; facility decontamination; and spent nuclear fuel storage. Actions evaluated in the 1982 EIS and its supplement analyses consist of decontamination of the Main Plant Process Building head-end cells; construction of a Load-In/Load-Out Facility to support shipment of vitrified high-level radioactive waste; construction of a Remote-Handled Waste Facility; decontamination of the fuel receiving and storage area; and drainage of water from the fuel storage pool.

The short-term onsite management of the vitrified high-level radioactive waste canisters, currently stored in the Main Plant Process Building, and the disposition of the Remote-Handled Waste Facility and Load-In/Load-Out Facility, are evaluated in this *Decommissioning and/or Long-Term Stewardship EIS*.

1.6.3 *Final West Valley Demonstration Project Waste Management Environmental Impact Statement (Waste Management EIS)* (DOE/EIS-0337)

In the *Waste Management EIS* (DOE 2003e) issued in December 2003, DOE considered alternatives for the management of WVDP low-level radioactive waste, mixed (radioactive and hazardous) low-level radioactive waste, transuranic waste, and high-level radioactive waste currently in storage at the site or that will be generated at the site over 10 years from ongoing operations and decontamination activities. In the ROD issued June 16, 2005 (70 FR 35073), DOE announced its decision to ship low-level radioactive waste and mixed low-level radioactive waste off site for disposal at commercial sites, one or both of two DOE sites (NTS near

Mercury, Nevada, or Hanford near Richland, Washington), or a combination of commercial and DOE sites.[3] Also, consistent with the *Final WM PEIS* ROD (64 FR 46661; August 26, 1999) discussed in Section 1.6.6 of this chapter, DOE affirmed that it will temporarily store canisters of vitrified high-level radioactive waste at WNYNSC until transfer to a geologic repository. As discussed in Section 1.6.4 of this chapter, the Administration intends to terminate the Yucca Mountain program. DOE will continue to store canisters of vitrified high-level radioactive waste at WNYNSC in accordance with the Final *WM PEIS* ROD until disposition decisions for high-level radioactive waste are made and implemented. DOE deferred a decision on the disposal of WVDP transuranic waste pending a determination by DOE that the waste meets all statutory and regulatory requirements for disposal (including a determination that the waste is defense waste) at the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico.

1.6.4 *Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada (Yucca Mountain EIS)* (DOE/EIS-0250-F)

The *Yucca Mountain EIS* (DOE 2002b) was issued in 2002. In this EIS, DOE analyzed proposed actions to construct, operate, monitor, and eventually close a geologic repository for the disposal of spent nuclear fuel and high-level radioactive waste at Yucca Mountain in Nye County, Nevada. As part of the Proposed Action, DOE analyzed the potential impacts of transporting spent nuclear fuel and high-level radioactive waste to the Yucca Mountain site from 77 sites across the United States, including WNYNSC. Because this 2002 EIS includes consideration of the shipment of the high-level radioactive waste canisters from WNYNSC, that analysis is summarized and incorporated by reference in this *Decommissioning and/or Long-Term Stewardship EIS.* On April 8, 2004, DOE issued a ROD (69 FR 18557) to announce its decision on the mode of waste transport and selection of the rail corridor for transportation of waste to the proposed Yucca Mountain repository.

In June 2008, DOE issued two supplements to the *Yucca Mountain EIS*. The first is the *Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada* (DOE/EIS-0250F-S1), in which DOE evaluates proposed actions to construct, operate, monitor, and eventually close a geologic repository at Yucca Mountain, and the No Action Alternative, which would terminate activities at Yucca Mountain. The second is the *Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada – Nevada Rail Transportation Corridor (Final Rail Corridor SEIS)* (DOE/EIS-0250F-S2), in which the potential environmental impacts of constructing and operating a railroad to connect the Yucca Mountain repository to an existing rail line near Wabuska, Nevada (the Mina corridor) are evaluated. This second supplement is linked to and was issued with the *Final Environmental Impact Statement for a Rail Alignment for the Construction and Operation of a Railroad in Nevada to a Geologic Repository at Yucca Mountain, Nye County, Nevada* (DOE/EIS-0369), discussed in Section 1.6.5 of this chapter.

As indicated in the Administration's fiscal year 2010 budget request, the Administration intends to terminate the Yucca Mountain program while developing nuclear waste disposal alternatives. Notwithstanding this decision to terminate the Yucca Mountain program, DOE remains committed to meeting its obligations to manage and ultimately dispose of high-level radioactive waste and spent nuclear fuel. The Administration intends to convene a blue ribbon commission to evaluate alternative approaches for meeting these obligations. This commission will provide the opportunity for a meaningful dialogue on how best to address this

[3] *In accordance with a Settlement Agreement between DOE and the State of Washington signed on January 6, 2006, in the case State of Washington v. Bodman, DOE will not ship low-level radioactive waste or mixed low-level radioactive waste from WVDP to Hanford until DOE has satisfied the requirements of the Settlement Agreement to complete the Tank Closure and Waste Management EIS for the Hanford Site. Also, under the Preferred Alternative for the Draft EIS, DOE would not ship wastes to Hanford for disposal until after the Hanford Waste Treatment Plant is operational.*

challenging issue and will provide recommendations that will form the basis for working with Congress to revise the statutory framework for managing and disposing of high-level radioactive waste and spent nuclear fuel.

1.6.5 *Final Environmental Impact Statement for a Rail Alignment for the Construction and Operation of a Railroad in Nevada to a Geologic Repository at Yucca Mountain, Nye County, Nevada (Final Rail Alignment EIS)* (DOE/EIS-0369)

In the *Final Rail Alignment EIS* (DOE 2008b), DOE analyzes the potential environmental impacts associated with potential rail alignments within the Caliente and Mina corridors as well as the construction and operation of a railroad line in Nevada to transport spent nuclear fuel, high-level radioactive waste, and other Yucca Mountain project materials to a repository at Yucca Mountain. This EIS tiers from the broader corridor analysis in both the *Yucca Mountain EIS* and the *Final Rail Corridor SEIS*, discussed in Section 1.6.4. In the October 2008 ROD (73 FR 60247) for the *Final Rail Alignment EIS*, DOE announced its decision to construct and operate a railroad along a rail alignment within the Caliente corridor. DOE also has decided to allow shipments of general freight on the rail line. As indicated in the previous section, however, the Administration has indicated its intent to terminate the Yucca Mountain program.

