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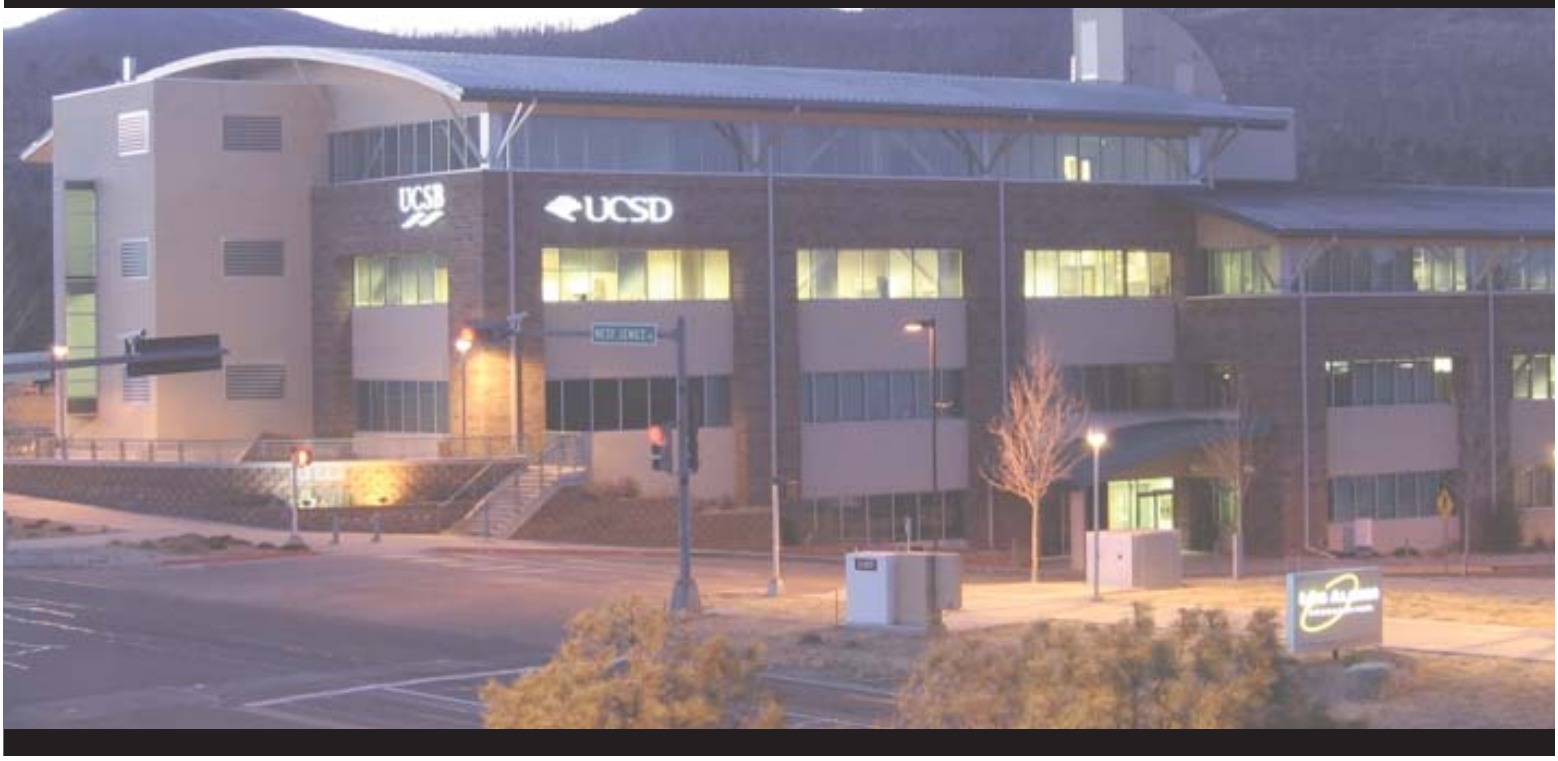
Final Supplement Analysis for the Environmental Assessment for the Lease of Land for the Development of a Research Park at Los Alamos National Laboratory



National Nuclear Security Administration

U.S. Department of Energy
National Nuclear Security Administration
Los Alamos National Laboratory

SUMMARY

In October 1997, the U.S. Department of Energy (DOE) prepared the *Environmental Assessment for the Lease of Land for the Development of a Research Park at Los Alamos National Laboratory* (DOE/EA-1212) and issued a Finding of No Significant Impact to lease certain undeveloped land at the Los Alamos National Laboratory for private sector use as a research park. On February 1, 1999, DOE and the Los Alamos Economic Development Corporation (now known as the Los Alamos Commerce and Development Corporation [LACDC]) entered into a 55-year lease for the development and use of the property as a research park. To date, one building has been constructed which consists of more than 83,000 square feet of specialty laboratory, office, and computing facilities.

In April 2014, Samitaur Medical Technologies (Samitaur) submitted a proposal to LACDC to construct and operate an accelerator production facility within the Los Alamos Research Park (LARP) for the purpose of producing medical isotopes. Because the Samitaur proposal would use and store radioactive materials that are prohibited under the current lease terms, in order to proceed, the existing lease would require modification.

The purpose and need for this Supplement Analysis (SA) is to support a determination by DOE/National Nuclear Security Administration (NNSA) as to whether the analysis in DOE/EA-1212 is sufficient to support a lease modification to remove the restriction on the use and storage of radioactive material specific for the Samitaur proposal, or whether additional National Environmental Policy Act (NEPA) documentation would be required. This SA provides a comparative or bounding analysis of the Samitaur proposal relative to the analysis in DOE/EA-1212 to determine if there are substantial changes in environmental impacts, or there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

For all resources that were considered in DOE/EA-1212, there are two under the current proposal that would exceed the bounding analysis. Electrical and water use would be higher than identified in DOE/EA-1212 but still within the available electrical system supply capacity and water rights, respectively. The analysis in this SA indicates that the identified and projected environmental impacts, including cumulative impacts and the impacts that could result from greenhouse gases and intentional destructive acts, would cause no significant change in the potential impacts identified in DOE/EA-1212.

On the basis of the Samitaur provided documents and comparative or bounding analysis of the Samitaur proposal relative to the analysis in DOE/EA-1212 presented in this SA, DOE/NNSA has determined that there are no currently identified significant new circumstances or information relevant to environmental concerns that warrant preparation of a supplemental or new NEPA document. However, as the project matures and further information becomes available additional NEPA review may be required. Based on the analysis in this SA, the existing lease between DOE/NNSA and the LACDC can be modified as necessary to allow the Samitaur proposal to proceed at the LARP.

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ACRONYMS AND ABBREVIATIONS

AEI	area of environmental interest
ALARA	As Low As Reasonably Achievable
ANSI	American National Standards Institute
BMP	best management practices
BSL-3	Biosafety Level-3
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMR	Chemical and Metallurgy Research
CMRR-NF	CMR-Nuclear Facility
CMR-R	CMR-Replacement
CO	carbon monoxide
CO_2	carbon dioxide
dBA	A-weighted decibels
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EA	environmental assessment
EIS	environmental impact statement
ERPG	Emergency Response Planning Guideline
FONSI	Finding of No Significant Impact
FR	Federal Register
Ge-68	germanium-68
GHG	greenhouse gas
HEPA	high-efficiency particulate air
HMP	Habitat Management Plan
HVAC	heating, ventilation, and cooling
IPF	Isotope Production Facility
Kr-85	krypton-85
kW	kilowatts
LACDC	Los Alamos Commerce and Development Corporation
LANL	Los Alamos National Laboratory
LANSCE	Los Alamos Neutron Science Center
LARP	Los Alamos Research Park
LCF	latent cancer fatality
LLW	low-level waste
MEI	maximally exposed individual
MeV	million electric volts
MIPF	Medical Isotope Production Facility
mrem	millirem
MWh	megawatt-hour
N-13	nitrogen-13
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NOx	nitrogen oxides
NMAAQS	New Mexico Ambient Air Quality Standards

NNSA	National Nuclear Security Administration
NPDES	National Pollutant Discharge Elimination System
NRC	Nuclear Regulatory Commission
NRHP	National Register of Historic Places
O-15	oxygen-15
PET	Positron Emission Tomography
PM	particulate matter
PRS	potential release sites
Rb	rubidium
Rem	Roentgen equivalent man
RCRA	Resource Conservation and Recovery Act
RLUOB	Radiological Laboratory, Utility, and Office Building
ROD	Record of Decision
SA	Supplement Analysis
SEIS	supplemental environmental impact statement
SHPO	State Historic Preservation Officer
Sr-82	strontium-82
SWEIS	site-wide environmental impact statement
SWMU	Solid Waste Management Unit
SWPPP	Stormwater Pollution Prevention Plan
SWWS	Sanitary Wastewater System
T & E	threatened and endangered
TA	technical area
USC	United States Code
USFWS	United States Fish and Wildlife Service

CONVERSION FACTORS FOR MEASURES USED IN THIS SUPPLEMENT ANALYSIS

English to Metric		
Multiply	By	To get
Acres	0.4046873	Hectares
Square feet	0.092903	Square meters
Miles	1.6093	Kilometers
Feet	0.3048	Meters
Inches	2.54	Centimeters
Tons (short)	0.90718	Metric tons
Pounds	0.45359	Kilograms
Gallons	3.78533	Liters
Cubic yards	0.76456	Cubic meters

Metric to English		
Multiply	By	To get
Hectares	2.47104	Acres
Square meters	10.764	Square feet
Kilometers	0.62137	Miles
Meters	3.2808	Feet
Centimeters	0.3937	Inches
Metric tons	1.1023	Tons (short)
Kilograms	2.2046	Pounds
Liters	0.26418	Gallons
Cubic meters	1.3079	Cubic yards

