



**VOLUME II
APPENDICES**

U.S. DEPARTMENT OF ENERGY
WASHINGTON, DC 20585

**FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR THE
RECAPITALIZATION OF INFRASTRUCTURE SUPPORTING
NAVAL SPENT NUCLEAR FUEL HANDLING**

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DOE/EIS-0453-F

FINAL
Environmental Impact Statement for the Recapitalization of
Infrastructure Supporting Naval
Spent Nuclear Fuel Handling

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ABSTRACT:

The Naval Nuclear Propulsion Program (NNPP), also known as the Naval Reactors Program, is a joint United States (U.S.) Navy and Department of Energy (DOE) organization with responsibility for all matters pertaining to naval nuclear propulsion from design through disposal (cradle-to-grave). The NNPP's mission is to provide the U.S. with safe, effective, and affordable naval nuclear propulsion plants and to ensure their continued safe and reliable operation through lifetime support, research and development, design, construction, specification, certification, testing, maintenance, and disposal.

This Environmental Impact Statement (EIS) evaluates the potential environmental impacts associated with recapitalizing the infrastructure needed to ensure the long-term capability of the NNPP to support naval spent nuclear fuel handling for at least the next 40 years (i.e., the proposed action). The NNPP is committed to managing naval spent nuclear fuel in a manner that is consistent with the *Department of Energy (DOE) Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Final Environmental Impact Statement* (DOE/EIS-0203-F) and to complying with the 1995 Settlement Agreement, as amended in 2008, among the State of Idaho, the DOE, and the Navy concerning the management of naval spent nuclear fuel.

Consistent with the Record of Decision for DOE/EIS-0203-F, naval spent nuclear fuel is shipped by rail from shipyards and prototypes to the Expended Core Facility (ECF) on the Idaho National Laboratory for processing. The proposed action is needed because significant upgrades are necessary to the ECF infrastructure to continue safe and environmentally responsible naval spent nuclear fuel handling until at least 2060.

To allow the NNPP to continue to unload, transfer, prepare, and package naval spent nuclear fuel for disposal, three alternatives were identified and are evaluated in this EIS:

1. No Action Alternative – Maintain the naval spent nuclear fuel handling capabilities of ECF by continuing to use the current ECF infrastructure while performing only preventative and corrective maintenance.
2. Overhaul Alternative – Recapitalize the naval spent nuclear fuel handling capabilities of ECF by overhauling ECF with major refurbishment projects for the ECF infrastructure and water pools to keep the infrastructure and water pools in safe working order and provide the needed long-term capabilities for transferring, preparing, and packaging naval spent nuclear fuel.
3. New Facility Alternative – Recapitalize the naval spent nuclear fuel handling capabilities of ECF by constructing and operating a new facility at one of two potential locations at the Naval Reactors Facility (NRF).

This EIS evaluates the environmental impacts (direct, indirect, and cumulative) that result from recapitalizing the naval spent nuclear fuel handling capabilities. The EIS presents a comparison of the environmental impacts from these alternatives. The impacts to human health and the environment for all these alternatives would primarily be small. The preferred alternative to recapitalize naval spent nuclear fuel handling capabilities is to build a new facility (New Facility Alternative) at Location 3/4.

SCOPING PROCESS:

The DOE published a Notice of Intent (NOI) to prepare an EIS for naval spent nuclear fuel handling and examination recapitalization in 75 Fed. Reg. 42082 (July 20, 2010). The purpose of this NOI was to announce the NNPP's intent to prepare an EIS for the recapitalization of the infrastructure supporting naval spent nuclear fuel handling and examination and to solicit comments on the scope of the EIS.

During preparation of the Draft EIS, it was determined that the NNPP plan for a single EIS that addressed the recapitalization of the infrastructure supporting both naval spent nuclear fuel handling and examination was not feasible. When the EIS was initially scoped in 2010, the NNPP plans showed the evaluation of alternatives for examination recapitalization being developed in parallel with the development of the Draft EIS such that planning for the recapitalization of the examination capabilities would closely follow planning for the recapitalization of the naval spent nuclear fuel handling capabilities. However, due to fiscal restraints on the DOE budget, project schedules changed such that the proposed action progressed further than evaluations for examination recapitalization. The examination recapitalization evaluations have not developed at a pace sufficient to conduct a proper National Environmental Policy Act (NEPA) evaluation concurrent with the proposed action. A final set of alternatives for the examination recapitalization has not been established, and pre-conceptual design information is not available upon which impacts can be evaluated. An amended NOI was published in 77 Fed. Reg. 27448 (May 10, 2012). The purpose of the amended NOI was to announce the NNPP's intent to reduce the scope of the EIS to include only the recapitalization of naval spent nuclear fuel handling capabilities in the proposed action. The NNPP used the input received during both scoping periods to prepare the Draft EIS.

PUBLIC COMMENT ON THE DRAFT EIS:

On June 19, 2015 the NNPP published a notice announcing the availability of the Draft EIS; the duration of the public comment period through August 10, 2015; the location and timing for three public hearings; and the various methods that could be used for submitting comments on the Draft EIS (80 Fed. Reg. 35331). In response to a request from the Shoshone-Bannock tribes, on

August 14, 2015 the NNPP published a notice that it was reopening the public comment through August 31, 2015 (80 Fed. Reg. 48850).

Three public hearings were held in Idaho from August 4 through August 6, 2015 in Idaho Falls, Pocatello, and Twin Falls. Elected officials and members of the public provided oral and written comments during hearings. Additionally, a website (www.ecfrecapitalization.us) was established to provide further information to the public about the Draft EIS, how to submit comments, and other pertinent information.