1.6.6 *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste (WM PEIS)* (DOE/EIS-0200-F)

In May 1997, DOE issued the *WM PEIS* (DOE 1997a), which examined the potential environmental and cost impacts of strategic management alternatives for low-level radioactive waste, mixed low-level radioactive waste, transuranic waste, high-level radioactive waste, and nonwastewater hazardous waste resulting from nuclear defense and research activities at sites around the United States.

DOE published four RODs based on this EIS. In its ROD for the treatment and management of transuranic waste, published on January 23, 1998 (63 FR 3629), DOE announced its decision (with one exception)[4] that each DOE site, including WVDP (if the waste is determined to be defense waste), would prepare its transuranic waste for disposal and store the waste on site until it could be shipped to WIPP in Carlsbad, New Mexico, for disposal.

In the second ROD, published on August 5, 1998 (63 FR 41810), DOE announced its decision to continue using offsite facilities for the treatment of major portions of the nonwastewater hazardous waste generated at DOE sites. This decision did not involve any transfers of nonwastewater hazardous waste between DOE sites.

In the third ROD, published on August 16, 1999 (64 FR 46661), DOE announced its decision to store immobilized high-level radioactive waste in a final form at the site of generation (Hanford, Idaho National Laboratory, the Savannah River Site, and WNYNSC) until transfer to a geologic repository for ultimate disposition.

In a fourth ROD, published in the *Federal Register* on February 25, 2000 (65 FR 10061), DOE addressed the management and disposal of low-level radioactive waste and mixed low-level radioactive waste. In this ROD, DOE announced its decision to perform minimal treatment of low-level radioactive waste at all sites and continue, to the extent practicable, disposal of onsite low-level radioactive waste at Idaho National Laboratory, Los Alamos National Laboratory, the Oak Ridge Reservation, and the Savannah River Site. DOE identified Hanford in Washington and NTS in Nevada as regional disposal sites for low-level and mixed low-level

[4] *Sandia National Laboratories in New Mexico would ship its transuranic waste to the Los Alamos National Laboratory in New Mexico to prepare this waste for shipment to WIPP.*

radioactive waste from other DOE sites that do not have appropriate disposal capability, including WVDP. This decision regarding using DOE sites does not preclude the use of commercial disposal sites.

1.6.7 *Waste Isolation Pilot Plant Disposal Phase Final Supplemental Environmental Impact Statement* (DOE/EIS-0026-S-2)

In October 1980, DOE issued the *Final Environmental Impact Statement, Waste Isolation Pilot Plant* on the proposed development of WIPP (DOE 1980). In January 1981, in the subsequent ROD, DOE announced a phased development of WIPP, beginning with construction of the WIPP facility. DOE issued the *Final Supplemental Environmental Impact Statement, Waste Isolation Pilot Plant* in January 1990 in which previously unavailable information was considered. Based on the *Supplemental EIS*, DOE decided to continue phased development of WIPP by implementing test-phase activities. On October 30, 1992, the WIPP Land Withdrawal Act transferred the WIPP Site from the U.S. Department of the Interior to DOE. The 1997 Defense Authorization Act (September 23, 1996) amended the WIPP Land Withdrawal Act to make RCRA hazardous waste land disposal prohibitions inapplicable to WIPP. The *Waste Isolation Pilot Plant Disposal Phase Final Supplemental Environmental Impact Statement* (DOE/EIS-0026-S-2), issued in September 1997, updated information contained in the 1980 and 1990 EISs, and incorporated the analysis of various treatment alternatives for transuranic waste. In a ROD issued in January 1998 (63 FR 3264), DOE announced its decision to open WIPP for the disposal of defense transuranic waste. This *Supplemental EIS* includes WVDP transuranic waste in DOE's Additional Inventory, which is nondefense transuranic waste owned or controlled by DOE. No decisions were made regarding this Additional Inventory.

1.6.8 *Final Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada (NTS EIS)* (DOE/EIS-0243)

In this EIS (DOE 1996b), DOE analyzed the potential impacts that could result from mission activities at NTS, including low-level radioactive waste and mixed low-level radioactive waste disposal. In the *NTS EIS*, DOE analyzed waste management and environmental restoration activities and other mission activities for a 10-year period, including receipt of low-level radioactive waste and mixed low-level radioactive waste from other sites such as WVDP.

On July 24, 2009, DOE issued an NOI (74 FR 36691) to prepare a new sitewide EIS for the continued Operation of NTS. This EIS will analyze potential impacts resulting from reasonably foreseeable operations for three action alternatives and a No Action Alternative. The three action alternatives would differ by either their type or level of ongoing operations and may include proposals for new operations or the reduction or elimination of certain operations. The No Action Alternative is to continue current operations through implementation of the 1996 ROD and subsequent decisions.

1.6.9 *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington* (DOE/EIS-0391)

On October 30, 2009, EPA issued a Notice of Availability (74 FR 56194) for the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington* (DOE/EIS-0391). This EIS analyzes and evaluates the potential health and environmental impacts of storing, retrieving, treating, and disposing of the waste inventory generated during defense production years at Hanford in Washington State. This EIS evaluates the potential health and environmental impacts of ongoing solid waste management operations at Hanford, as well as the proposed disposal of Hanford low-level radioactive waste and mixed low-level radioactive waste and a limited volume of low-level radioactive waste and mixed low-level radioactive waste from other DOE sites, such as the WVDP, in an Integrated Disposal Facility

located at Hanford.[5] The defense waste inventory of about 205 million liters (54.5 million gallons) of mixed radioactive and chemically hazardous waste, stored in 177 large and 61 smaller underground storage tanks, presents a major source of potential public health and environmental risks. In addition, this EIS evaluates the potential health and environmental impacts of proposed activities to decommission the Fast Flux Test Facility and auxiliary facilities at Hanford, including managing waste generated by the decommissioning process and disposing of Hanford's inventory of radioactively contaminated bulk sodium from the Fast Flux Test Facility and other onsite facilities.