1.0 INTRODUCTION

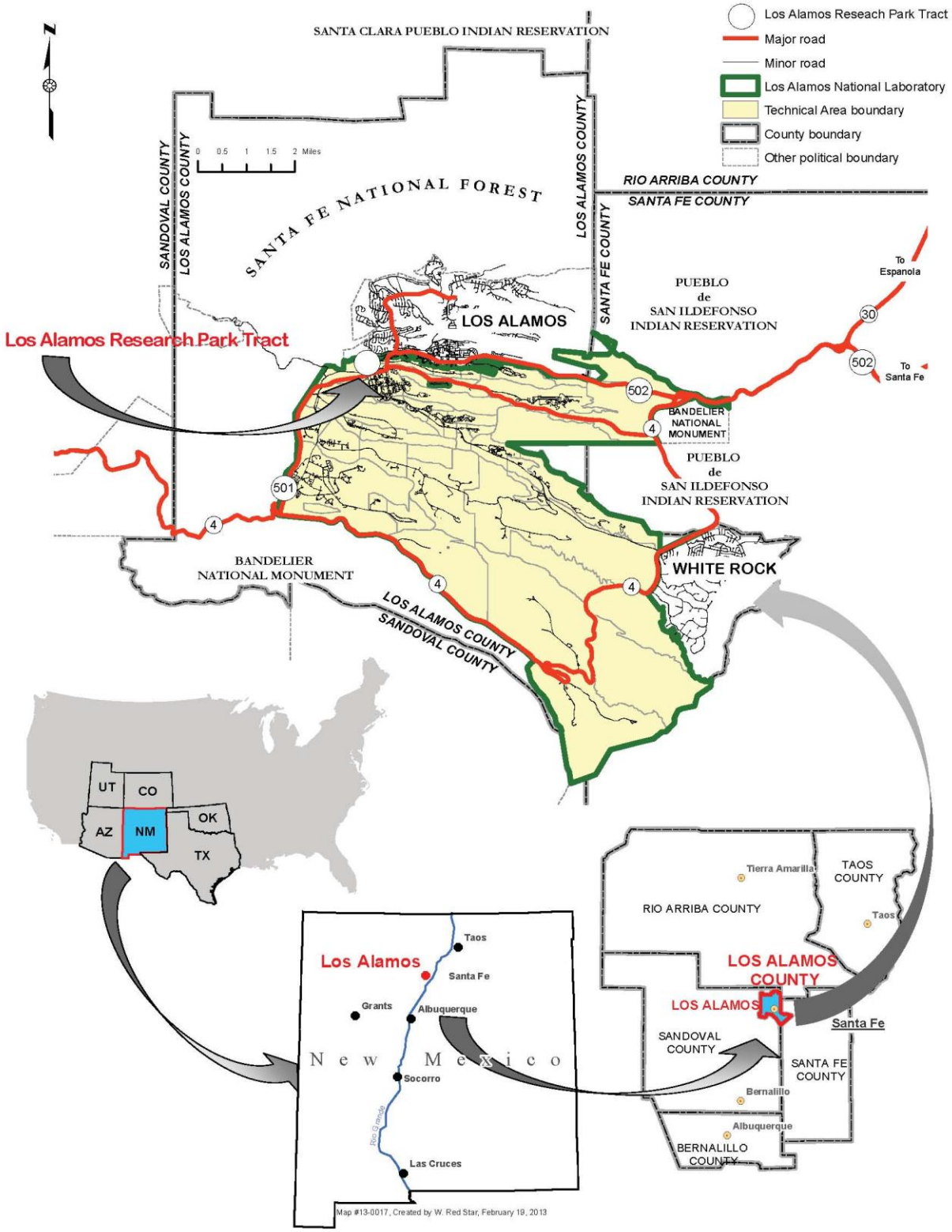
1.1 BACKGROUND

In October 1997, the U.S. Department of Energy (DOE) prepared the *Environmental Assessment for the Lease of Land for the Development of a Research Park at Los Alamos National Laboratory* (DOE/EA-1212; DOE-1997) (hereafter, 1997 EA) and issued a Finding of No Significant Impact (FONSI) to lease certain undeveloped land at the Los Alamos National Laboratory (LANL) for private sector use as a research park. Figure 1-1 shows the location of LANL and the Los Alamos Research Park (LARP). As discussed in Section 1.3 of this Supplement Analysis (SA), the 1997 EA analyzed the potential impacts associated with land development activities and future occupants' operations that could occur at the leased property.

On February 1, 1999, DOE and the Los Alamos Economic Development Corporation (now known as the Los Alamos Commerce and Development Corporation [LACDC]) entered into a 55-year lease for the development and use of the property as a research park (DOE 1999a). As shown in Figure 1-2 there are three parcels of land that comprise the LARP. The lease includes terms and conditions for the leased property, including allowable uses and prohibited uses. For example, the lease states that "The Leased Property shall be used to conduct research and development and auxiliary activities…", and prohibits the use and storage of radioactive materials, except for "sealed radioactive sources that are engineered to pass the special form testing specified by the Department of Transportation (DOT) in 49 Code of Federal Regulations (CFR) 173.469, or testing specified by American National Standards Institute (ANSI) N45.6 "Sealed Radioactive Sources, Categorization."

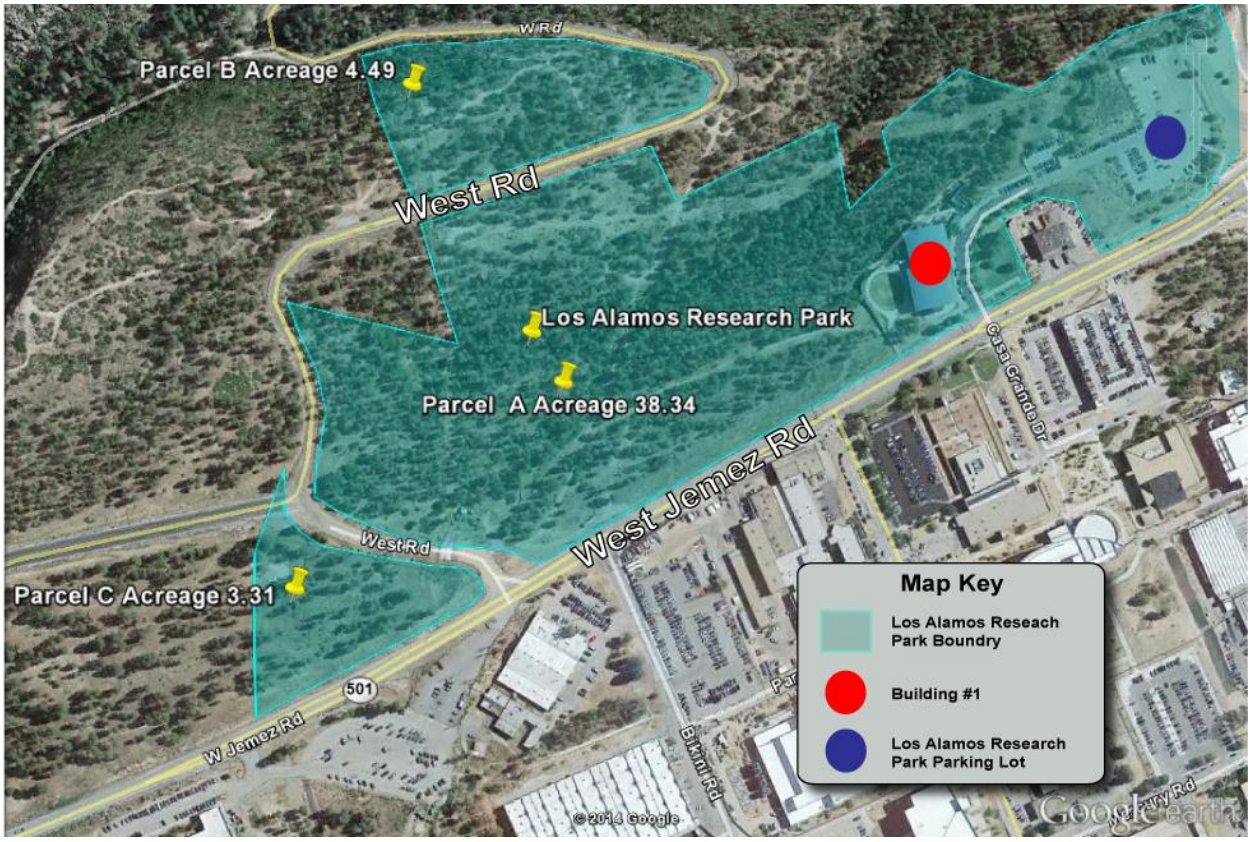
In accordance with the terms of the lease, LACDC prepared a Master Development Plan for the LARP (LACDC 1999). Under that Master Development Plan, LACDC envisioned that five buildings would be constructed, with up to 450,000 square feet of space, and would house 1,500 employees. Building One, which was completed and occupied in 2001, consists of more than 83,000 square feet of specialty laboratory, office, and computing facilities (Figures 1.2 and 1-3). The building also includes the Synergy Center, which was designed to serve as incubation space for new and emerging technologies. Since its opening, Building One has consistently been 100 percent (%) leased and has housed more than 35 businesses and organizations. Today, tenants include LANL, the New Mexico Consortium, the University of California at San Diego's Jacobs School of Engineering, Terranear PMC, and Hot Rocks Café. Currently, the LARP hosts more than 200 employees, working in the fields of biotechnology, environmental technologies, education, advanced computing, technology training, telecommunications, nanotechnology, and energy efficiency (LARP 2014). No other buildings have been constructed at the LARP.

In April 2014, Samitaur Medical Technologies (Samitaur) submitted a proposal to LACDC to construct and operate an accelerator production facility within Parcel A of the LARP (Figure 1-2) for the purpose of producing medical isotopes (Samitaur 2014a). For purposes of this SA, the proposed Samitaur facility is referred to as the Medical Isotope Production Facility (MIPF). Chapter 2 of this SA describes the Samitaur proposal in detail. Because the Samitaur proposal would use and store radioactive materials that are prohibited under the current lease terms, in order to proceed, the existing lease would require modification.



SOURCE (LANL Map #13-0017 February 19, 2013)

Figure 1-1. Location of the Los Alamos Research Park



SOURCE: Google Earth

Figure 1-2. Overhead View of the Los Alamos Research Park

SOURCE: LACDC 2014b

Figure 1-3. Building One at the Los Alamos Research Park

1.2 PURPOSE AND NEED FOR THIS SUPPLEMENT ANALYSIS

The purpose and need for this SA is to support a determination by DOE/National Nuclear Security Administration (NNSA) as to whether the analysis in the 1997 EA is sufficient to support a lease modification to remove the restriction on the use and storage of radioactive material specifically for the Samitaur proposal, or whether additional National Environmental

Policy Act (NEPA) documentation would be required. The 1997 EA provided sufficient evidence, analysis and mitigative actions to determine that a FONSI was appropriate for the proposed action in the 1997 EA to lease to the LACDC a 44-acre tract of land in Technical Area (TA)-3 for the purpose of development as a research park. Because details of the exact future use by tenants of the LARP were unknown at the time the 1997 EA was prepared, a "bounding analysis" was used to assess potential impacts. The 1997 EA states, "In addition, any proposed future action(s) that exceeds the assumptions ("bounds") of this effects analysis would not be allowed until an additional NEPA review could be performed and a decision to proceed with that action(s) is then made."

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

NEPA requires Federal agencies to consider the environmental consequences of Proposed Actions before decisions are made. NEPA's main purpose is to provide environmental information to decisionmakers and the public so actions are based on an understanding of the potential environmental consequences of a proposed action and its reasonable alternatives. The purpose of an EA is to provide DOE with sufficient evidence analysis to determine whether to prepare an Environmental Impact Statement (EIS) or a FONSI. The purpose of an SA is to determine whether a supplemental or new NEPA document should be prepared.