All written public comments received plus a transcript of oral comments made during the public hearings are included in Appendix G. Responses to all comments are also included in Appendix G. All comments were considered in preparing this Final EIS.

CHANGES TO THE DRAFT EIS:

Throughout this Final EIS, text revisions and modifications that have occurred since publication of the Draft EIS are indicated by a vertical line (sidebar) in the margin. Section 1.7 provides a summary of the important changes made since the Draft EIS. Other changes were made to update information and make other minor clarifications and editorial revisions. Appendix G does not contain any side-barred text, since that Appendix is an entirely new section of the EIS and did not appear in the Draft EIS.

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ACRONYMS

AEA	Atomic Energy Act
ALARA	As Low As Reasonably Achievable
AQRVs	Air Quality Related Values
ARF	Airborne Release Fraction
ATR	Advanced Test Reactor
B.A.	Bachelor of Arts
BEA	Bureau of Economic Analysis or Battelle Energy Alliance
BLM	Bureau of Land Management
B.S.	Bachelor of Science
CAA	Clean Air Act
CCA	Candidate Conservation Agreement
CED	Committed Effective Dose
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFA	Central Facilities Area
C.F.R.	Code of Federal Regulations
CH	Contact-handled
CRMP	Cultural Resources Management Plan
CSR	Cask Shipping and Receiving Facility
CT	Computed Tomography
CVN	Carrier Vessel - Nuclear
DART	Days Away, Restricted, or on-the-job Transfer
D&D	Decontamination and Decommissioning
dBA	Decibels on an A-Weighted Scale
DI	Deionized (water)
DOE	Department of Energy
DOP	Diocetylphthalate
DOT	Department of Transportation
DR	Damage Ratio
EA	Environmental Assessment
EBR	Experimental Breeder Reactor
ECF	Expendable Core Facility
ED	Effective Dose
EDG	Emergency Diesel Generator
EEOICPA	Energy Employees Occupational Illness Compensation Program Act
EF	Emission Factor
EIS	Environmental Impact Statement
EMR	Environmental Monitoring Report
EO	Executive Order
EPA	Environmental Protection Agency
EPCM	Engineering Procurement and Construction Management
ERA	Ecological Risk Assessment
ESA	Endangered Species Act
ESER	Environmental Surveillance, Education and Research
ESRP	Eastern Snake River Plain
FFA/CO	Federal Facility Agreement and Consent Order
FFCA	Federal Facilities Compliance Act
FLM	Federal Land Manager
FONSI	Finding of No Significant Impact
FY	Fiscal Year

ACRONYMS (cont.)

GHG	Greenhouse Gas
GTCC	Greater Than Class C
GWP	Global Warming Potential
HAP	Hazardous Air Pollutant
HDPE	High Density Polyethylene
HEPA	High-Efficiency Particulate Air
HFC	Hydrofluorocarbon
HVAC	Heating, Ventilation and Air Conditioning
ICDC	Idaho Conservation Data Center
ICMR	Institutional Control Monitoring Report
ICPP	Idaho Chemical Processing Plant
ICRP	International Commission on Radiological Protection
IDA	Intentionally Destructive Act
IDAPA	Idaho Administrative Procedures Act
IDEQ	Idaho Department of Environmental Quality
IFWO	Idaho Fish and Wildlife Office
INEEL	Idaho National Engineering and Environmental Laboratory
INL	Idaho National Laboratory
INPS	Idaho Native Plant Society
INTEC	Idaho Nuclear Technology and Engineering Center
IWD	Industrial Waste Ditch
J.D.	Juris Doctorate (Law Degree)
LA	License Application
LCC	Lambert Conformal Conic
LLW	Low-Level (Radioactive) Waste
LNT	Linear-non-threshold
LPF	Leak Path Factor
LTEM	Long Term Ecological Monitoring
LS	Limit State
M.A.	Master of Arts
MACT	Maximum Achievable Control Technology
MAP	Mitigation Action Plan
MAR	Material-At-Risk
M.B.A.	Master of Business Administration
MCL	Maximum Contaminant Level
MCW	Maximally-Exposed Co-Located Worker
MDL	Method Detection Limit
MEI	Maximally Exposed Off-site Public Individual (INL)
MEng	Master of Engineering
MFC	Materials and Fuels Complex
MLLW	Mixed Low-Level (Radioactive) Waste
MOI	Maximally Exposed Off-site Individual (NRF)
M.S.	Master of Science
MT CO ₂ e	Metric Tons of CO ₂ Equivalent
MTHM	Metric Tons of Heavy Metal
MWMP	Mixed Waste Management Plan
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants

ACRONYMS (cont.)