1.6.10 *Environmental Impact Statement for the Disposal of Greater-Than-Class-C Low-Level Radioactive Waste* (DOE/EIS-0375)

On July 23, 2007, DOE issued an NOI (72 FR 40135) to prepare an EIS to evaluate alternatives for the disposal of Greater-Than-Class C low-level radioactive waste and similar DOE waste, which may not have an identified path to disposal. The waste volumes being analyzed in this EIS include estimates of the amount of Greater-Than-Class C and potential non-defense transuranic waste that may be generated from decommissioning activities at WNYNSC, as well as transuranic waste currently in storage at WNYNSC. Currently, there is no location for the disposal of Greater-Than-Class C low-level radioactive waste, and the Federal Government is responsible for such disposal under the Low-Level Radioactive Waste Policy Amendments Act (Public Law 99-240). DOE is evaluating several disposal methods in this EIS, including a deep geologic repository, intermediate depth boreholes, and enhanced near-surface facilities at different locations.

1.6.11 *Environmental Assessment for the Decontamination, Demolition, and Removal of Certain Facilities at the West Valley Demonstration Project* (DOE/EA-1552)

This environmental assessment was issued in September 2006. As part of ongoing WVDP responsibilities and in accordance with the WVDP Act, DOE proposed to demolish and remove 36 facilities. Although some of the facilities are currently in use, DOE would be able to eliminate or significantly reduce the functions that are undertaken in those facilities. Once the functions are replaced or no longer needed by WVDP, DOE would demolish and remove the facilities from the site. All applicable RCRA and NYSDEC regulations for management (storage, shipping, reporting, and offsite disposal) of solid waste, including hazardous waste, would be followed in completing the work.

1.7 Public Participation

1.7.1 Public Participation Process

During the preparation of an EIS, opportunities for public involvement are provided as stipulated by NEPA and SEQR (see **Figure 1–2**). The steps followed under either set of regulations are similar. In Figure 1–2 both the NEPA and SEQR process steps are indicated. When the SEQR process steps are different or have different names from the NEPA process steps, the SEQR step is indicated parenthetically. As a preliminary step in development of an EIS, regulations established by the Council on Environmental Quality (40 CFR 1501.7) and DOE (10 CFR 1021) require "an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a Proposed Action." As part of the scoping process (40 CFR 1501.7[a]), the Council on Environmental Quality requires the agency preparing an EIS to:

[5] *In accordance with a Settlement Agreement between DOE and the State of Washington signed on January 6, 2006, in the case State of Washington v. Bodman, DOE will not ship low-level radioactive waste or mixed low-level radioactive waste from WVDP to Hanford until DOE has satisfied the requirements of the Settlement Agreement to complete the Tank Closure and Waste Management EIS for the Hanford Site. Also, under the Preferred Alternative for the Draft EIS, DOE would not ship wastes to Hanford for disposal until after the Hanford Waste Treatment Plant is operational.*

- Invite the participation of affected Federal, state, and local agencies, any affected Indian tribe, the proponent of the action, and other interested persons.
- Determine the scope and significant issues to be analyzed in the EIS.
- Identify and eliminate from detailed study issues that are not significant or have been covered under other environmental reviews.
- Allocate assignments for preparation of the EIS among the lead and cooperating agencies, with the lead agency retaining responsibility for the statement.
- Indicate any other NEPA documents that are being or will be prepared that are related to the EIS but not part of the scope.
- Identify other environmental review and consultation requirements so that other necessary analyses and studies can be prepared concurrently and integrated with the EIS.
- Indicate the relationship between the timing of the preparation of environmental analyses and the agencies' tentative planning and decisionmaking schedule.

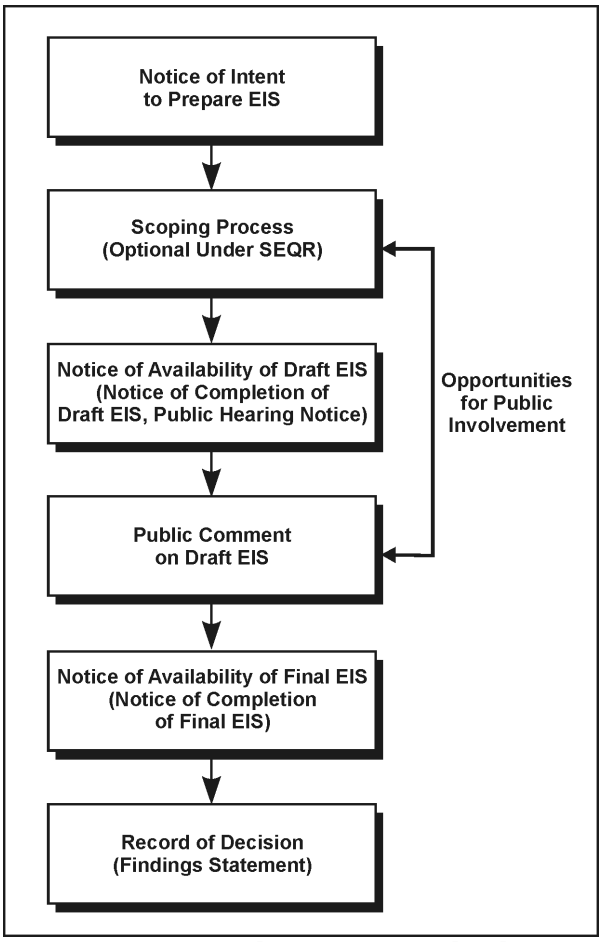

Figure 1–2 National Environmental Policy Act and State Environmental Quality Review Act Process

As indicated in Figure 1–2, scoping is not required under SEQR, but may be initiated by the lead agency (6 NYCRR 617.8). If scoping is conducted, it must include an opportunity for public participation.