A Supplement Analysis is a document that DOE/NNSA prepares in accordance with DOE NEPA regulations (10 CFR 1021.314(c)) to determine whether a supplemental or new NEPA document[1] should be prepared. This SA provides an analysis of the Samitaur proposal relative to the analysis in the 1997 EA. If there are substantial changes in environmental impacts, or there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts, DOE/NNSA would prepare appropriate NEPA documentation for the lease modification. Otherwise, DOE/NNSA may make a determination that the lease may be modified without further NEPA documentation.

This SA has been prepared in accordance with the NEPA (42 United States Code [USC] 4321); the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provisions of the NEPA (40 CFR 1500-1508); DOE NEPA Implementing Regulations (10 CFR 1021); and DOE Recommendations for the Supplement Analysis Process (DOE 2005).

1.3 NATIONAL ENVIRONMENTAL POLICY ACT DOCUMENTS RELATED TO THE LOS ALAMOS RESEARCH PARK AND THE SAMITAUR PROPOSAL

- ***Environmental Assessment for the Lease of Land for the Development of a Research Park at Los Alamos National Laboratory*** (DOE/EA-1212; DOE 1997). DOE prepared the 1997 EA under authority of the Atomic Energy Community Act of 1955 (42 US 2301-2394), as amended, to facilitate the furtherance of Los Alamos County self-sufficiency. The Proposed Action to enter into a lease with the LACDC to create and develop the LARP was intended to accelerate economic development activities within the County by creating regional employment opportunities by offering underutilized Federal

[1] DOE NEPA regulations do not require preparation of an SA to determine the need for further NEPA review of an action analyzed in an EA. When the adequacy of an EA is unclear, a deliberative process similar to that for SAs may help resolve the uncertainty. However, an SA or SA-like process would not be a substitute for any further NEPA review that might be required.

land for private sector use. In addition to the Proposed Action, the 1997 EA analyzed the No-Action Alternative. Of particular relevance to this SA, the 1997 EA stated that:

> Research activities would occur primarily in an office environment with some low-hazard laboratory-type activities possible (e.g., testing of electronic components). Only DOE-approved and appropriately licensed radioactive sealed sources, materials that are less than Nuclear Facility Category 3 levels of radioactive materials (per DOE-STD-1027-92), and ionizing radiation producing equipment (such as X-ray machines) would be allowed to be used and stored at the Research Park.

Based on the analysis in the 1997 EA, DOE issued a FONSI, which led to the development of the LARP. The potential impacts presented in this SA related to the Samitaur proposal are evaluated against the impacts presented in the 1997 EA in order for DOE to determine whether the analysis in the 1997 EA is sufficient to support a lease modification for the Samitaur proposal, or whether additional NEPA documentation would be required. The 1997 EA included an analysis of the potential impacts of LANL operations on the LARP. This SA considers significant changes in the impact of LANL operations and addresses potential cumulative impacts of the MIPF and LANL operations.

- ***Final Site-Wide Environmental Impact Statement for Continued Operation of Los Alamos National Laboratory, Los Alamos, New Mexico*** (DOE/EIS-0380) (DOE 2008). The potential environmental impacts associated with alternatives for the continued operations at LANL are analyzed in the *Final Site-Wide Environmental Impact Statement for Continued Operation of Los Alamos National Laboratory, Los Alamos, New Mexico* (2008 LANL SWEIS) issued on May 16, 2008, and two Records of Decision published on September 26, 2008 (73 Federal Register [FR] 55833), and July 10, 2009 (73 FR 33232). The 2008 LANL SWEIS included the LARP in the No-Action Alternative. Additionally, the LARP was considered as a site alternative for the construction and operation of the Science Complex Project. The LARP was not selected for the Science Complex Project; instead TA-62 was selected as the site for that facility (73 FR 33232). The 2008 LANL SWEIS is the most current site-wide NEPA documentation for LANL, and thus provides relevant information for inclusion in this SA related to LANL site operations, baseline environmental conditions, and ongoing environmental impacts.

1.4 CHANGES SINCE PREPARATION OF THE 1997 ENVIRONMENTAL ASSESSMENT

This section describes changes in the environment (Section 1.4.1) and changes in DOE's approach to NEPA analyses (Section 1.4.2) that have occurred since the 1997 EA was issued that may be relevant to the analysis in this SA.

1.4.1 Environmental Changes

Environmental changes pertain to changes in the environmental resources that provide the baseline for evaluating environmental impacts or changes in the parameters and assumptions used for the environmental impacts analyses. This section summarizes environmental changes at the LARP, and, where relevant, in the region, since publication of the 2007 EA. Environmental changes are presented based on information contained in the 2008 LANL SWEIS (DOE 2008), *Los Alamos National Laboratory Annual Site Environmental Report 2012* (LANL 2012), and information provided by LANL and the LACDC in response to data calls prepared for this SA. The analysis demonstrates that the baseline natural environment depicted in the 1997 EA has not changed appreciably. Notable changes since the issuance of the 1997 EA are described in the following sections.

1.4.1.1 Land Resources

Figures 1-1 and 1-2 show the location of the LARP. The general area of the LARP is forested or developed for research/industrial type purposes. The LARP is largely undeveloped, bordered by West Jemez Road (State Road 501) and Diamond Drive. Since publication of the 1997 EA, land resources have changed at LARP due to development activities and security considerations. To date, one building (Building One) has been constructed (along with surface parking) on the original 30 acres that was considered appropriate for construction. Approximately 1 acre has been developed on the LARP. The West Road access spur, adjacent to the LANL Wellness Center, from West Jemez Road has been closed and security access portals have been constructed at Diamond Drive and West Jemez road. The LARP was unaffected by the Cerro Grande Fire in 2000 and the Las Conchas Fire in 2011 (LACDC 2014a).

1.4.1.2 Visual Resources

Development of the LARP is consistent with the visual impacts described in the 1997 EA. Such development has not significantly altered the visual character of the LARP, although some natural vegetation was removed due to construction of Building One. Expansive views from the LARP include the Jemez Mountains to the west, Los Alamos Canyon to the north, and peaks of the Sangre de Cristo Mountains to the east. Figure 1-3 depicts Building One at the LARP. The viewshed from the LARP was affected from the Cerro Grande and Los Conchas fires.

1.4.1.3 Noise

Development of the LARP is consistent with the noise impacts described in the 1997 EA. There have been no notable changes to the noise environment at the LARP since the 1997 EA was issued. There are no significant new noise sources at Building One that contribute to background noise levels (LACDC 2014a).

1.4.1.4 Air Quality

As was the case when the 1997 EA was prepared, Los Alamos County is classified as an attainment area for air pollutants identified in the National Ambient Air Quality Standards

(NAAQS) and the New Mexico Ambient Air Quality Standards (NMAAQS) (LANL 2012). The operations in Building One release minimal quantities of nonradioactive air emissions. No radioactive air emissions occur from LARP operations (LACDC 2014a).

1.4.1.5 Water Resources

Water resources associated with the LARP have not changed notably since the 1997 EA was prepared. The 30 acres originally proposed for development has a less than 20% slope and is divided by a natural drainage channel which flows from the west to the east and northward into Los Alamos Canyon. Information related to water rights and water use is contained in Section 1.4.1.11.

1.4.1.6 Geology and Soils

Geology was considered in the 1997 EA, but dismissed from detailed review because all facilities at the LARP would be designed and constructed to meet applicable code requirements related to geological hazards. Since publication of the 1997 EA, a study related to seismic hazards at LANL has been conducted (LANL 2007). The conclusion in the 1997 EA, that all facilities at the LARP would be designed and constructed to meet applicable code requirements, remains unchanged. Soil resources have not changed notably since the 1997 EA was prepared. No Solid Waste Management Unit (SWMU) or Potential Release Sites (PRS) were encountered in constructing Building One (LACDC 2014a).

1.4.1.7 Ecological Resources

Since the 1997 EA was prepared, approximately 1 acre has been developed on the LARP. Construction of Building One (along with surface parking) required the removal of very few trees and ground cover. Consequently, there was no notable change to ecological resources. The 1997 EA identified three species that are Federally listed as threatened or endangered that may potentially use the LARP: the bald eagle, the peregrine falcon and the Mexican spotted owl. The bald eagle was delisted in 2007, but is still protected under the *Bald and Golden Eagle Protection Act*; the peregrine falcon was delisted in 1999 and is protected under the *Migratory Bird Treaty Act.*

After the 1997 EA was prepared, a Threatened and Endangered Species Habitat Management Plan (HMP) was instituted at LANL (LANL 2000). The HMP is an agreement between the DOE and the U.S. Fish and Wildlife Service (USFWS) on how Federally listed threatened and endangered species and their habitats are managed at LANL and this document is updated as needed through consultations with the USFWS. The HMP is designed to be a comprehensive landscape-scale management plan that balances the current operations and future development needs of LANL with the habitat requirements of threatened and endangered (T & E) species. Suitable habitats for these T & E species, along with a protective buffer area surrounding the habitats, have been designated as areas of environmental interest (AEIs). In general, an AEI consists of a core area that contains important breeding or wintering habitat for a specific species and a buffer area around the core area. The buffer protects the core area from disturbances that would degrade its value to the species.

Two recent changes to the HMP directly affect areas in or near the LARP. The Mexican spotted owl habitat was re-delineated in 2011 (Hathcock and Keller 2011) and, as a result, the LARP no longer occurs within core or buffer habitat for this species. In September 2013, the Jemez Mountains salamander was listed as an endangered species by the USFWS, and, in November 2013, critical habitat for the Jemez Mountains salamander was identified and included Los Alamos County (78 FR 69569). A site plan for the Jemez Mountains salamander was developed in 2013 and received concurrence from the USFWS subsequent to the Federal listing (Hathcock 2013). There are several locations at LANL now protected as core habitat for the Jemez Mountains salamander under the HMP and the northern extent of the LARP boundary is adjacent to or slightly inside the core habitat for Los Alamos Canyon. Development or disturbance of core habitat for the Jemez Mountains salamander is strictly prohibited. (LANL 2014a).

1.4.1.8 Cultural and Paleontological Resources

In support of the 1997 EA, LANL conducted field surveys for cultural resources at the LARP. As a result of these surveys, two prehistoric Archaic sites and one historic site (a portion of a wagon road) were identified on the LARP. No cultural resources were encountered during construction associated with Building One (and surface parking) (LACDC 2014a).

1.4.1.9 Socioeconomics

Although the socioeconomic characteristics of the region have changed since publication of the 1997 EA, many of the changes have been minor. For example, the 1995 population in Los Alamos County was 18,604, compared to 17,798 in 2013 (http://quickfacts.census.gov/qfd/states/35/35028.html). The 1997 EA reported that approximately 3,550 students were enrolled in Los Alamos public schools. In 2010, approximately 3,362 students were enrolled in Los Alamos public schools. The more notable changes have been associated with employment. In 1996, LANL employed approximately 12,412 persons; in 2014, 10,199 people were employed at LANL (http://www.lanl.gov/about/facts-figures/index.php). In 2011, unemployment in the region was 7.8%, up from 5.8% presented in the 1997 EA (USCB 2010). Approximately 200 persons are currently employed at the LARP (LACDC 2014a).