NHPA	National Historic Preservation Act
NLCD	National Land Cover Data
NNPP	Naval Nuclear Propulsion Program
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPA	Nearest Public Access individual
NPDES	National Pollutant Discharge Elimination System
NPH	Natural Phenomenon Hazard
NPL	National Priorities List
NPS	National Park Service
NRC	Nuclear Regulatory Commission
NRF	Naval Reactors Facility
NRHP	National Register of Historic Places
OLM	Ozone Limiting Method
OSB	Overpack Storage Building
OSE	Overpack Storage Expansion
OSHA	Occupational Safety and Health Administration
PAG	Protective Action Guideline
PC	Performance Category
PCB	Polychlorinated Biphenyl
PCS	Primary Constituent Standard
PFC	Perfluorocarbon
Ph.D.	Doctorate of Philosophy
PM	Particulate Matter
PSD	Prevention of Significant Deterioration
PSHA	Probabilistic Seismic Hazard Analysis
RCRA	Resource Conservation and Recovery Act
RF	Respirable Fraction
RH	Remote-handled
ROD	Record of Decision
ROI	Region of Influence
RWMC	Radioactive Waste Management Complex
SA	Supplemental Analysis
SBTC	Shielded Basket Transfer Container
SDC	Seismic Design Category
SDWA	Safe Drinking Water Act
SFPF	Spent Fuel Packaging Facility
SGCA	Sage-grouse Conservation Area
SHPO	State Historic Preservation Office
SI	International System of Units
SOX	Stand-Off Experiment
SRPA	Snake River Plain Aquifer
SRS	Savannah River Site
SSCs	Structures, Systems, and Components
STC	Shielded Transfer Container
STP	Site Treatment Plan
TAN	Test Area North
TAP	Toxic Air Pollutants
TED	Total Effective Dose
TRC	Total Recordable Cases

ACRONYMS (cont.)

TREAT	Transient Reactor Test Facility
TRU	Transuranic
TSCA	Toxic Substances Control Act
U.S.	United States
USACOE	United States Army Corps of Engineers
U.S.C.	United States Code
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOC	Volatile Organic Compound
VRM	Visual Resource Management
WAG	Waste Area Group

CONVERSION CHART

Metric to English			English to Metric		
			Area		
Multiply	by	To Find	Multiply	by	To Find
square kilometers	0.386	square miles	square miles	2.590	square kilometers
square meters	10.764	square feet	square feet	0.093	square meters
hectares	2.471	acres	acres	0.405	hectares
			Length		
Multiply	by	To Find	Multiply	by	To Find
centimeters	0.394	inches	inches	2.540	centimeters
meters	3.281	feet	feet	0.305	meters
kilometers	0.621	miles	miles	1.609	kilometers
			Volume		
Multiply	by	To Find	Multiply	by	To Find
liters	0.264	gallons	gallons	3.785	liters
cubic meters	1.308	cubic yards	cubic yards	0.765	cubic meters
			Weight/Mass		
Multiply	by	To Find	Multiply	by	To Find
metric tons	1.102	U.S. tons (short)	U.S. tons (short)	0.907	metric tons
kilograms	0.001102	U.S. tons (short)	U.S. tons (short)	907.185	kilograms
kilograms	2.205	pounds	pounds	0.4536	kilograms
grams	0.0353	ounces	pounds	453.59	grams
grams	0.0022	pounds	ounces	28.35	grams
			Temperature		
Multiply	by	To Find	Multiply	by	To Find
[degrees Kelvin - 273.15]	1.8, then add 32	degrees Fahrenheit	[degrees Fahrenheit - 32]	0.556, then add 273.15	degrees Kelvin
degrees Celsius	1.8, then add 32	degrees Fahrenheit	[degrees Fahrenheit - 32]	0.556	degrees Celsius

Units of Radiation

1 Curie = 3.7×10^{10} disintegrations per second

1 Curie = 3.7×10^{10} Becquerels

1 Becquerel = 1 disintegration per second

1 rad = 0.01 gray

1 rem = 0.01 Sievert

1 gray = 1 joule per kilogram

Metric to Metric

metric ton = 1000 kilograms

English to English

U.S. ton (short) =	2000 pounds
U.S. ton (long) =	2240 pounds

Metric Prefixes

mega = multiplication factor of 1,000,000 (1×10^6)

kilo = multiplication factor of 1,000 (1×10^3)

centi = multiplication factor of 0.01 (1×10^{-2})

milli = multiplication factor of 0.001 (1×10^{-3})

micro = multiplication factor of 0.000 001 (1×10^{-6})

pico = multiplication factor of 0.000 000 001 (1×10^{-12})

APPENDIX A

PUBLIC SCOPING

A.1 Background and Summary

This appendix provides information on the efforts taken to comply with the National Environmental Policy Act (NEPA) requirements for the solicitation and accumulation of comments on the scope of the Environmental Impact Statement (EIS) for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling at the Idaho National Laboratory (INL).

The Notice of Intent (NOI) was published in 75 Fed. Reg. 42082 (July 20, 2010). At that time, the NOI included recapitalization of both naval spent nuclear fuel handling and examination capabilities of the Expended Core Facility (ECF). The NOI and Legal Notice placed in area newspapers provided a toll-free telephone number, a mailing address, and an e-mail address to allow interested members of the public to provide comments on the scope of this EIS. In addition, three public scoping meetings were held in Idaho to solicit written and verbal comments on the proposed action. The comment period officially ended on September 3, 2010; however, the Naval Nuclear Propulsion Program (NNPP) chose to incorporate comments received after that date.

During the comment period, the NNPP received two comments by mail and 10 comments by e-mail. No comments were received at the Idaho Falls public scoping meeting, three comments were received at the Pocatello public scoping meeting, and two comments were received at the Twin Falls public scoping meeting.

Table A-1 provides a list of comments received during the public scoping period. Section A.2 provides the comments received by mail and e-mail (in as-received form), comments provided during the public scoping meetings (from transcripts recorded by court recorders), and the NNPP responses.

The NNPP published an Amended NOI in 77 Fed. Reg. 27448 (May 10, 2012) to revise the scope of the EIS to just that necessary to support the recapitalization of the naval spent nuclear fuel handling capabilities of ECF. The amended NOI was placed in area newspapers and provided a mailing address and an e-mail address to allow interested members of the public to provide comments on the scope of the EIS. The comment period on the revised scope of the EIS ended on June 11, 2012. During the comment period, the NNPP received two comments by mail and two comments by e-mail. Table A-2 provides a list of comments received during the public scoping period for the amended NOI.