In addition to the scoping process, public participation is solicited in the review of a Draft EIS. Both NEPA and SEQR require that comments on a Draft EIS be assessed and considered during the preparation of a Final EIS, and that responses to the comments be provided.

1.7.2 Issues Raised During the Public Comment Period on the 1996 Draft EIS

The 1996 *Cleanup and Closure Draft EIS* was distributed in March 1996 to interested individuals and organizations, including appropriate state clearinghouses, regulatory agencies, and American Indian Tribes. During the 6-month public comment period, four information sessions were held during which DOE and NYSERDA were available to explain and discuss topics and issues that pertained to the Draft EIS. Two of the four sessions were held on reservations of the Seneca Nation of Indians. A formal public hearing was conducted in three meetings on August 6, 1996, in West Valley, New York, to receive oral comments. During the 6-month comment period, DOE received 113 letters from individuals and organizations. A wide spectrum of issues was raised during the public comment period. Many of the comments related to the definition and analysis of the alternatives (the scope of the EIS), but some dealt with issues such as responsibility, determining regulatory compliance, and funding for operation of the West Valley Site, which are outside the scope of an EIS.

All of the documents received during the public comment period on the *Cleanup and Closure Draft EIS*, as well as the transcripts from the formal hearings, were reviewed, and specific comments were delineated and organized into the following 13 major categories:

1. Characterization of the site, waste, and contamination, or presentation of data
2. Reasonableness of alternatives
3. Design or operational details
4. Short-term impact analysis
5. Long-term erosion analysis
6. Long-term hydrologic transport analysis
7. Erosion control strategies
8. Long-term performance assessment
9. Preferences for or against a particular alternative
10. Specific recommendations for the Preferred Alternative
11. Regulatory compliance
12. Understanding the purpose and content of the EIS and its relationship to decisionmaking
13. Out-of-scope comments

Appendix A of this EIS contains a table that cross-references each comment letter or transcript to the applicable category to assist the commentor in understanding how the lead agencies responded to the comment. For each category, examples or summaries of the comments received are provided and then a response is provided to that category of comments. For the out-of-scope comments, an explanation is provided as to why they were placed in that category.

1.7.3 Issues Raised During the 2003 Scoping Process

A 45-day comment period was initiated by the March 13, 2003, DOE Notice in the *Federal Register* (68 FR 12044) and NYSERDA Notice in the *New York State Environmental Notice Bulletin* (NYSERDA 2003) of their intent to prepare a *Decommissioning and/or Long-Term Stewardship EIS*. DOE and NYSERDA held two public scoping meetings (April 9 and 10, 2003) in Ashford, New York, to solicit comments on the scope and content of the EIS. Transcripts of the two scoping meetings captured oral comments and issues raised by four commentors. DOE also received 10 sets of written comments on a variety of EIS-related issues, submitted several ways: by using the "Comment Form" provided by DOE at the public scoping meetings, by letter through the U.S. Postal Service, by electronic mail (email), or handed in during the April 9 and 10 meetings.

Overview of Comments

Several comments were made in the scoping meetings and comment letters that related to recommendations for the scope of the Revised Draft EIS. These were as follows:

- The scope of alternatives should be for the portion of the site controlled by DOE rather than the entire WNYNSC.
- The Final EIS should show the individual comments made on the Revised Draft, as well as comments made on the 1996 *Cleanup and Closure Draft EIS*, and should respond to these comments individually.

- The Revised Draft EIS should evaluate the Exhume and On-site Storage Alternative, which was evaluated in the 1996 *Cleanup and Closure Draft EIS*.
- The impact assessment should use probabilistic risk assessment methods.
- The erosion modeling should account for specific processes, including slumping, stream capture, and gully formation. In addition, the model should be calibrated against measured changes in valley cross section.
- The dose projections should account for populations that are reasonably expected to be exposed.
- The analysis of impacts should consider occupational exposure and the effect of activity timing on occupational exposure.
- The Final EIS should show the relationship of this EIS to other West Valley EISs.
- Requirements of the WVDP Act (Public Law 96-368) and the regulatory standards that would apply to decommissioning should be outlined.

All of these comments were considered in the development of this EIS. The scope of the alternatives considers the entire site consistent with the NOI. The decision was made to address the comments received on the 1996 Draft EIS in a summary manner in this EIS, because of the amount of time that has passed and the numerous changes that have occurred at the site since 1996. As discussed in Section 1.7.2, comments on the 1996 Draft EIS were organized into categories, and the summarized issue(s) and the response(s) appear in Appendix A of this EIS. This EIS considered, but did not analyze, the Exhume and On-site Storage Alternative because it is inconsistent with the purpose and need. This EIS utilizes updated long-term performance assessment models for groundwater and erosion as described in Appendices E, F, and G. The dose projections address the populations that could reasonably be expected to be impacted by site releases. The analysis of impacts does consider occupational exposure, but does not directly investigate the effect of decommissioning timing on occupational exposure. The history of the development of this EIS, including its relationship to other West Valley EISs, is discussed in Section 1.2. The requirements of the WVDP Act and the regulatory standards that apply to decommissioning of WNYNSC are discussed in Section 1.3.

The discussion at the meetings and in the letters also involved issues related to the EIS but not directly related to recommendations for the scope of this EIS. These out-of-scope issues include the following:

- Terms of the stipulation of compromise between DOE and the Coalition on West Valley Nuclear Wastes and Radioactive Waste Campaign
- Process and criteria for agency decisionmaking
- Future NRC actions, some of which might be supported by the DOE/NYSERDA EIS
- Relationship between DOE and NYSERDA
- Objection to the process for classifying waste incidental to reprocessing

1.7.4 Public Participation for the 2008 Revised Draft EIS

DOE and NYSERDA solicited comments on the Revised Draft EIS during a 9-month public comment period, which began on December 5, 2008 when the Notice of Availability appeared in the *Federal Register* (73 FR 74160). A Notice of Acceptance of the Revised Draft EIS and Public Hearings was also published on December 10, 2008 in the *New York State Environmental Notice Bulletin* in accordance with SEQR

requirements. The December 5, 2008 Notice of Availability announced a 6-month public comment period, through June 8, 2009. In response to stakeholder requests, the public comment period was extended another 90 days, until September 8, 2009.