1.4.1.10 Environmental Justice

Under Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, Federal agencies are responsible for identifying and addressing the possibility of disproportionately high and adverse human health or environmental effects of agency programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions. Minority populations refer to persons of any race self-designated as Asian, Black, Native American, or Hispanic. Low-income populations refer to households with incomes below the Federal poverty thresholds.

Based on the 1997 EA, about 54% of the population within a 50-mile radius of the LARP was of minority status. In terms of low-income populations, approximately 15% of the households had annual incomes below the Federal poverty level. Minority and low-income data have changed

since the 1997 EA was published. Currently, about 59.4% of the population within a 50-mile radius of the LARP is of minority status and 17.2% of the households had annual incomes below the Federal poverty level (USCB 2010).

1.4.1.11 Utilities

Utility demands and capacities in the region have changed since the 1997 EA was published. Table 1-1 presents the more recent utility data. Utilities used at the LARP are minimal. In 2012, LARP used approximately 3.5 megawatt-hours (MWh) of electricity and approximately 0.9 millions of gallons of water (LACDC 2014a). LARP utilities are not part of the LANL current site requirement and/or LANL allotments.

Table 1-1. Current Utility Usage and Capacity

Resource	System Capacity	LARP Use	Total Available System Capacity
Energy (MWh/year)	1,226,000 [a]	3.5	490,100
Water right (million gallons per year)	System water right total: 1,807	0.9	Total: 147.3

SOURCE: DOE 2011, LANL 2014b, LACDC 2014a.

a. Capacity values are for the entire service area, which includes LANL, other Los Alamos County users, and the LARP.

1.4.1.12 Human Health

The 1997 EA presented data associated with potential radiological exposures from both LANL operations and background sources. There have been no radiological impacts from operations at the LARP to offsite public receptors or to LANL workers.

1.4.1.13 Waste Management

Information regarding wastes is updated as follows. Sanitary wastewater from the LARP is processed at the LANL Sanitary Wastewater System (SWWS) Plant located at TA-46. The SWWS Plant is capable of processing approximately 600,000 gallons per day (DOE 2008b). In 2009, the plant processed about 85.3 million gallons of wastewater (DOE 2011). Of this amount, less than 1% of this was from operations at the LARP. No radioactive wastes or hazardous wastes are generated at the LARP (LACDC 2014a).

1.4.2 Changes in DOE's Approach to NEPA Analyses

1.4.2.1 Intentional Destructive Acts

When the 1997 EA was prepared, DOE NEPA documents did not normally include an analysis of intentional destructive acts. Following the terrorist attacks of September 11, 2001, DOE/NNSA has implemented measures to minimize the risk and consequences of potential

terrorist attacks on its facilities and now, consistent with CEQ guidance, NEPA documents also analyze the potential impacts of intentional destructive acts.

It is not possible to predict whether intentional attacks would occur at any site, or the nature or types of such attacks. Nevertheless, DOE/NNSA has evaluated security scenarios involving malevolent, terrorist, or other intentionally destructive acts to assess potential vulnerabilities and identify improvements to security procedures and response measures. Security at its facilities is a critical priority for DOE/NNSA. Therefore, DOE/NNSA continues to identify and implement measures to defend and deter attacks. DOE/NNSA maintains a system of regulations, orders, programs, guidance, and training that form the basis for maintaining, updating, and testing site security to preclude and mitigate any postulated terrorist actions.

It is a remote possibility that an intentional destructive act would successfully breach the physical and other safeguards and result in the release of radioactive or non-radioactive materials from this or any other facility at the LARP. Intentional destructive acts were not addressed for the LARP in the 1997 EA or for MIPF, so a comparison is not possible. While a comparison is not possible, insight into the potential consequences of such an intentional destructive act can be gained by consideration of the impacts from accidents. The release of radioactive and non-radioactive materials could be caused by intentional malevolent acts by saboteurs or terrorists, rather than accidental causes, and the resulting radiological releases and consequences to workers and the public would be similar, regardless of the cause of the initiating event. The assumptions used in the radiological and non-radiological release accidents analyzed in the 1997 EA and for the MIPF were inherently conservative (i.e., biased towards overstating impacts), so the consequences of an intentional destructive act are expected to be no greater than those reported for accidents (Section 3.2). Since there would be no observable health effects from the accidents, there would also be no observable health effects for intentional destructive acts associated with the LARP or the MIPF.

It is a remote possibility that an intentional destructive act would be associated with transportation, but again the consequences are expected to be similar to those addressed in the Transportation section (Section 3.2) and are not considered significant.

1.4.2.2 Dose Conversion Factor

In converting doses to potential cancer fatalities, when the 1997 EA was prepared, DOE used a factor of 5×10^{-4} fatality per rem for the public, and a factor of 4×10^{-4} fatality per rem for workers[2]. The value for workers was lower due to the absence of children and the elderly, who were considered to be more radiosensitive. Since publication of the 1997 EA, DOE Guidance (DOE 2003a) recommends that agencies use a conversion guidance factor of 6×10^{-4} fatality per rem for both workers and members of the public. The DOE Guidance recommends use of factors developed by the Interagency Steering Committee on Radiation Standards (ISCORS 2002). Using the higher conversion factor would increase the potential radiological impacts presented in the 1997 EA by 50% for workers and 20% for the public. Section 3.2 presents the results of this

[2] The United States unit of measurement for radiation dose is the rem (Roentgen Equivalent Man). A dose is the amount of radiation energy absorbed by the human body

change, along with the results of other changes that have occurred since publication of the 1997 EA.

1.4.2.3 Greenhouse Gas Analysis

In February 2010, the CEQ provided a draft guidance memorandum for public consideration and comment on the ways in which Federal agencies can improve their consideration of the effects of greenhouse gas (GHG) emissions and climate change in their evaluation of proposals for Federal actions under NEPA (CEQ 2010). That draft guidance is intended to help explain how agencies of the Federal government should analyze the environmental effects of GHG emissions and climate change when they describe the environmental effects of a proposed agency action in accordance with NEPA. Where appropriate, DOE/NNSA NEPA documents now consider the potential impacts associated with GHG emissions. Under the CEQ draft guidance, if a proposed action would be reasonably anticipated to cause direct emissions[3] of 25,000 metric tons or more of carbon dioxide-equivalent (CO_2-equivalent) GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public. For long-term actions that have annual direct emissions of less than 25,000 metric tons of CO_2-equivalent, CEQ encourages Federal agencies to consider whether the action's long-term emissions should receive similar analysis. CEQ does not propose this as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs. The MIPF would generate an estimated 23,305 metric tons of CO_2-equivalent emissions.

[3] Direct GHG emissions are from sources that are owned or controlled by the reporting entity. This can include emissions from fossil fuels burned on-site, emissions from agency-owned or agency-leased vehicles, and other direct sources. Indirect GHG emissions result from the generation of electricity, heat, or steam generated off-site but purchased by the reporting agency. Indirect GHG emissions also result from employee travel and commuting.

2.0 DESCRIPTION OF THE SAMITAUR PROPOSAL

2.1 OVERVIEW

Samitaur proposes to construct and operate an accelerator-based radioisotope production facility, initially emphasizing the production of strontium-82 (Sr-82) and germanium-68 (Ge-68). These two isotopes are key to Positron Emission Tomography (PET) Scanning, particularly heart perfusion imaging. The technology to package Sr-82 inside a generator was developed at LANL in 1979. Since 2004, the Isotope Production Facility (IPF) at the Los Alamos Neutron Science Center (LANSCE), coupled with TA-48 hot cells, has established the methods for high volume production of Sr-82 and, by coordinating with other government owned accelerator operating schedules, has delivered a year-round, worldwide supply. However, the demand has grown dramatically during the last five years so that the market now has a very limited supply. Further distribution of the technology requires a new accelerator facility and commercialization (Samitaur 2014a).

The project would serve the following national nuclear medicine mission needs:

- It would have full-time dedicated Sr-82 production with sufficient capacity to support very large expansion of the myocardial perfusion PET imaging worldwide.
- It would have full-time dedicated Ge-68 production with sufficient capacity to support PET imaging centers worldwide.
- It would be capable of making new radioisotope products that are not commercially available because such production requires protons with greater than 30 million electric volts (MeV) energy. (Samitaur 2014a)

The proposed MIPF would have two levels (upper and lower) and would contain the following functions:

- **A Radiofrequency Linear Accelerator**. The accelerator would be located on the lower level in a cast-in-place concrete structure. Walls that abut soil/volcanic tuff would be designed according to the soil pressure, including seismic loading. The approximate thickness would be 12 inches. Walls with exposed exterior and the lower level roof would serve as radiation shields so that the exterior and the upper levels can be safely occupied. The estimated thickness of the concrete shielding is 8-10 feet. The maximum beam energy of the protons would be approximately 90 MeV, which is above the minimum beam energy (50 MeV) required for Sr-82 production. The maximum beam current would be 1.6 milli-amps.
- **Target Irradiation Stations**. Four target irradiation stations would also be located on the lower level. The maximum beam current delivered to a single target irradiation station would be approximately 400 micro-amps, making the maximum target power approximately 30 kilowatts (kW). The beam would be delivered to the target stations through evacuated beam lines. The targets may be solid metal plates or they may be

sealed (welded) metal canisters containing the target materials. The area of the lower level is estimated to be 15,000 square feet.

- **Target Exchange Hot Cells**. The upper level would have four target exchange hot cells located directly above the lower level target chambers. The hot cell walls and ceiling would be cast concrete approximately 36 inches thick. Each hot cell would have an oil-filled lead glass window and a pair of manipulators. The target exchange hot cells would be connected to the target chambers by water-filled vertical pipes that would be about 15 feet long. The water would provide neutron shielding. Each target exchange hot cell would contain a remotely operated target changer that moves targets between the target chamber and the hot cell, through the water-filled connecting pipe. The finished product may be solutions, may be bound on ion exchange resins (such as generators), or may be bio-molecules labeled with radioisotopes (Samitaur 2014a).

- **Chemistry Hot Cells**. The backs of the target exchange hot cells would abut a transfer corridor. Six (6) chemistry hot cells would be connected to the other side of the transfer corridor. The transfer corridor would contain a "train" that would transfer materials between the hot cells. It would also serve as the personnel access to the hot cells. The chemistry hot cells would be cast concrete approximately 36 inches thick.