Table A-1: Comments Received on Scope of the EIS

Medium	Number of Comments	Person/Group Commenting	Date
Mail	2	#1: William L. Duke President IAM&AW Local	08/20/10
		#2: Theogene Mbabaliye, Ph.D. United States (U.S.) Environmental Protection Agency (EPA) Region 10 (Duplicate comments also received by e-mail.)	09/02/10
E-mail	10	#1: B.J. Howerton Environmental Services Manager, Bureau of Indian Affairs	07/22/10
		#2: Richard Provencher	08/26/10
		#3: Theogene Mbabaliye, Ph.D. U.S. EPA Region 10 (Duplicate comments also received by mail.)	09/02/10
		#4: Roger Turner	09/02/10
		#5: Dr. Peter Rickards Idaho Families for the Safest Energy	09/03/10
		#6: Katherine Daly	09/03/10
		#7: Beatrice Brailsford Snake River Alliance	09/03/10
		#8: Dr. Peter Rickards Idaho Families for the Safest Energy	09/03/10
		#9: Kit Deslauriers	09/06/10
		#10: Chuck Broscious	09/08/10
Idaho Falls Meeting	None		
Pocatello Meeting	3	#1: Beatrice Brailsford Snake River Alliance	08/25/10
		#2: Roger Turner	08/25/10
		#3: Bill Downs	08/25/10
Twin Falls Meeting	2	#1: Dr. Peter Rickards	08/26/10
		#2: Bill Chisholm	08/26/10

Table A-2: Comments Received on the Amended NOI

Medium	Number of Comments	Person/Group Commenting	Date
Mail	2	#1: Sandra Blazius	06/05/12
		#2: Richard B. Provencher Idaho Operations Office, U.S. Department of Energy (DOE)	06/05/12
E-mail	2	#1 Unknown	05/13/12
		#2 Beatrice Brailsford Snake River Alliance	06/11/12

Section A.3 provides the comments received on the amended NOI by mail and e-mail (in as-received form), and the NNPP responses.

A.2 Initial Public Scoping Comments and Responses

This section provides comments received during the initial public scoping period and the associated NNPP responses. Personal contact information (i.e., home address, phone number, e-mail address) is redacted to protect personal and private information. Similar information provided by organizations is not redacted.

Mail Comment #1

International Association of Machinists and Aerospace Workers



Grand Teton Local 2006
745 W. Bridge, Suite I
P.O. Box 931
Blackfoot, ID 83221
(208) 243-0482

Date: August 20, 2010

To: Mr. Gregory F. Holden
Naval Sea Systems Command
1240 Isaac Hull Avenue, SE
Washington Navy Yard, DC

Subject: IAM&AW Local 2006 membership support for the Recapitalization of Naval Spent Fuel Handling and Examination Facilities at the Idaho National Laboratory.

Sir,

The membership of IAM&AW Local 2006 and their working families, support "Alternative One" for both the Spent Fuel Handling and Examination Facilities projects to be located at the Naval Reactors Facility (NRF). If the Examination Facility is located at a site other than NRF, our membership would request that consideration be given to maintaining the Collective Bargaining agreement that is in place between IAM&AW Local 2006 and Bechtel Marine Propulsion Corporation, at that locale.

The Machinist Union has a long standing reputation of support for Navy missions; from building new Navy Warships, to refurbishing used Navy vessels, to ensuring that spent Naval Nuclear fuel is handled properly after receipt at the Naval Reactor Facility, on the Idaho National Laboratory (INL). Our membership stands ready to assist the Navy Nuclear Propulsion Program (NNPP) and the sailors who protect our country, obtain their goals and mission requirements, by providing personnel who are highly trained and qualified per NNPP standards.

These two recapitalization projects will bring much needed jobs to Southeast Idaho and the INL. Once complete, these facilities will maintain or possibly expand the workforce at NRF, which will benefit the economy of Southeast Idaho.

IAM&AW Local 2006 appreciates the invitation to be included in these preliminary proceedings and wants to express gratitude for your consideration in the early planning stages.

Sincerely,

William L. Duke
President
IAM&AW Local 2006

Cc: M. Wardle, IAM&AW GLR
Local 2006 File

Response to Mail Comment #1

The commenter's support for the recapitalization project is noted. As indicated in Chapter 2 of the Draft EIS, the proposed action does not include sites off of the Naval Reactors Facility (NRF).

Mail Comment #2



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10

1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
ECOSYSTEMS, TRIBAL AND
PUBLIC AFFAIRS

9/02/2010

Gregory F. Holden (08U-Naval Reactors)
Naval Sea Systems Command
1240 Isaac Hull Avenue, SE, Stop 8036
Washington Navy Yard, DC 20376-8036

Subject: Proposed Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel
Handling and Examination at the INL in Idaho (EPA Project No.: 94-032-DOE)

Dear Mr. Holden:

The U.S. Environmental Protection Agency (EPA) has reviewed the Department of Energy (DOE) Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) for the proposed **Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling and Examination** at the Idaho National Laboratory (INL) Site in Idaho. Our review was conducted in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA). Section 309 requires EPA to review and comment in writing on the environmental impacts associated with all major federal actions.