During the public comment period, DOE and NYSERDA jointly held four public hearings to provide interested members of the public with opportunities to learn more about the content of the Revised Draft EIS from exhibits, factsheets, and other materials; to hear DOE and NYSERDA representatives present the results of the EIS analyses; to ask clarifying questions; and to provide oral or written comments. A website (http://www.westvalleyeis.com) was established to further inform the public about the Revised Draft EIS, how to submit comments, the public hearings, and other pertinent information. Comment submission mechanisms and public hearing dates, times, and locations were announced in the *Federal Register* and *New York State Environmental Notice Bulletin* notices, in local newspapers, and on the website. Members of the public who expressed interest and are on the DOE and NYSERDA mailing list for the *Decommissioning and/or Long-Term Stewardship EIS* were notified by U.S. mail regarding hearing dates, times, and locations.

Public hearings were held in Albany, Irving (on the Seneca Nation of Indians Reservation), Ashford, and Buffalo, New York on March 30 and 31, and April 1 and 2, 2009, respectively. The December 5, 2008 *Federal Register* notice announced the times and locations for three public hearings. However, in response to stakeholder requests, another meeting was added in Albany, and the Buffalo meeting was moved from the original Blasdell location to a more central downtown Buffalo location. These changes to the hearing schedule were announced in the *Federal Register* on March 17, 2009 (74 FR 11364) and advertised in local newspapers. A court reporter recorded the oral comments made at each hearing and prepared a transcript for each. In addition, Federal, state and local governmental agencies; American Indian Tribal Governments, and the general public were encouraged to submit comments by U.S. mail, e-mail, a toll-free fax line, and the DOE website.

In response to public concerns about some of the alternatives in the Revised Draft EIS, especially after the August 9 and 10, 2009 heavy rainfall events, the DOE Assistant Secretary for Environmental Management and the President of NYSERDA initiated planning for a videoconference to discuss those concerns. The videoconference was held on September 4, 2009, with participation by the Assistant Secretary and the President of NYSERDA and various stakeholders. This 'meeting' was also transcribed by a court reporter and the comments and responses are included in the comment response process.

Overall, approximately 1,900 comments were received during the public comment period on the Revised Draft EIS. DOE and NYSERDA considered all comments, including those received after the comment period ended, in preparing this Final EIS. Volume 3 of this EIS, *Comment Response Document*, provides details of the public meetings and the comment response process.

Copies of each comment document, including the transcripts, with individual comments identified, are presented in a side-by-side format with DOE's and NYSERDA's response to each comment, in Volume 3, *Comment Response Document*, Section 3, "Public Comments and DOE/NYSERDA Responses," of this EIS.[6]

[6] *By a letter dated December 27, 2008, Ms. Barbara Warren, Executive Director of the Citizens' Environmental Coalition, requested that The Real Costs of Cleaning Up Nuclear Waste: A Full Cost Accounting of Cleanup Options for the West Valley Nuclear Waste Site (Synapse Report) be included in the public comment record for this EIS. This report has been addressed in accordance with Council on Environmental Quality NEPA regulations (40 CFR 1503.4[b]) in Issue Summary 5, Conclusions of the Synapse Report, in Section 2 of the Comment Response Document. This issue summary is divided into three major portions: a high-level overview of the information contained in the report and its appendices; a section in which DOE presents perceived shortcomings in the report; and the final section which identifies comments relevant to the 2008 Revised Draft EIS that were inferred by DOE and NYSERDA from the information presented in the report and its appendices, and provides responses to those comments.*

Comments were received on a variety of subjects. However, the following six paragraphs summarize the subjects on which the majority of comments were received:

Modified Phased Decisionmaking Alternative. A variety of comments revealed a need to clarify the nature of the Phase 2 actions and associated impacts. A specific comment requested clarification that Phase 2 of the Phased Decisionmaking Alternative would involve only removal or in-place closure for those facilities remaining after completion of the Phase 1 decommissioning actions. Several commentors also expressed concerns about the delay in the timing of the Phase 2 decisionmaking. Some expressed a concern that the Phase 2 decision would not be made. Others pointed out the loss in technical expertise and socioeconomic impact that would occur if there were many years between the completion of the Phase 1 decommissioning actions and the initiation of the Phase 2 decommissioning actions.

Support for Sitewide Removal of All Radioactive and Hazardous Wastes. Many of the commentors stated their preference for sitewide removal of all radioactive and hazardous wastes from WNYNSC as soon as possible. In many cases, these commentors expressed specific support for the Sitewide Removal Alternative over other alternatives. Reasons for this preference generally centered on concerns about contamination migrating from WNYNSC to groundwater and surface water in the region due to erosion or earthquakes. Some commentors also stated their opinion that the Sitewide Removal Alternative is more cost-effective than the other alternatives.

Concerns about Potential Contamination of Water. Commentors expressed concerns that, because streams near WNYNSC eventually discharge into Lake Erie, contaminated liquid effluents from WNYNSC could enter the streams and adversely affect regional water users in Western New York and the Great Lakes region. Concerns were also expressed about the use of water from nearby streams. In addition, some commentors were specifically concerned about the potential effects of erosion at WNYNSC on water quality.

Questions about Long-term Erosion Modeling. Some commentors, referring to statements in the NYSERDA Foreword to the 2008 Revised Draft EIS, expressed their opinion that the long-term erosion analysis presented in the EIS is not scientifically defensible. Others questioned some of the assumptions used to calibrate the erosion model and expressed concerns about gully projections. Several commentors pointed out the erosion that occurred in the region following the heavy rainfall events of August 9 and 10, 2009, as an illustration of the potential for sudden and dramatic topography changes in the region. Commentors also expressed views regarding the EIS's lack of predictions regarding the timing of the potential Buttermilk Creek capture of Franks Creek. Many commentors asked questions concerning the erosion modeling and analysis conducted for the Revised Draft EIS.