- **Laboratories.** Radiochemistry research and development laboratories, a product and waste assay lab, and a radioactive materials packaging/release room would be located adjacent to the chemistry hot cells on the upper level. There would also be a room for storing and repairing items that have low-level radioactive contamination. These rooms and the chemistry hot cell working area would form a controlled access radiation worker area. Entry into the area would be through a change room and radiation survey portal.

- **Shipping Room**. The shipping room would be adjacent to the packaging/release room. There would be a container passage door that could be opened to pass released shipping containers into the shipping room. The shipping room would have an overhead door and loading dock so that shipments could be loaded onto trucks.

- **Miscellaneous Facilities.** On the upper level, there would be three laboratories outside the controlled access radiation worker area. One would be used for target manufacturing and for making up the non-radioactive chemistry solutions that would be used in the production radiochemistry. Two others would be for general purpose use. Facility operations staff, the accelerator and irradiation control station, and servers for the facility's data management would be located in room adjacent to the target extraction hot cells and in close proximity to the chemistry hot cells and controlled areas that will be monitored with closed circuit television. Offices, conference rooms, and bathrooms would be on the perimeter. Visitor entry would be into a lobby where there would be a visitor control desk. The area of the upper level is estimated to be 30,000 square feet.

- **Open Area Above Accelerator**. The large open area above the accelerator and the beam lines would house electric power distribution, accelerator and beam line power supplies, cooling water skids, heating, ventilation, and cooling (HVAC) and high-efficiency particulate air (HEPA) filter skids, and stack monitoring instrumentation. This area would also have a floor plug and a hoist so that lower level equipment could be replaced if

needed. There would also be a freight elevator for moving smaller items between the floors.

- **Radioactive waste management**. All waste would be shipped to offsite low-level waste (LLW) facilities in solid form. Liquid waste would be cemented. Waste management would include temporary storage of less than three months to allow decay of short-lived isotopes and to stage for shipping (Samitaur 2014a).

2.2 DESIGN, CONSTRUCTION, AND OPERATION OF THE MEDICAL ISOTOPE PRODUCTION FACILITY

The highest priority in design, construction, and operation would be to create an environment where workers and the public would be safe. Radiation shielding, remote-handling equipment, a closed-loop target-cooling system, and other design features would ensure the MIPF is operationally safe and compliant with all environmental rules and regulations. Moreover, contingency plans would ensure that, if anything were to go wrong, safety would not be compromised. For example, multiple safety systems would be in place to shut off the proton beam if any facility or irradiation parameters vary from expected values. If an upset condition were detected, the beam would be shut off instantaneously (Samitaur 2014a).

The 1997 EA stated that "Only DOE approved and appropriately licensed radioactive sealed sources, containing materials that are less than Nuclear Facility Category 3 levels of radioactive materials (per DOE-STD-1027-92), and ionizing radiation producing equipment (such as X-ray machines) would be allowed to be used and stored at the Research Park." The MIPF would not exceed the nuclear facility Hazard Category 3 thresholds given in DOE STD 1027 for in-process and stored radioactive materials. Samitaur has prepared a detailed report on the radionuclides that would be present at the MIPF (Samitaur 2014b). That report compares the maximum quantities of radionuclides that would be present at the MIPF against the DOE-STD 1027 Hazard Category 3 thresholds. All of the individual radionuclide inventories would be less than 30% of the threshold. The sum of the threshold fractions would be 93.9%. Thus, the MIPF inventory would be less than the DOE-STD-1027 criteria for a Hazard Category 3 nuclear facility (Samitaur 2014b).

NRC LICENSING OF THE MIPF

Should the Samitaur proposal go forth the NRC would license the MIPF. Prior to issuing an operating license, the NRC would be required to comply with NRC NEPA implementing regulations (10 CFR 51). The NRC would determine the appropriate level of NEPA review and documentation required.

The MIPF would operate under a Nuclear Regulatory Commission (NRC) Type A Specific License of Broad Scope for Byproduct Material, per 10 CFR Part 33 and 10 CFR Part 30. New Mexico is an agreement state.[4] The licensing process would include further NEPA review. In addition, there may be other future regulatory pre-construction and other permits required depending on specifics of the MIPF design. Prior to construction and operation, Samitaur would be responsible, independent of DOE/NNSA and LANL, for obtaining all applicable permits and licenses for the MIPF (Samitaur 2014a).

[4] An agreement state has authority to regulate radioactive materials (10 CFR Part 30).

Design, construction, and startup would occur over five years and involve a peak construction workforce of approximately 200. The project site would be approximately 5 acres. Conventional construction techniques would be used, including excavation and grading to prepare for building footings and foundations, construction material staging, and surface parking areas. Standard heavy duty construction equipment such as bulldozers, backhoes, and concrete trucks would be required. Excavation would potentially generate up to 125,000 cubic feet of soil/rock waste that could potentially be reused as construction fill for other construction or grading purposes, depending on the material properties. If not reused, it would be disposed of offsite. Temporary utilities and access roads would be provided to support construction activities until permanent utilities and access roads would be brought on-line (Samitaur 2014c). Prior to construction a National Pollutant Discharge Elimination System (NPDES) General Construction Permit would be obtained.

The MIPF would include:

- A below grade level housing the accelerator, beam lines, and target stations.
- An above ground level containing power supplies, hot cells, laboratories, and offices.
- An exhaust stack with an expected height of 75 feet.
- A cooling tower.
- Surface parking to support operations (Samitaur 2014a).

The exact location within the LARP would depend on evaluation of the structure. The accelerator and target stations would be below grade so as to utilize earthen radiation shielding (Samitaur 2014a). Resource requirements and other data associated with construction are shown in Table 2-1.

Table 2-1. Construction Data for the MIPF

Requirement	Data/Consumption
Land disturbance (acres)	5
Duration (years)	5
Peak workforce (persons)	200
Electrical energy (megawatt hour [MWh])	minimal[a]
Water (gallons/year)	minimal[b]
Excavation quantities (cubic feet)	125,000

SOURCE: Samitaur 2014c

a. Diesel/gas-powered construction equipment used predominantly during site preparation. Minimal electricity required for internal construction.

b. Water use would be for dust suppression and should not exceed 2-6 water tankers per day for site excavation activities.

The MIPF would be expected to nominally operate 24 hours per day, 365 days per year, over a design life of 20+ years. For purposes of this SA, a more conservative operating life of 30 years is considered, which bounds operating impacts. The estimated accelerator downtime is 330 hours per year (Samitaur 2014c). A description of typical operations follows.

During irradiation, the beam would pass from evacuated beam lines through metal windows into the water-filled target chambers. The water would circulate through a heat exchange skid that would include a deionizer that continuously strips radioactive isotopes from the water. A typical irradiation process would be 12 days. During the irradiation process, heat would be generated, which would be dissipated by using cooling water loops and evaporative cooling towers (Samitaur 2014b). A radiation monitor on the secondary cooling loop would be used to detect any leaks from the primary (high level) loop. Cooling water discharged from the final cooling loop (a tertiary loop) would go to the cooling towers and would be non-contact treated cooling water. It would not pick up radioactive material nor be activated. The effluent from the cooling towers would contain minerals normal in drinking water plus commercially-available anti-corrosion and scale inhibitor additives. Samitaur has not determined the cooling tower design specifications (Samitaur 2014b).

Following irradiation, the irradiated targets would undergo chemical processing in hot cells. The hot cells would be heavily shielded, remotely operated enclosures for the safe handling of high dose-rate radioactive substances. Inside the hot cell, Sr-82 or Ge-68 would be chemically separated from other target materials and purified. The isotopes would then be put in Type A shipping containers. A single Type A shipping container would have an estimated radioactivity content of 0.6 curies. It is expected that there would be two shipments per week on average. These would be via a small truck from the LARP to the Albuquerque airport, where the containers would be transferred to an air carrier licensed for radioactive materials freight. Medical isotopes such as Sr-82 and Ge-68 are normally transported by regular carriers (e.g., Federal Express) to their destination (Samitaur 2014c).

The only normal operating radioactive emissions from the MIPF would be airborne gasses and particles emitted from the top of a fixed stack (Samitaur 2014b).

The radioactive gasses would be Krypton-85 (Kr-85), Nitrogen-13 (N-13), and Oxygen-15 (O-15). Kr-85 would be released into hot cell interior atmospheres when the Rubidium (Rb) target canisters are opened. It would mix uniformly in the hot cell volume. The air/Kr-85 mixture would be carried to the stack by the hot cell exhaust system (Samitaur 2014b).

On the way, it would pass through a two-stage HEPA filter. Each stage of the HEPA filter would remove 99.97% of the radioactive particles. Any particles not captured would mix with the facility laboratory exhaust as it enters the stack (Samitaur 2014b).

N-13 and O-15 would be made in the target cooling water where it would be dissolved. The cooling water system would consist of pipes and vessels. It would be an atmospheric pressure system, so it would have a vent. The half-life of N-13 is 10 minutes and the half-life of O-15 is 2 minutes. As a result of these short half-lives, it is not expected that a detectable amount of either gas would reach the stack (Samitaur 2014b).

The major source of radioactive particles would be chemistry processes that evaporate solution containing dissolved target material to dryness. The particles would evolve into hot cell interior atmospheres. They would mix uniformly in the hot cell volume. The air/particles mixture would be carried to the stack by the hot cell exhaust system. On the way, it would pass through the two-HEPA filter. The filtered exhaust would mix with the facility laboratory exhaust as it enters the stack (Samitaur 2014b).

LLW would be generated from consumables used in the process, personal protective equipment, and miscellaneous materials removed from the hot cells. Less than approximately 25 drums of solidified LLW would be generated per year. LLW would be disposed of at an off-site licensed disposal facility. Minimal quantities of hazardous materials would be generated. Hazardous waste would be accumulated in a 90-day storage area prior to transfer to a Resource Conservation and Recovery Act (RCRA)-permitted treatment, storage, and disposal facility. There would be no industrial discharges to the city sewer, only sanitary waste (Samitaur 2014c).

Samitaur expects a workforce of up to 100 people in production activities and 50 people in research and development. Most of these employees would work in areas with no, or very low, potential for radiation exposure. Some workers would be classified as radiation workers and subject to a radiation dosimetry program in accordance with the NRC/agreement state license. These workers' job duties would be primarily in the accelerator and chemical processing areas, operating the accelerators, retrieving target assemblies, processing materials through the hot cells, packaging the medical isotope product for shipment, and managing wastes (Samitaur 2014c).

The MIPF would require an electicity supply of approximately 43,800 MWh. This would require installation of new distribution power lines and higher capacity substations both within the boundaries of the LARP. Cooling water requirements would be approximately 18,500,000 gallons per year. This would require additional cooling water supplies at the LARP (Samitaur 2014c). Operational data for the MIPF is presented in Table 2-2.