According to the NOI, DOE proposes to evaluate potential environmental impacts of a proposal to sit and construct new facilities for transferring, preparing, examining, and packaging Naval spent nuclear fuel and other irradiated materials at INL. The existing Expended Core Facility (ECF) infrastructure has been in service for over 50 years and is a growing maintenance burden. Recapitalization of this infrastructure would ensure continued naval nuclear-powered operations and missions for the next 40 years or more and support DOE's commitments identified in the State of Idaho, DOE, and Navy's 1995 Settlement Agreement and related amendments on the bringing, handling, and removal of Navy spent nuclear fuel materials at INL.

The NOI has identified a tentative list of resource areas/issues to be addressed. The list is an appropriate starting point for analyzing the effects of the proposed action and its alternatives. Our attached scoping comments are provided to inform DOE of issues that EPA believes are important and should be considered in the NEPA analysis for the project. Thank you for the opportunity to provide comments at this stage of the EIS development. If you have questions or concerns regarding our comments, please contact me at (206) 553-6322.

Sincerely,

/S/

Theogene Mhabaliye, NEPA Reviewer
Environmental Review and Sediment Management Unit

**EPA Scoping Comments on the proposed
Recapitalization of Infrastructure Supporting
Naval Spent Nuclear Fuel Handling and Examination
at the Idaho National Laboratory in Idaho**

Environmental effects

1 The EIS should include environmental effects and mitigation measures. This would involve delineation and description of the affected environment, indication of resources that would be impacted, the nature of the impacts, and a listing of mitigation measures for the impacts. The NOI indicates that the proposed project has the potential to impact a variety of resources, including water, air, wildlife and their habitat, and human health. These and other impacts should be minimized.

Water resources impacts

2.a Preventing water quality degradation is one of EPA's primary concerns. Section 303(d) of the Clean Water Act (CWA) requires States (and Tribes with approved water quality standards) to identify water bodies that do not meet water quality standards and to develop water quality restoration plans to meet established water quality criteria and associated beneficial uses.

2.b The EIS must disclose which waters may be impacted by the project, the nature of potential impacts, and specific pollutants likely to impact those waters. It should also report those water bodies potentially affected by the project that are listed on the State's and any Tribe's most current EPA approved 303(d) list. The EIS document should describe existing restoration and enhancement efforts for those waters, how the proposed project will coordinate with on-going protection efforts, and any mitigation measures that will be implemented to avoid further degradation of impaired waters. Also, please note that anti-degradation provisions of the CWA prohibit degrading water quality in waterbodies where water quality standards are currently being met.

Public drinking water supplies and/or their source areas often exist in many watersheds. Source water areas might exist within the watershed in which the proposed infrastructure would be located. Source water is water from streams, rivers, lakes, springs, and aquifers that is used as a supply of drinking water. The 1996 amendments to the Safe Drinking Water Act (SDWA) require federal agencies to protect sources of drinking water for communities. Since construction and operation of the project may impact sources of drinking water, EPA recommends that DOE contact the Idaho Department of Environmental Quality (IDEQ) to help identify source water protection areas within the project area. The EIS document should identify all:

- 2.c**
- a) Source water protection areas within the project area.
 - b) Activities that could potentially affect source water areas.
 - c) Potential contaminants that may result from the proposed project.
 - d) Measures that would be taken to protect the source water protection areas in the draft EIS.

The project area is located within the Eastern Snake River Plain Aquifer, which has been designated as a Sole Source Aquifer by EPA. This aquifer is vulnerable to being contaminated from surface activities such as septic sewage disposal, herbicide applications and potential spills of toxic substances. Since groundwater may be impacted by the project, the EIS should fully analyze impacts to groundwater, including reasonably foreseeable direct, indirect and cumulative impacts to groundwater and surface water resources. Guidance documents that address contaminant levels in soil to protect groundwater include: "Soil Screening Guidance for Radionuclides: User's Guide" (OSWER Directive No. 9355.4-16A), October 2000, and "Soil Screening Guidance for Radionuclides: Technical Background Document" (OSWER Directive No. 9355.4-16), October 2000. These documents can be found online at: <http://www.epa.gov/superfund/health/contaminants/radiation/radssg.htm>.

Construction of facilities and access roads, and road use may also compact the soil, thus changing hydrology, runoff characteristics, and ecological function of the area, affecting flows and delivery of pollutants to water bodies. The EIS should note that, under the CWA, any construction project disturbing a land area of one or more acres requires a construction storm water discharge permit or the National Pollutant Discharge Elimination System (NPDES) permit for discharges to waters of the United States. The EIS should document the project's consistency with applicable storm water permitting requirements and should discuss specific mitigation measures that may be necessary or beneficial in reducing adverse impacts to water quality and aquatic resources.

Hazardous Materials

3.a The EIS should address potential direct, indirect and cumulative impacts of hazardous waste from construction and operation of the project. The document should identify projected hazardous waste types and volumes, and expected storage, disposal, and management plans. It should address the applicability of state and federal hazardous waste requirements. Appropriate mitigation should be evaluated, including measures to minimize the generation of hazardous waste (i.e., hazardous waste minimization). Alternate industrial processes using less toxic materials should also be considered.

3.d Since the handling of radioactive materials may affect the parties involved with the project, as well as the public who would access the project area during and after project construction, the EIS should include information ensuring the public that no hazardous materials would be released in the environment as a result of the proposed project activities. During the spent nuclear fuel receipt, transfer, and repackaging operations, it is possible that gaseous, liquid, and solid low-level radioactive waste would be generated. The EIS should discuss probable impacts from exposure to such waste, potential pathways and periods of exposure. Any waste generated should be managed to limit the amounts and maintain exposures as low as reasonably achievable (or ALARA), especially if the waste contains radionuclides of concern, such as iodine-129 and tritium.