Questions about Cost-Benefit Analysis. Several commentors stated that the cost information presented in Chapter 4, Section 4.2, of the Revised Draft EIS does not accurately represent the total costs of the alternatives or that the cost-benefit information (also presented in Section 4.2) is misleading. Some commentors expressed their opinion that there could be large releases of hazardous constituents that would require expensive mitigation actions if wastes were to remain on site. Some commentors were also critical of the assumptions in the cost-benefit methodology, stating that discounting was not appropriate when evaluating long-term costs.

Conclusions of the *Synapse Report*. Several commentors specifically cited or alluded to the conclusions of a report titled, *The Real Costs of Cleaning Up Nuclear Waste: A Full Cost Accounting of Cleanup Options for the West Valley Nuclear Waste Site* (*Synapse Report*), which was prepared by Synapse Energy Economics, Inc. These commentors expressed a preference for the Sitewide Removal Alternative, stating that it is the most cost-effective alternative or represents the least risk and lowest cost, based on the Synapse Report. In addition, some commentors stated that the *Synapse Report* analysis is

supported by NYSERDA. This latter assertion is inaccurate, according to NYSERDA's comments on the report (NYSERDA 2009a).

When the Final EIS is published, its availability will be announced in the *Federal Register*, the *New York State Environmental Notice Bulletin*, local newspapers, and via U.S. mail.

Based on the Final EIS and other considerations, DOE will announce a decision regarding future actions at WNYNSC in a ROD to be published in the *Federal Register* no sooner than 30 days after the EPA Notice of Availability for the Final EIS is published. NYSERDA will publish its decisions regarding actions at WNYNSC in a Findings Statement in the *New York State Environmental Notice Bulletin*.

1.8 Changes from the Revised Draft EIS

In preparing this Final EIS, DOE and NYSERDA made revisions to the Revised Draft EIS in response to comments received during the public comment period from Federal and state legislators, other Federal agencies, state and local government entities, American Indian Tribal governments, and the public. The descriptions of the proposed alternatives, in particular, the Phased Decisionmaking Alternative, have been revised to reflect the current plan for their implementation. In addition, this EIS was revised to provide additional and updated environmental baseline information, to include the results of additional analyses, to correct editorial errors, and to clarify text. This EIS was also updated to reflect events that occurred, notifications that were made for other NEPA documents, and changes in applicable regulatory requirements or guidance since the Revised Draft EIS was issued for public comment in December 2008. The following paragraphs summarize the more important changes made to this EIS.

Incorporation of Updated Environmental and Site-specific Information

This EIS was updated to include another year of environmental monitoring data for WNYNSC, primarily as provided in the *West Valley Demonstration Project Annual Site Environmental Report for Calendar Year 2007* (WVES and URS 2008) and from revisions in the Site Technical Reports (WSMS 2009a, 2009b, 2009c, 2009d, 2009e), including reassessment of the amount of certain wastes that would be exhumed under the Sitewide Removal Alternative and reclassification of other waste from low specific activity radioactive waste to demolition and debris waste. The updated environmental monitoring data was used to update the environmental baseline in Chapter 3. The revised engineering data is reflected in the descriptions of alternatives in Chapter 2 and used in the impact analyses presented in Chapter 4 and the various supporting appendices.

The near-field hydrologic analysis was revised to reflect the current understanding of the structure of the North Plateau slack-water sequence and Lavery till-sand unit and updated to incorporate design parameters for the as-installed NDA slurry wall and geomembrane cover. These changes and the results of the analysis are described in detail in Appendix E of this Final EIS. The results are used in the revised transport and dose analyses in Appendix H, Sections H.2.2.2 and H.2.2.3, and Chapter 4, Sections 4.1.10.3.1 and 4.1.10.3.2.

Changes Made in Response to the NYSERDA View on the Revised Draft EIS

Changes were made in this EIS in response to the initial NYSERDA View, which appeared as the Foreword to the Revised Draft EIS. The View has been revised for this Final EIS, but additional analyses were performed by DOE between the Revised Draft and this Final EIS to address some of the issues raised in the initial View. In addition to revising the text in this EIS to incorporate new analyses and clarify certain discussions, text boxes have been added to applicable sections of this EIS to indicate NYSERDA's revised View and DOE's responses. Specifically, NYSERDA identified eight issues, five of which (issue

numbers 1, 2, 3, 4, and 8 in the View) relate to the nature and use of the long-term performance assessment information. These issues present NYSERDA's opinions that:

- ***Issue 1.*** The erosion analysis in the EIS is not scientifically defensible and the predictions do not show gully penetration into the Main Plant Process Building or Waste Tank Farm, nor is gully advancement on the North Plateau at a rate or in a direction acceptable to NYSERDA.

  Change in EIS: The erosion analysis was modified by calibrating the erosion code using Monte Carlo (probabilistic) methods. These updated results were then used for unmitigated erosion scenario predictions. These changes to the erosion analysis are described in detail in Appendix F of this Final EIS. The revised erosion analysis showed a decrease in predicted erosion for the South Plateau and an increase for the North Plateau. The results are used in the revised dose analysis in Appendix H, Section H.2.2.4; and Chapter 4, Section 4.1.10.3.3. The predicted peak dose is less than that predicted in the Revised Draft EIS because of the projected decreasing gully advance rate at times in the future when peak doses are projected to occur. A text box has been added to Section 4.1.10.3.3 to address this issue.

- ***Issue 2.*** The analysis of contaminant transport by groundwater in the EIS, while sound, needs improvement. In particular, NYSERDA questioned why the one-dimensional transport model was used for environmental consequence analysis rather than the three-dimensional model.

  Change in EIS: The one-dimensional model was used for contaminant transport analysis in this EIS because test runs showed that the one-dimension model predictions of strontium-90 concentrations at various locations in the North Plateau Groundwater Plume centerline are comparable to the three-dimensional model (STOMP) prediction, both of which are similar to field observations. In addition, the one-dimensional model has a much shorter run time than the STOMP model when analyzing site-specific transport and is easier to integrate with both the release models and the dose consequence models. The hydrologic parameters used in the one-dimensional transport analysis are drawn from the three dimensional hydrologic analysis discussed in Appendix E, Section E.4 of this EIS. The use of the one-dimensional model also introduces an element of conservatism because it does not allow for lateral dispersion, which would lower the plume centerline concentrations. A more detailed discussion of the rationale for the use of the one-dimensional model for transport analysis is provided in Appendix E, Section E.4.1.1. A text box has been added to Section 4.1.10.3 to address this issue.