Table 2-2. Operational Data for the MIPF

Requirement	Data/Consumption
Workforce (persons)	100 Production 50 Research and Development
Electrical energy (MWh/year)	43,800
Water use (gallons/year)	18,500,000
Average worker dose (millirem [mrem]/year)	As Low As Reasonably Achievable (ALARA) < 5,000
Annual radioactive emissions (curies/year) • Sr-82 • Sr-83 • Sr-85 • Rb-82 • Rb-83	 • 5.29×10^{-5} • 6.32×10^{-6} • 5.63×10^{-6} • 5.29×10^{-5} • 1.22×10^{-5}
LLW (drums/year)	<25
Hazardous waste	minimal
Liquid sanitary waste (gallons/day)	1,960
Solid waste (pounds/day)	150

SOURCE: Samitaur 2014c

3.0 COMPARISON OF IMPACTS

3.1 INTRODUCTION

NNSA conducted an initial screening review to determine whether there are new circumstances or information relevant to environmental concerns or impacts indicating whether the analysis in the 1997 EA is sufficient to support a lease modification for the Samitaur proposal, or whether additional NEPA documentation would be required. This review was intended to identify whether associated levels of activity or potential for impact on a particular resource area, either individually or collectively, warranted additional analysis. No further analysis was to be conducted for those resource areas where it was evident from the initial screening that associated impacts would be minimal and bounded by the impacts identified in the 1997 EA.

To the extent other resource areas required further analysis to determine (1) whether potential impacts on the areas were outside the envelope of environmental consequences identified in the 1997 EA, and (2) if so, whether the impacts could be considered significant within the context of NEPA (40 CFR 1508.27), which would require preparation of a new NEPA document. The "sliding-scale" approach was used such that analyses for the resource areas are in proportion to the potential significance of the impacts.

3.2 ENVIRONMENTAL IMPACTS

This section presents: (1) a summary of the environmental impacts from the original NEPA document (e.g., the 1997 EA); (2) the estimate of impacts from the Samitaur proposal; and (3) an analysis of whether the estimate of impacts from the Samitaur proposal represents significant new circumstances or information relevant to environmental concerns. Table 3-1 presents this information in a comparative fashion for each resource area. The middle column of Table 3-1 presents the impacts previously identified in the 1997 EA; the last column presents the estimate of impacts from the Samitaur proposal. Below these columns, for each resource analyzed, is a brief narrative comparison. For those resources in which impacts have changed, Section 3.2.1 provides a more detailed analysis of these changes. Together, Table 3-1 and Section 3.2.1 document the results of the impact assessment process (as depicted in Figure 3-1) used in this SA.

Table 3-1. Comparative Analysis of Environmental Impacts

Resource Area	Impacts Analyzed in the 1997 EA	Impacts from the Samitaur Proposal
Land Resources	Development of the LARP would disturb about 30 acres of land. Only DOE approved and appropriately licensed radioactive sealed sources, containing materials that are less than Nuclear Facility Category 3 levels of radioactive materials (per DOE-STD-1027-92), would be allowed to be used and stored at the LARP.	The MIPF would disturb about 5 acres of land.
Comparison to the 1997 EA: The impacts from the MIPF would be well within the land disturbance impacts presented in the 1997 EA.		

Resource Area	Impacts Analyzed in the 1997 EA	Impacts from the Samitaur Proposal
Visual Resources	Development would alter the visual character of the western area of the LARP by removing natural vegetation and interspersing office and commercial buildings. Three- to five-story buildings would be constructed.	The MIPF would alter the visual character of the western area of the LARP by removing natural vegetation and interspersing office and commercial buildings. The building would be less than three to five stories in height, with the exception of an exhaust stack, which could be 75 feet high.
Comparison to the 1997 EA: The impacts from the MIPF would be similar to the impacts presented in the 1997 EA with the exception that an exhaust stack could be slightly higher (approximately 25 feet) than the 1997 EA estimated. Even with this difference, the visual impacts from the MIPF would not be notably different than the visual impacts presented in the 1997 EA.		
Noise	Construction activities would require the use of heavy equipment for clearing, leveling, and construction. Equipment such as front-end loaders and backhoes would produce noise levels of 73 to 94 A-weighted decibels (dBA) at 50 feet from the work site. Vehicular traffic is not expected to increase the present noise level from existing vehicular traffic.	The MIPF would require the same types of heavy equipment as are presented in the 1997 EA, with similar noise impacts. Vehicular traffic impacts on noise would be similar to those presented in the 1997 EA. Cooling tower noise levels are estimated to be 60 dBA at 50 feet. There would be no noises associated with operations that would adversely impact sensitive noise receptors.
Comparison to the 1997 EA: There would not be notable changes in impacts to noise resources at the LARP from the MIPF compared to those impacts presented in the 1997 EA.		
Air Quality (non-radiological)	The construction of and subsequent operation of businesses within the LARP would have the potential of releasing regulated nonradioactive air emissions. The 1997 EA presents the nonradioactive releases associated with disturbing approximately 700,000 square feet of land for new facilities; constructing 1,400 parking places; operations in 300,000 square feet of facilities; and worker's motor vehicles. No air quality standards are expected to be exceeded.	The construction of the MIPF within the LARP would have the potential of releasing regulated nonradioactive air emissions. Construction activities would disturb approximately 5 acres of land for new facilities and constructing 150 parking places. With respect to operations, direct releases to the air from the MIPF would be associated with building boilers, water heaters, and emergency power generators. No air quality standards are expected to be exceeded.
Comparison to the 1997 EA: Because there would be less construction associated with the MIPF, releases would be less than those presented in the 1997 EA. With respect to operations, direct releases to the air from the MIPF would be less than those presented in the 1997 EA due to the fact that the facility would require fewer building boilers, water heaters, and emergency power generators, and would involve fewer workers and subsequently less vehicle emissions. With respect to emissions associated with providing electricity to support the MIPF, those impacts are presented under "Greenhouse Gases."		
Air Quality (radiological)	Reported as the potential for trace radioactive emissions.	No radioactive air emissions would be released or expected during the construction phase of the MIPF. Once operational, the MIPF could release small quantities of airborne gasses and particles. Approximately 1.3×10^{-4} curies would be released annually to the air.
Comparison to the 1997 EA: The release of 1.3×10^{-4} curies of radioactivity annually to the air from the MIPF would be consistent with the impact presented in the 1997 EA (e.g., "trace amounts of radioactive air emissions"). The 1997 EA did not quantify the potential radioactive air emissions because details of the exact future use by		

Resource Area	Impacts Analyzed in the 1997 EA	Impacts from the Samitaur Proposal
tenants of the LARP were unknown at the time the 1997 EA was prepared. The potential impacts to humans from these radioactive air emissions are presented in this table under "Public and Occupational Health and Safety – Normal Operations."		
Water Resources	The NPDES Stormwater Pollution Prevention Plan (SWPPP) would identify all site surface water drainage plans and the best management practices (BMPs) that would be implemented to minimize impacts to water resources. A maximum of about 30 acres would be disturbed during construction of the LARP. After construction, the developed area would consist of approximately 14.2 acres of rooftops, asphalt, and concrete surfaces. Approximately 27 acre-feet of storm-water could be generated annually. Surface water discharges would be controlled using BMPs and no adverse effects to water resources are expected.	Construction of the MIPF would comply with the existing SWPPP NPDES permit. A maximum of about 5 acres would be disturbed during construction. A NPDES General Construction Permit would be obtained prior to construction. After construction, the developed area would consist of approximately 3 acres of rooftops, asphalt, and concrete surfaces. Approximately 6 acre-feet of stormwater could be generated annually. Cooling water discharged would be non-contact treated cooling water. It would not pick up radioactive material nor be activated. The blowdown water from the cooling towers would contain minerals normal in drinking water plus commercially-available anti-corrosion and scale inhibitor additives. The cooling tower design specifications have not been determined.
Comparison to the 1997 EA: Construction and operation of the MIPF impacts are bounded by the analysis presented in the 1997 EA. Impacts associated with water use are addressed in this table under "Utilities."		
Geology and Soils	Geology was considered in the 1997 EA, but dismissed from detailed review because all facilities at the LARP would be designed and constructed to meet applicable code requirements related to geological hazards.	All facilities would be designed and constructed to meet applicable code requirements related to geological hazards. Excavation would potentially generate up to 125,000 cubic feet of soil/rock waste that may be disposed of offsite if not used for onsite grading purposes.
Comparison to the 1997 EA: The conclusion in the 1997 EA, that all facilities at the LARP would be designed and constructed to meet applicable code requirements, remains unchanged and is also valid for the MIPF. A more recent study related to seismic hazards at LANL (LANL 2007) does not change this conclusion. Soil resources have not changed notably since the 1997 EA was prepared. Excavation impacts, while larger for the MIPF than for the facilities addressed in the 1997 EA, would not change the conclusions from the 1997 EA process.		
Ecological Resources	Approximately 30 acres (one-half of the land for the LARP) would be developed. This would result in the removal of trees and ground cover, which would be replaced by buildings and parking lots. The land proposed for the LARP supports suitable nesting, foraging, and perching habitat for a variety of bird species, as well as foraging and wintering habitat for large mammals. The affected area is less than 0.25% of the vegetated landscape at LANL. No adverse effects on Federally-listed threatened or endangered species was expected.	Approximately 5 acres (one-sixth of the land for the LARP) would be developed for the MIPF. The land would have the potential to support suitable nesting, foraging, and perching habitat for a variety of bird species, as well as foraging and wintering habitat for large mammals. The project footprint would not disturb land in or directly adjacent to core habitat for the Jemez Mountains salamander on the north side of the LARP, thus no adverse effects on Federally-listed threatened or endangered species would be expected.