3.f During the proposed project operations, accidents may also occur and result in release of highly radioactive waste (spent fuel) to the environment. The EIS for the project should describe measures that will be taken to ensure that the chances of such an accident would be kept to a minimum, but also to ensure that the workers involved in transferring, preparing, examining, and

packaging naval spent nuclear fuel and other irradiated materials, including those loading and unloading shipments are protected.

Seismic Risk

Because the INL Site may be within an active tectonically active area, it is possible that project activities could cause increased seismicity (earthquake activity). The magnitude of such activity is usually low, ranging from 1 - 3 on the Richter scale. However, we recommend that the EIS discuss the potential for seismic risk and how this risk will be evaluated, monitored, and managed to ensure that critical facilities, including nuclear facilities, remain safe during and after any earthquake. A seismic map should either be referenced or included in the EIS.

Air quality and human health impacts

5.a The EIS should provide a detailed discussion of ambient air conditions (baseline or existing conditions), National Ambient Air Quality Standards (NAAQS), and criteria pollutant non-attainment areas in the project area. The EIS should estimate emissions of criteria pollutants for the project site and discuss the timeframe for release of these emissions over the lifespan of the project (40 years). The EIS should also analyze the potential impacts to air quality (including cumulative and indirect impacts) from the project construction and operation.

5.d The EIS should specify emission sources and quantify these emissions. Such an evaluation is necessary to assure compliance with State and federal air quality regulations, and to disclose the potential impacts from temporary or cumulative degradation of air quality. The EIS should include:

- Detailed information about ambient air conditions, NAAQS, and criteria pollutant non-attainment areas in and around the project area.
- Data on emissions of criteria pollutants from the proposed project and discuss the timeframe for release of these emissions over the lifespan of the project.
- Specific information about pollutant from mobile sources, stationary sources, and ground disturbance. This source specific information should be used to identify appropriate mitigation measures and areas in need of the greatest attention.
- An Equipment Emissions Mitigation Plan that identifies actions to reduce diesel particulate, carbon monoxide, hydrocarbons, and NO_x associated with construction activities.
- Evaluation of radioactive emissions, including the effects of radon emissions.

Cumulative Impacts

The Council on Environmental Quality (CEQ) definition of *cumulative impact* is "the impact on the environment which results from the incremental impact 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 result from individually minor but collectively significant actions taking place over time. The cumulative impacts analysis should therefore provide the context for understanding the magnitude of the impacts of the alternatives by analyzing the impacts of other past, present, and

reasonably foreseeable projects or actions at and near the site, then considering those cumulative impacts in their entirety. Where adverse cumulative impacts may exist, the EIS should disclose the parties that would be responsible for avoiding, minimizing, and mitigating those adverse impacts.

EPA has also issued guidance on how we are to provide comments on the assessment of cumulative impacts, *Consideration of Cumulative Impacts in EPA Review of NEPA Documents*, which can be accessed online at:

<http://www.epa.gov/compliance/resources/policies/nepa/cumulative.pdf>. This guidance states that in order to assess the adequacy of the cumulative impacts assessment, five key areas should be considered. EPA tries to assess whether the cumulative effects' analysis:

- a) Identifies resources, if any, that are being cumulatively impacted.
- b) Determines the appropriate geographic (within natural ecological boundaries) area and the period over which the effects have occurred and will occur.
- c) Looks at all past, present, and reasonably foreseeable future actions that have affected, are affecting, or would affect resources of concern.
- d) Describes a benchmark or baseline.
- e) Includes scientifically defensible threshold levels.

Climate Change Effects

Scientific evidence supports the concern that continued increases in greenhouse gas emissions resulting from human activities contribute to climate change. Effects of climate change may include changes in hydrology, sea level, weather patterns, precipitation rates, and chemical reaction rates. Therefore, the EIS document should consider how resources affected by climate change could potentially influence the proposed project and vice versa, especially within sensitive areas. Also, the EIS should quantify and disclose greenhouse gas emissions from the project and discuss mitigation measures to reduce emissions.

Coordination with Tribal Governments

The EIS should describe the process and outcome of government-to-government consultation between DOE and each of the tribal governments that would be affected by the project, issues that were raised, if any, and how those issues were addressed.

Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* (November 6, 2000), was issued in order to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, and to strengthen the U.S. government-to-government relationships with Indian tribes.

Environmental Justice and Public Participation

The EIS should include an evaluation of environmental justice populations within the geographic scope of the project. If such populations exist, the EIS should address the potential

for disproportionate adverse impacts to minority and low-income populations, and the approaches used to foster public participation by these populations.

One tool available to locate Environmental Justice populations is the Environmental Justice Geographic Assessment tool, which is available online at: <http://epamap14.epa.gov/ejmap/entry.html>. Also, Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), directs federal agencies to identify and address disproportionately high and adverse human health or environmental effects on minority and low-income populations, allowing those populations a meaningful opportunity to participate in the decision-making process.

Monitoring

The proposed project has the potential to impact a variety of resources and for an extended period. Because of that, we recommend that the project be designed to include an environmental inspection and mitigation monitoring program to ensure compliance with all mitigation measures and assess their effectiveness. The EIS document should describe the monitoring program and how it will be used as an effective feedback mechanism so that any needed adjustments can be made to the project to meet environmental objectives throughout the life of the project.

10

Response to Mail Comment #2

Responses to EPA's comments follow:

Item #1:

The affected environment is described in Chapter 3. Environmental effects to resources are described in Chapter 4. Potential mitigation measures are addressed in Chapters 3, 4, and 6.

Item #2.a:

Section 4.4 describes which waters may be impacted, the nature of potential impacts, and specific pollutants that could impact these waters.