- ***Issue 3.*** The assumptions used in the EIS for the performance of engineered barriers such as caps, slurry walls, reducing grout, and other engineered materials intended to keep contamination physically and chemically bound in place have not been substantiated and may be overly optimistic.

  Change in EIS: The discussion of assumptions used for the performance of engineered barriers in Appendix H, Section H.2.2.1 of this Final EIS has been expanded to more fully describe and document the assumptions used in the analysis about engineered barriers. A text box has been added to Section 4.1.10.3.2 to address this issue.

- ***Issue 4.*** The EIS does not address uncertainty in a manner that provides decisionmakers with information about the critical contributors to uncertainty or the importance of uncertainty in site cleanup decisions. In particular, NYSERDA is of the opinion that assertions of conservatism in analyses and assumptions in the EIS are not adequately supported, and that the long-term analysis is not presented in enough detail or with enough clarity to be properly understood or independently replicated.

Change in EIS: Appendix H, Section H.2.2.1 of this Final EIS has been expanded to provide a detailed discussion of assumptions used in the long-term performance analysis and how the assumptions relate to the conservatism of the analysis. Consistent with NEPA requirements, Chapter 4, Section 4.3.5 acknowledges uncertainty in the estimates of environmental consequences for the alternatives and identifies incomplete or unavailable information that contributes to the uncertainty in the environmental consequence analyses. This section has been expanded and revised to clarify how uncertainty is considered in the long-term performance assessment. A text box has been added to Section 4.3 to address this issue.

- ***Issue 8.*** The long-term performance assessment is not adequate to support a decision for in-place closure of the Waste Tank Farm or any other facilities.

  Change in EIS: This last issue in the View is a summation of four other issues related to the long-term performance assessment effort presented in the Revised Draft EIS: erosion, hydrologic contaminant transport, performance of engineered barriers, and the presentation of information about the uncertainly of the long-term performance assessment and the use of this information in decisionmaking.

  DOE acknowledges in this EIS that there is uncertainty inherent in long-term (i.e., 10,000 to 100,000 years) performance assessment modeling, but is of the opinion that the analyses and disclosure of uncertainties in this EIS provide a sufficient quality of information to adequately support agency decisionmaking. For this Final EIS, DOE updated the hydrologic, groundwater dose, and erosion modeling methodology, and refined the models to reflect new site-specific information. Chapter 4, Section 4.1.10 and Appendices E, F, G, and H have been revised to present the updated results and discuss the changes in methodology, and Section 4.3.5 presents a comprehensive list of uncertainties that affect the results of the long-term performance assessment. A text box has also been added to Chapter 1, Section 1.5 of this Final EIS to discuss this issue.

Issues 5, 6, and 7 of the NYSERDA View pertain to other, individual topics:

- ***Issue 5*** indicates that the connection between the EIS analyses and the applicable regulatory framework must be strengthened. In this issue, NYSERDA discusses its position that the Nuclear Regulatory Commission's low-level radioactive waste disposal regulations (10 CFR Part 61) were used to guide the long-term performance assessment rather than NRC's License Termination Rule and implementing guidance (NUREG-1757). NYSERDA further states that 10 CFR Part 61 should generally not be used as part of the analytical framework for the EIS.

  Change in EIS: DOE did not use 10 CFR Part 61 regulatory requirements to structure the long term performance assessment presented in this EIS. The long-term performance assessment follows DOE NEPA guidance and precedent. The analysis presented in Appendix L uses the requirements of NRC's License Termination Rule (10 CFR Part 20, Subpart E) and the implementing guidance in NUREG-1757. A text box has been added to Chapter 1, Section 1.3 of this Final EIS to respond to this issue.

- ***Issue 6*** of the initial View indicates that the approach for exhumation of the SDA, NDA, and Waste Tank Farm described in the Revised Draft EIS may be overly conservative and based on extreme conditions rather than those that are more likely to be encountered during exhumation. This issue is primarily in the context of how this approach affects the estimated cost of the Sitewide Removal Alternative. NYSERDA also suggests that the disposal costs, in particular those for Greater-Than-Class C waste, should be reevaluated.

Change in EIS: The pre-conceptual engineering approach to implementing the Sitewide Removal Alternative was reviewed and revisions were made to reduce the conservatism in some of the assumptions. Costs were recalculated consistent with the revised approach and also using two different cost estimates for disposal of Greater-Than-Class C waste as described in Chapter 4, Section 4.2 of this Final EIS. A text box has been added to Section 4.2.1 to address this issue.

- ***Issue 7*** suggests that current methods for assessing nonradiological risk from transportation have limitations and are likely to overestimate fatalities. This results from use of "railcar-kilometers" to assess the number of expected accident fatalities from rail transport.

  Change in EIS: Chapter 4, Section 4.1.12 and Appendix J of this Final EIS have been revised to reduce conservatism in the transportation analysis. However, the only acceptable reference for railcar accident data reports the data in railcar-kilometers. Therefore, no change in the transportation analysis was made to specifically address this issue. Other changes were made in the transportation analysis to reduce conservatism. Appendix J and Section 4.1.12 have been revised to incorporate the new analysis. A text box was also added to Section 4.1.12 to explain this issue and the changes made to the analysis.

Revised Description of Alternatives

The description in Chapter 2, Section 2.3.1, of the Interim End State, the starting point for analyses in this EIS, has been updated to reflect new information about when activities to achieve the Interim End State are expected to be completed.

The descriptions of the proposed alternatives in Chapter 2, in particular, the Phased Decisionmaking Alternative, have been revised to reflect the current plan for implementing each of the alternatives. For example, the discussion of monitoring and maintenance during decommissioning and for any post-decommissioning activities was expanded for each of the alternatives.