Resource Area	Impacts Analyzed in the 1997 EA	Impacts from the Samitaur Proposal
Comparison to the 1997 EA: The MIPF would disturb less acreage than the 1997 EA estimated, and, thus, would have less potential to impact lands that support suitable nesting, foraging, and perching habitat. No adverse effects on Federally-listed threatened or endangered species would be expected. The activities at the LARP would have no impact on the Jemez Mountains salamander, which was designated as an endangered species by the USFWS in September 2013, because the development would not occur in the designated core habitat, nor would it affect the core habitat.		
Cultural and Paleontological Resources	Two Archaic sites at the LARP were eligible for the National Register of Historic Places (NRHP). The New Mexico State Historic Preservation Officer (SHPO) concurred with this determination. Prior to allowing any disturbance of the two NRHP-eligible sites, LANL and DOE would prepare and implement a data recovery plan under a Memorandum of Agreement with the SHPO. The data recovery plan requires excavation of the sites as the acceptable method for mitigating any adverse effects.	Excavation activities associated with the MIPF would have the potential to impact cultural and paleontological resources as presented in the 1997 EA. Potential impacts would be the same as presented in the 1997 EA.
Comparison to the 1997 EA: Potential impacts would be the same as presented in the 1997 EA.		
Socioeconomics	Approximately 1,500 direct jobs and 2,565 indirect jobs would be created. The total number of additional housing units needed would be about 1,610 for the County and 2,455 for the remainder of the region of influence.	Approximately 150 direct jobs and 256 indirect jobs would be created (using the same multiplier as was used in the 1997 EA). The total number of additional housing units needed would be about 160 for the County and 245 for the remainder of the region of influence.
Comparison to the 1997 EA: Impacts to socioeconomic resources from the MIPF would be less than the analysis presented in the 1997 EA.		
Environmental Justice	Within a 50-mile radius of the LARP, about 54% of the population is of minority status. In terms of low-income populations, approximately 15% of the households had annual incomes below the poverty level. No environmental justice impacts were identified.	Based on 2010 Census data, within a 50-mile radius of the LARP, about 59.4% of the population is of minority status. In terms of low-income populations, approximately 17.2% of the households had annual incomes below the poverty level. No environmental justice impacts are expected.
Comparison to the 1997 EA: Since the issuance of the 1997 EA, the percentage of minority and low-income populations surrounding the LARP has increased slightly. However, the projected human health risks from normal operations and facility accidents would not be substantially different as a result of the MIPF, compared to the analyses presented in the 1997 EA (See "Public and Occupational Health and Safety – Normal Operations" and "Public and Occupational Health and Safety – Facility Accidents" below.). Implementation of the MIPF would not result in any disproportionately high and adverse human health or environmental effects to minority and low-income persons.		
Utilities	The LARP could use an additional 4,250 MWh of electricity per year, with a peak usage of 1.3 MW. This equates to a 4.88% increase in electrical use and a 1.23% increase in peak power use. Water use would be 17,055,000 gallons per year, which would be a 1.76% increase over current County usage. Natural gas	The MIPF could use an additional 43,800 MWh of electricity per year. This would require installation of new local distribution power lines and higher capacity substations both within the boundaries of the LARP. Water use would be 18,500,000 gallons per year. Natural gas usage would be minimal.

Resource Area	Impacts Analyzed in the 1997 EA	Impacts from the Samitaur Proposal
	usage would be 38,646 million Btu per year, which would be a 3.65% increase over current County usage.	
Comparison to the 1997 EA: The electrical requirement of the MIPF would exceed the estimates in the 1997 EA, and could use approximately 8.9% of the available capacity of the electrical system. The water requirement of the MIPF (18,500,000 gallons/year) would exceed the water use analyzed in the 1997 EA (17,055,000 gallons/year). This water use requirement represents 12.5% of the water right.		
Public and Occupational Health and Safety – Normal Operations		
Reported Maximally Exposed Individual (MEI) Dose	Reported as the potential for trace radioactive emissions.	4.71×10^{-6} mrem/year
Calculated Latent Cancer Fatality (LCF) Risk from 30 Years of Operation (per Section 1.4.2.2)	Not available	8×10^{-11}
Comparison to the 1997 EA: Radiological doses for MIPF routine operations are estimated to be 4.71×10^{-6} mrem/year (Samitaur 2014b), which corresponds to a latent cancer fatality (LCF) risk of 8×10^{-11}. The 1997 EA does not estimate the releases or resulting dose from LARP operations and merely states that "[a]n operating laboratory at the Research Park could potentially release trace amounts of radioactive air emissions." Neither the MEI nor the population doses were calculated for the LARP in the 1997 EA, DOE 1999b, DOE 2008, or LANL 2012, so a quantitative comparison of the MIPF impacts to previously documented impacts is not possible. Though a quantitative comparison is not possible, the very small MIPF dose of 4.71×10^{-6} mrem/year is consistent with the 1997 EA statement of trace amounts of radioactive air emissions. While a quantitative comparison is not possible, it is possible to gain some insight by comparing MIPF to the total dose from LANL operations. The 1997 EA reports a dose of 2.3 mrem/year for all LANL operations and LANL 2012 reports the dose from LANL operations at a somewhat lower value of 0.58 mrem/year, both of which result in an LCF risk of $<1 \times 10^{-4}$ for an assumed 30 years of operation. The dose and LCF risk from LANL operations are less than 1% of background radiation doses. The MIPF doses are five orders of magnitude below the LANL operation values and represent a trivial contribution to the LANL operation impacts, which are already small, compared to background doses. LANL 2012 concluded that "[t]he doses from LANL operations … do not cause observable human health effects." Since the LANL operations doses result in no observable health effects and the MIPF doses are five orders of magnitude less than the LANL operation doses, the MIPF health impacts would not be observable. Population doses from routine operations are not provided in the 1997 EA so a quantitative comparison cannot be made. The population living within 50 miles of LANL has increased from 297,000 in 1999 for TA-3-29 (DOE 1999b) to a 2008 average of 343,000 (LANL 2012), which is an increase of 15%. Since the MIPF MEI dose would result in no observable health effects, this small increase in the 50-mile population would not have an observable effect.		
Public and Occupational Health and Safety – Non-radiological Releases from Accidents		
1-hour Exposure Level	Exposures would be less than Emergency Response Planning Guideline (ERPG) level 3, which is the maximum airborne concentration below which nearly all individuals could be exposed for up to 1 hour without experiencing or developing life-threatening health effects.	See discussion below.
Comparison to the 1997 EA: The 1997 EA included analysis of an arsine gas release associated with semiconductor production. This postulated accident could expose one or more workers, however, "[i]t is very unlikely that the postulated accident involving this quantity of arsine would expose anyone for one hour at ERPG level 3 without evacuation occurring at the proposed facility. … This event consequently would not have any effects outside of the building." Although Samitaur did not postulate any non-radiological accidents for the MIPF		

Resource Area	Impacts Analyzed in the 1997 EA	Impacts from the Samitaur Proposal
(Samitaur 2014b, Samitaur 2014c), it is expected that an analysis of the chemical inventories for MIPF would be similar to those used for the LANSCE isotope production efforts. The analysis of the most potentially impacting facilities (DOE 2008) did not result in the identification of any chemical accidents that would exceed ERPG level 3 values. Consequently, the potential impacts from chemical accidents in the MIPF are likely to be less than EPRG level 3 values and consistent with the 1997 EA.		
Public and Occupational Health and Safety – Facility Accidents		
Reported MEI Dose	<0.1 mrem	2.60×10^{-9} mrem
Calculated LCF Risk (per Section 1.4.2.2)	6×10^{-8}	2×10^{-15}
Comparison to the 1997 EA: The 1997 EA analyzed an accident involving the release of trace levels of radioactive materials used in biological tracer studies. This postulated scenario is expected to have a frequency ranging from once in 100 years to once in 10,000 years. The MEI dose from this postulated LARP accident of <0.1 mrem is very small and "Adverse health effects are unlikely to result from this accident scenario" (1997 EA). There have been no actual radiological accidents at the LARP because there have been no radioactive materials present. Five postulated accident scenarios were evaluated for the MIPF and the most impacting accident is an irradiated Rb target fire, which is expected to have a frequency of once in 10 years. The dose from this postulated MIPF accident is seven orders of magnitude smaller than the dose from the postulated LARP accident. Neither the LARP nor the MIPF accidents would have any observable health effects (e.g., the LCF risk is $<1 \times 10^{-7}$). Population doses from accidents are not provided in the 1997 EA so a comparison cannot be made. The population living within 50 miles of LANL has increased from 297,000 in 1999 for TA-3-29 (DOE 1999b) to a 2008 average of 343,000 (LANL 2012), which is an increase of 15%. Since the MIPF MEI dose would result in no observable health effects, this small increase in the 50-mile population would not have an observable effect.		
Waste Management	Construction could generate up to 2,400 cubic yards of nonhazardous waste. Once operational, an additional 47,100 gallons per day of sanitary wastewater could be generated. Minimal amounts of hazardous wastes could be generated by routine operations conducted at the LARP. Any radioactive waste or mixed waste generated at the LARP would require disposal at an off-site, licensed facility.	Construction could generate minimal quantities of nonhazardous waste. Once operational, an additional 1,960 gallons per day of sanitary wastewater and 150 pounds per day of solid waste could be generated as a result of the MIPF. Minimal quantities of hazardous wastes and less than 25 drums of solidified LLW could be generated by routine operations conducted at the MIPF. Any hazardous or LLW generated at the MIPF would require disposal at off-site, licensed facilities.
Comparison to the 1997 EA: All of the waste types associated with the MIPF would be consistent with the waste types identified in the 1997 EA. The 1997 EA did not quantify the potential quantities of hazardous and LLW that could be generated at the LARP because details of the exact future use by tenants of the LARP were unknown at the time the 1997 EA was prepared. The amount of hazardous waste that could be generated at the MIPF would be minimal and would be less than 1% as much as LANL generated in 2012. The amount of LLW that could be generated at the MIPF would be less than 1% as much as LANL generated in 2012. Quantification of these wastes would not change the conclusions from the 1997 EA process.		
Traffic	The LARP would generate 2,300-3,000 vehicle trips per day. As a result, traffic congestion is anticipated to increase on West Jemez Road, Diamond Drive, East .Jemez Road, West Road, and Pajarito Road. Traffic improvements related to the LARP would likely include the widening of West Jemez Road,	The MIPF would generate approximately 225-300 vehicle trips per day.

Resource Area	Impacts Analyzed in the 1997 EA	Impacts from the Samitaur Proposal
	upgrading of traffic signals, and widening Diamond Drive.	
Comparison to the 1997 EA: The MIPF would generate fewer vehicle trips and less traffic than the 1997 EA estimated. Any road improvements or traffic-related improvements to support the MIPF would be no greater than those analyzed in the 1997 EA.		
Transportation Impacts/Transportation Accidents	No analysis of transportation impacts/accidents was performed.	See discussion below.
Comparison to the 1997 EA: Transportation impacts were not addressed in the 1997 EA. With respect to potential impacts associated with the MIPF, shipments would increase as the facility production rate increases and would approach 1,200 containers per year, with each container holding about 0.6 Ci and packaged in Type A containers. (Samitaur 2014d) MIPF shipments would be performed in accordance with DOT and NRC regulations, which ensure that transportation does not pose undue risks to workers or the public. Therefore, no observable impacts are expected from transportation of the MIPF product.		

3.2.1 Key Conclusions of the Comparative Analysis

As shown in Table 3-1, for all resources that were considered in the 1997 EA, there are two under the current proposal that would exceed the bounding analysis. Electrical and water use would be higher but still within the available electrical system supply capacity and water rights, respectively.

4.0 CUMULATIVE IMPACTS

Council on Environmental Quality regulations (40 CFR 1508.7) define cumulative impacts as "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." This section reviews and updates the cumulative impacts analysis presented in the 1997 EA.

The cumulative impacts analysis in the 1997 EA considered the impacts of: (1) uses of the research park; (2) LANL operations; (3) actions related to the Chemistry and Metallurgy Research (CMR) facility; (4) LANL electric utility supply capability; (5) Santa Fe National Forest Lands; (6) DP Road Tract ownership transfer; and (7) additional transfers or leases of DOE land and properties. These impacts were added to the environmental impacts of other present and reasonably foreseeable future actions at or near the LARP to obtain cumulative impacts under normal conditions.