Item #2.b:

Water bodies on the State's or Tribes' most current EPA approved 303(d) list are not affected by the proposed action.

Item #2.c:

Wellhead and source water protection areas for NRF are described in Section 3.4. Source water protection areas for NRF are delineated in the INL Source Water Assessment (DOE 2003a) in accordance with the methods provided in guidelines of the Idaho Wellhead Protection Plan (IDEQ 1997) and the Idaho Source Water Assessment Plan (IDEQ 1999). Protection measures taken at NRF include spill prevention and cleanup programs; wastewater discharge management plan; waste management programs; and a drinking water monitoring program; these plans and programs conform to applicable federal and state requirements and some are subject to EPA and state of Idaho compliance inspections. Activities that could potentially affect these source water protection areas, along with potential contaminants that may result from the proposed action, are described in Section 4.4.

Item #2.d:

As noted in Section 4.4, no wastewater or storm water would be discharged to waters of the U.S. for any of the proposed alternatives.

Item #2.e:

Impacts to groundwater are analyzed in Section 4.4. Reasonably foreseeable direct, indirect, and cumulative impacts to groundwater resources are analyzed in Chapter 5. As identified in Sections 3.4 and 4.4 surface water would not be impacted. There could be small impacts to groundwater from non-radiological constituents since best management practices would continue to be used to protect groundwater. There would be negligible impacts on groundwater from radiological constituents if preventive and corrective maintenance are not sufficient to prevent a minor water pool leak. NRF controls contamination with programs that conform to applicable federal and state requirements, and some are subject to EPA and state of Idaho compliance inspections (Sections 4.3.2 and 4.3.3).

Item #3.a:

Section 4.14 discusses potential direct and indirect impacts of hazardous waste from construction and operation of the proposed action and identifies projected hazardous waste types and volumes.

Section 5.2.10 addresses cumulative impacts of hazardous waste. Waste storage, disposal, and management plans for hazardous waste are described in Sections 3.14 and 4.14.

Item #3.b:

Applicability of state and federal hazardous waste requirements are addressed in Appendix C.

Item #3.c:

As discussed in Section 3.14, NRF has ongoing actions to minimize the generation of hazardous waste including, where practical, the use of less toxic materials. Those actions are applicable to all of the alternatives under consideration.

Item #3.d:

The potential for release of hazardous or radioactive materials to the environment from the proposed action is described in Section 4.6. The naval spent nuclear fuel handling operations are designed to minimize the potential for release of hazardous constituents in any form. In addition, the NNPP minimizes waste generation from operations. NNPP radiological controls are described in Section 3.13. These controls maintain exposures as low as reasonably achievable (ALARA). Impacts from exposure to radiation, including a description of potential pathways and assumed exposure times, are provided in Appendix F.

Item #3.e:

Radiological and hazardous waste along with naval spent nuclear fuel are managed in accordance with strict control to maintain exposures to ALARA. These controls are effective at managing all radionuclides of concern. As described in Section 4.13, NNPP occupational and public exposures are significantly below regulatory requirements.

Item #3.f:

Appendix F provides an evaluation of a range of hypothetical accident scenarios associated with radiological aspects of the proposed action. It describes emergency preparedness to ensure that workers and the public would be properly protected in the event of an accident. In addition, it describes mitigative measures that could be taken to limit exposure in the event of an accident. Section 3.13 describes the strict NNPP controls that minimize the chance of an accident resulting in a release of radioactivity.

Item #4.a:

Excavation for the new facility alternative would be accomplished with heavy equipment and without blasting; therefore, there would be no increase to seismicity from construction. Similarly, facility operations, described in Chapter 2, would not increase seismicity. The seismic hazards assessment for INL is described in Section 3.3.3. Safety, during and after earthquakes, is addressed by the DOE use of seismic design categories; facility structures, systems, and components are designed accordingly, as discussed in Section 4.3. The seismic impacts and method of evaluation associated with each alternative and time period are described in Sections 4.3.1 through 4.3.3.

Item #4.b:

A seismic map is provided in Section 3.3.

Item #5.a:

Section 3.6.2 describes ambient air conditions and the National Ambient Air Quality Standards (NAAQS). As stated in Section 3.6.2, the project area is in attainment; there are no non-attainment areas.

Item #5.b:

Section 4.6 provides an estimate of annual criteria pollutant emissions from the proposed action.

Item #5.c:

Potential direct and indirect impacts from construction and operation to air quality are analyzed in Section 4.6. Section 5.2.5 discusses potential cumulative impacts to air quality from construction and operation.

Item #5.d:

Section 4.6.1 and Appendix E specify the emission sources and quantity of non-radiological emissions. Section 4.6.2 and Appendix F specify the emission sources and quantity of radiological emissions.

Item #5.e:

Section 4.6.1 and Appendix E provide specific information about pollutants from mobile sources, stationary sources, and ground disturbance. Mitigation measures are addressed in Chapter 6.

Item #5.f:

Idaho does not have a specific requirement for an Equipment Emissions Mitigation Plan for reducing diesel particulate, carbon monoxide, hydrocarbons, and NOx from construction activities. Best management practices for control of fugitive dust during construction per Idaho Administrative Procedures Act Sections 650 and 651 and any permit requirements would be followed during construction. This is addressed in Section 4.6.

Item #5.g:

Section 4.6.2, Section 4.13.2, and Appendix F provide an evaluation of radiological impacts on air quality and public health impacts. Section 4.6.2 identifies those radionuclides that can be released to the air directly or indirectly. Radon gas emissions are not discussed because radon emissions are not expected for the proposed action.