The Phased Decisionmaking Alternative included in the November 2008 Revised Draft EIS allowed for a Phase 2 decision to be made anytime after the Phase 1 decision, but no later than 30 years from issuance of the initial DOE ROD and NYSERDA Findings Statement, if the Phased Decisionmaking Alternative is selected. In response to public comments that expressed concern over the length of time that could elapse between the Phase 1 and Phase 2 decisions, DOE and NYSERDA have reconsidered the timeframe for making a Phase 2 decision. As a result, the Phased Decisionmaking Alternative presented in this Final EIS specifies that a Phase 2 decision would be made no later than 10 years after issuance of the initial DOE ROD and NYSERDA Findings Statement, if the Phased Decisionmaking Alternative is selected. The overall effect of this change in the timeframe for making a Phase 2 decision is to eliminate the majority of monitoring and maintenance activities and avoid incurring their associated impacts. Specifically, monitoring and maintenance activities originally proposed for years 11 through 30 of Phase 1 would not occur, with the exception of monitoring and maintenance of the Interim Storage Facility for high-level radioactive waste canister storage. Instead, Phase 2 actions would begin. The specific changes in the impacts are discussed qualitatively for each resource area in Chapter 2, Section 2.6 of this EIS, which summarizes and compares the impacts among the evaluated alternatives. The short-term impacts of the modified Phased Decisionmaking Alternative would generally be less than the impacts identified in Chapter 4 of this EIS, which are based on a decision 30 years after the initial DOE ROD and NYSERDA Findings Statement, if the Phased Decisionmaking Alternative is selected.

In addition, NYSERDA has clarified that for the SDA, alternatives that will be considered for Phase 2 actions will include at least: complete exhumation, close-in-place, or continued active management consistent with SDA permit and license requirements. The impact analysis in Chapter 4 includes discussions of the potential impact of continued active management.

1.9 Organization of This Environmental Impact Statement

This EIS includes a separate Summary; Volume 1 consisting of a foreword and 11 chapters; Volume 2, containing 18 appendices; and the *Comment Response Document*, Volume 3. This EIS is organized as follows:

A Summary and Guide for Stakeholders, which provides a summary of the results of the environmental analysis in this EIS and provides a guide to locating specific information in the EIS.

Volume 1 consists of the following chapters:

Foreword (prepared by NYSERDA), which describes NYSERDA's views on the EIS analyses, in terms of their decisionmaking responsibilities.

Chapter 1, Introduction and Purpose and Need for Agency Action: This chapter provides an overview of the activities at WNYNSC, a brief history of events leading to the development of the document, the purpose and need for agency action, the scope and decisions to be supported by the EIS, the relationship of this EIS to other NEPA documentation, and the issues raised during the public participation process.

Chapter 2, Proposed Action, Facility Description, Alternatives, and Comparison of Environmental Impacts: This chapter provides a summary description of the project; a description of WNYNSC facilities and their expected status at the start of the implementation period; descriptions of the alternatives evaluated and alternatives dismissed from detailed evaluation; and a summary comparison of the environmental impacts of the four alternatives.

Chapter 3, Affected Environment: This chapter describes the existing environmental conditions at WNYNSC and surrounding areas.

Chapter 4, Environmental Consequences: This chapter describes the potential environmental impacts on WNYNSC and surrounding areas that could occur as the result of each of the reasonable alternatives during the implementation period, and also includes long-term performance results, cumulative impacts, cost-benefit considerations, incomplete and unavailable information, and resource commitments.

Chapter 5, Applicable Laws, Regulations, and Other Requirements: This chapter describes environmental, and safety and health laws, regulations, and standards applicable to the proposed decommissioning and/or long-term stewardship of WNYNSC.

Chapter 6, Potential Mitigation Measures: This chapter summarizes the mitigation measures that would be used to avoid or reduce potential environmental impacts that may result from implementation of the alternatives analyzed in Chapter 4.

Chapters 7 through 11: Chapters 7 through 11 contain a list of references, glossary, index, list of EIS preparers, and distribution list of agencies, organizations, and persons to whom copies of this *Decommissioning and/or Long-Term Stewardship EIS* were sent.

Volume 2 contains the following 18 appendices that provide technical information in support of information and environmental analyses presented in the main body of the document:

Appendix A – "Summary ofComments Received on the 1996 *Draft Environmental Impact Statement for Completion of the West Valley Demonstration Project and Closure or Long-Term Management of Facilities at the Western New York Nuclear Service Center*"

Appendix B – "*New York State Environmental Notice Bulletins* and *Federal Register* Notices"

Appendix C – "Descriptions of Facilities/Areas, Decommissioning Activities, and New Construction"

Appendix D – "Overview of Performance Assessment Approach"

Appendix E – "Geohydrological Analysis"

Appendix F – "Erosion Studies"

Appendix G – "Models for Long-Term Performance Assessment"

Appendix H – "Long-Term Performance Assessment Results"

Appendix I – "Decommissioning Radiological and Hazardous Chemical Human Health Impacts Evaluation"

Appendix J – "Evaluation of Human Health Effects from Transportation"

Appendix K – "Method for Estimating Nonradiological Air Quality Impacts"

Appendix L – "Regulatory Compliance Discussion"

Appendix M – "Floodplain and Wetlands Assessment"

Appendix N – "Intentional Destructive Acts"

Appendix O – "Consultation Letters"

Appendix P – "The SDA Quantitative Risk Assessment" (prepared by NYSERDA)

Appendix Q – "Concurrence Letters"

Appendix R – "Contractor Disclosure Statements"

Volume 3 is the *Comment Response Document* for this EIS and contains the following 4 sections:

Section 1, *Introduction*, provides an overview of the Revised Draft EIS public comment process.

Section 2, *Issue Summaries*, is a discussion of the major issues from the public comments.

Section 3, *Public Comments and DOE and NYSERDA Responses*, shows the public comment documents with the individual comments delineated and corresponding DOE and NYSERDA responses in a side-by-side format.

Section 4, *References*, presents the references for this volume.