Because the potential impacts associated with the MIPF are less than or similar to the impacts presented in the 1997 EA, the cumulative impacts of the MIPF would be less than or similar to the impacts presented in the 1997 EA (assuming no change in impacts from the other actions that were originally considered). Since the publication of the 1997 EA, however, there have been notable changes in the impacts from these other actions. Additionally, there have been other actions that are potentially relevant to cumulative impacts. This section addresses the notable changes and other potentially relevant actions.

Uses of the LARP. Past land uses were adequately addressed in the 1997 EA and there is no new information that would necessitate an update to the analysis that was presented in the 1997 EA. With respect to potential future uses, in addition to the MIPF which is the subject of this SA, Samitaur expects that the MIPF could facilitate the construction of other light laboratory/office buildings at the LARP, such as those associated with radiopharmaceutical research and imaging instrument detection (Samitaur 2014c). Samitaur does not anticipate that the total square footage of facilities would exceed the estimates presented in the 1997 EA (Samitaur 2014c). Because there are currently no firm proposals, however, it would be speculative to analyze the cumulative impacts of any facilities beyond the MIPF. Any facilities proposed for the LARP, including the MIPF, would require approval from Los Alamos County in accordance with zoning requirements. Currently, the LARP is zoned as Research and Development. The LACDC would be responsible for obtaining any zoning approvals related to the MIPF.

LANL Operations. Continuing operations at LANL, in combination with the MIPF, would have the potential to produce cumulative impacts, as discussed below.

> Nonradiological Air Emissions. In 2012, the TA-03 power plant and boilers located across the Laboratory were the major contributors of nitrogen oxides (NOx), carbon monoxide (CO), and particulate matter (PM). However, LANL's highest emissions are still significantly lower than the permit limits; for example, NOx emissions were approximately 23% of the permit limit, CO emissions were

16%, and PM emissions were 4% (LANL 2012). Because of the relatively large margin between emissions and permit levels, no air quality standards are expected to be exceeded from the cumulative releases from LANL operations and the MIPF.

Radiological Air Emissions. As was the case in the 1997 EA, LANL's routine operations contribute to the total background radiological setting for the LARP. The main source of these radioactive emissions continues to be LANSCE, which is located east of the LARP along the south side of Los Alamos Canyon about two miles away. LANSCE operations have historically accounted for the majority of the radioactive air emissions population dose from LANL (LANL 2008, LANL 2012). As shown in Table 1-2, the maximum dose to an individual from LANL operations would be 0.58 mrem/year. Once operational, the MIPF could release small quantities (approximately 1.3×10^{-4} curies) of airborne gasses and particles, which would result in an MEI dose of 4.71×10^{-6} mrem/year (Samitaur 2014b). The cumulative impacts would be essentially the same as impacts from LANL operations alone.

Wastes. In 2012, LANL generated approximately 3,000 tons of solid waste that was sent to the transfer station. Through LANL's recycling efforts in 2012, 1,400 tons of material was recycled and did not go to a landfill. In 2012, LANL operations generated approximately 13.5 tons of hazardous waste, which was disposed of at licensed, commercial off-site facilities. During 2012, LANL generated approximately 945 cubic yards of LLW (LANL 2012). LANL disposes of LLW off-site at the Nevada National Security Site, at a commercial site located near Clive, Utah, and on-site at TA-54, Area G. The amount of hazardous waste that could be generated at the MIPF would be less than 1% as much as LANL generated in 2012. The amount of LLW that could be generated at the MIPF would be less than 1% as much as LANL generated in 2012. The cumulative impacts would be essentially the same as impacts from LANL operations alone.

CMR. Since the 1997 EA, DOE/NNSA has prepared two NEPA documents related to the CMR facility: (1) *Environmental Impact Statement for the Chemistry and Metallurgy Research Building Replacement Project at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EIS-0350) (DOE 2003) (hereafter, CMR-R EIS); and (2) *Supplemental Environmental Impact Statement for the Nuclear Facility Portion of the Chemistry and Metallurgy Research Building Replacement Project at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EIS-0350-S1) (DOE 2011) (hereafter, CMR-R SEIS). As a result of these two NEPA documents, DOE/NNSA announced two Records of Decision (RODs) (69 FR 6967, February 3, 2004, and 76 FR 64344, October 18, 2011) to pursue a replacement for the existing CMR located in TA-3. The replacement facility will be constructed in TA-55 and is referred to as the CMR-Replacement (CMR-R). The CMR-R would consist of two buildings: the Nuclear Facility (CMRR-NF) and the Radiological Laboratory, Utility, and Office Building (RLUOB). Construction of the RLUOB was completed in April 2014. On February 13, 2012, a decision was made to defer CMRR-NF construction for at least five years. Because the CMR-R would be located in TA-55, the potential cumulative impacts would be less than those that were identified

in the 1997 EA, which analyzed an upgrade to the existing CMR in TA-3. NNSA currently plans to cease CMR programmatic operations in 2019 (Fong 2014).

LANL Electric Utility Supply Capability. The 1997 EA concluded that, "At LANL, the capability of the current electric utility supply system is adequate to meet the demands of existing and reasonably foreseeable future operations." Given that the MIPF is expected to require additional electricity compared to the actions analyzed in the 1997 EA, this section analyzes the validity of that previous conclusion. As shown in Table 1-1 of this SA, the current electricity supply system has an available capacity of 513,000 MWh/year. The electricity demands of the MIPF are estimated to be 43,800 MWh/year. Given that the available supply would exceed demand requirements, the conclusion from the 1997 EA is validated. The 1997 EA provided a detailed analysis of potential alternatives and impacts associated with supplying electricity to the LARP. Constructing and operating the MIPF at the LARP would not change that analysis.

Santa Fe National Forest Lands. Actions associated with the Santa Fe National Forest Lands have not notably changed and were adequately addressed in the 1997 EA. Consequently, there is no need to update the analysis that was presented in the 1997 EA.

Transfers or Leases of DOE Land and Properties (including the DP Road Tract Ownership Transfer). In October 1999, DOE prepared the *Environmental Impact Statement for the Conveyance and Transfer of Certain Land Tracts Administered by the U.S. Department of Energy and Located at Los Alamos and Santa Fe Counties, New Mexico* (DOE/EIS-0293) (DOE1999c) (hereafter, CT EIS). That EIS addressed the potential environmental impacts associated with transferring up to 10 tracts of land with a total size of approximately 4,796 acres to the County of Los Alamos and the Secretary of the Interior, in trust for the Pueblo of the San Ildefonso. Three RODs were published as follows: (1) 54 FR 14952 (March 20, 2000); (2) 70 FR 48378 (August 17, 2005); and (3) 77 FR 3257 (January 1, 2012). As a result of these three RODs, DOE transferred essentially all of these lands. The cumulative impacts of the LARP and these transfers were previously addressed in the CT EIS and the proposal related to the MIPF would fall within the impacts of that cumulative analysis.

Biosafety Level-3 Facility. DOE/NNSA is currently preparing the *Environmental Impact Statement for the Operation of a Biosafety Level-3 Facility at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EIS-0388) (DOE 2014) (hereafter, BSL-3 EIS). As of the date of this SA, the Draft BSL-3 EIS has not yet been approved or published. The BSL-3 Facility at LANL has already been constructed in TA-3, following completion of an EA and issuance of a FONSI in 2002 (DOE 2002a, DOE 2002b). After completion of the EA and FONSI and Facility construction, NNSA identified new seismic information concerning the BSL-3 Facility and determined that it was necessary to conduct additional seismic analysis. As a result, in January 2004, DOE/NNSA withdrew the FONSI to evaluate the environmental consequences of operating a BSL-3 Facility in light of the new seismic information (DOE 2004).

Because the BSL-3 facility has already been constructed, there would be no additional impacts to the following resources: land, visual, geology and soils, and cultural and paleontological. Noise impacts would be primarily from heating and ventilation operations, consistent with other

existing facilities, and highly localized. Facility operations would result in very minor air emissions and would not require a permit for a new source nor cause any exceedances of any ambient air quality standards. The incremental additional water the facility would utilize would be less than 0.01% of the current water use by LANL. Electrical use would be minimal. Because the facility is designed for a maximum occupancy of 30 people, socioeconomic impacts would be minor. Operations could generate solid waste at a rate of about 15,600 pounds per year. Facility operations may generate minimal quantities of radioactive waste from the use of small quantities of short-lived radioisotopes. It is estimated that no more than 10 pounds of LLW would be generated annually (DOE 2014). Given these potential impacts from the BSL-3 facility, the cumulative impacts of the BSL-3 facility and the MIPF would be minor and negligible.

5.0 CONCLUSION AND DETERMINATION

The 1997 EA evaluated the potential impacts of the land development activities and future occupants' operations that could occur if DOE leased the LARP. That 1997 EA supports the FONSI issued by DOE for the subsequent lease between DOE and the LACDC. The 2014 Samitaur proposal to construct and operate the MIPF within the LARP would use and store radioactive materials that are prohibited under the current lease terms. Therefore, in order to proceed with that Samitaur proposal, the existing lease would require modification.

This SA has been prepared in accordance with DOE NEPA regulations (10 CFR 1021.314(c)) to determine whether a supplemental or new NEPA document should be prepared. This SA provides an analysis of the Samitaur proposal relative to the analysis in the 1997 EA to determine if there are substantial changes in environmental impacts, or there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

The analysis in this SA indicates that the identified and projected environmental impacts, including cumulative impacts and the impacts that could result from greenhouse gases and intentional destructive acts, would cause no significant change in the potential impacts identified in the 1997 EA. On the basis of the Samitaur provided documents and comparative or bounding analysis of the Samitaur proposal relative to the analysis in DOE/EA-1212 presented in this SA, DOE/NNSA has determined that there are no currently identified significant new circumstances or information relevant to environmental concerns that warrant preparation of a supplemental or new NEPA document. However, as the project matures and further information becomes available additional NEPA review may be required. Based on the analysis in this SA, the existing lease between DOE/NNSA and the LACDC can be modified as necessary to allow the Samitaur proposal to proceed at the LARP.

Based on my review of the information contained in this supplement analysis concerning the proposed action, as the Head of Field Organization (as required by DOE Order 451.1B Chg 3), I have determined, with the concurrence of the Los Alamos Field Office Counsel, that no further documentation is required at this time.

Kim Davis Lebak — Date: 10/30/14
Manager, Los Alamos Field Office

In accordance with DOE Order 451.1B Chg 3, this action is concurred with by the Los Alamos Field Office NEPA Compliance Officer.

Karen Oden — Date: 10/28/14
NEPA Compliance Officer, Los Alamos Field Office

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