Item #6:

Cumulative impacts are analyzed in Chapter 5.

Item #7.a:

Climate change impacts are described in Sections 3.6.2.2 and 4.6.1.

Item #7.b:

The greenhouse gas evaluations for the proposed action are provided in Section 4.6.

Item #8:

Government-to-government consultation between Naval Reactors and the Shoshone-Bannock Tribes is described in Section 4.8.

Item #9:

Section 4.12 evaluates environmental justice populations within the scope of the proposed action.

Item #10:

Chapter 7 discusses the environmental measurement and monitoring programs that are currently in place at NRF. These monitoring programs could change over time in response to updated regulatory requirements or new discharge points regardless of which alternative is chosen. Results of monitoring would be used to verify proper controls are in place or to take action to ensure the protection of the environment and the public.

E-Mail Comment #1

From: Howerton, B [BJ.Howerton@bia.gov]
Sent: Thursday, July 22, 2010 12:15 PM
To: ECF Recapitalization
Cc: Speaks, Stanley; Fox, Dean; Hernandez, Frederick; Ben, Gerald
Subject: Dept of Energy, NOI EIS Spent Fuel/INL
Attachments: NOI EIS DOE.pdf; NOI EIS DOE full copy.pdf

Regarding the Notice of Intent To Prepare an Environmental Impact Statement for the Recapitalization of Infrastructure

Supporting Naval Spent Nuclear Fuel Handling and Examination at the Idaho National Laboratory, the Bureau of Indian Affairs (BIA) would like to be placed on your mailing list to receive information on the proposed project.

Thank you for the invitation to attend a public meeting to comment on the scope of the planned EIS including identification of reasonable alternative and specific issues that should be addressed in the EIS. It is the BIA's intention to attend one of the following meetings to provide concerns and comments. However, if no BIA personnel are available we will comment on-line. Thank you for the information.

August 24, 2010

6 p.m.-9 p.m.

Shilo Inn, 780 Lindsay Blvd., Idaho

Falls, ID 83404.

August 25, 2010

6 p.m.-9 p.m.

Red Lion, 1555 Pocatello Creek Road,

Pocatello, ID 83201.

August 26, 2010

6 p.m.-9 p.m.

Canyon Springs Red Lion, 1357 Blue

Lakes Blvd. North, Twin Falls, ID

83301.

Dr. BJ Howerton, MBA

Environmental Services Mgr.

BIA, NWRO

Portland, OR

(503) 231-6749



United States Department of the Interior

OFFICE OF THE SECRETARY

Office of Environmental Policy and Compliance
1849 C Street, NW – MS 2462-MIR
WASHINGTON, D.C. 20240



9043.1
PEP/NRM

July 21, 2010

ELECTRONIC MAIL MEMO

To: Assistant Secretary Indian Affairs
Director, Fish and Wildlife Service
Director, National Park Service
Director, Geological Survey
Director, Bureau of Land Management
Commissioner, Bureau of Reclamation

From: Team Leader, Natural Resources Management
Office of Environmental Policy and Compliance

Subject: Notice of Intent to Prepare an Environmental Impact Statement (EIS) for the
Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling
and Examination at the Idaho National Laboratory, Butte County, Idaho
(ER 10/629)(Agency due date: September 3, 2010)

The Department of Energy (DOE) has published in the July 20, 2010 Federal Register (75 FR 42082) a notice of intent to prepare an EIS for the subject project. You may view the notice at:
<http://edocket.access.gpo.gov/2010/pdf/2010-17523.pdf>

This notice gives you an early opportunity to provide technical assistance and/or to participate from your areas of special expertise or jurisdiction. If significant involvement is indicated, you should also participate in the follow-up scoping activities.

Comments should be made directly to the person listed in the notice by **September 3, 2010**.

Please provide a copy of any comments you make to this Office.

/S/07/21/10

Vijai N. Rai

cc: Regional Environmental Officer, POR

OEPC-Staff Contact: Vijai N. Rai, 202-208-6661, vijai_rai@ios.doi.gov

Response to E-Mail Comment #1

The Bureau of Indian Affairs is on the distribution list for the Draft EIS and the Final EIS. No other comments were received.

E-Mail Comment #2

From: Richard Provencher [REDACTED]
Sent: Thursday, August 26, 2010 8:10 AM
To: ECF Recapitalization
Subject: Public Comment on Expended Core Facility Scoping Study

I have evaluated and considered the alternatives being proposed by the Naval Nuclear Propulsion Program in the scoping study for the new expended core facility and concur with the alternatives being proposed for further evaluation under NEPA. The Navy has safely operated its expended core operations at the INL site for many years, and it is good to see that they plan to continue to use the advantages of the INL site to support this critical national defense mission for many years to come. The INL site has been comprehensively studied over many years, and possesses the infrastructure and isolation to support such a program. The environmental impacts of the current Navy operations at the NRF facility have been evaluated and determined to be manageable. In addition, Navy has many years of demonstrated safe and environmentally protective operations of its mission work at the INL site which provides a very good basis for continued operation and shows that they are a good steward of the aquifer, overall environment, and public safety. As the Navy has operated such a facility at the INL site for many years, the environmental impacts have obviously been evaluated and shown to be acceptable and manageable. To the degree that the proposed new ECF involves quantities and throughputs of materials that exceed what has been evaluated in the past, this increment should be bounded and evaluated in the NEPA process to adequately ensure that this critical mission work is covered well into the future and that its operations continue to be environmentally protective. In addition, Navy may want to consider evaluating and choosing a combination or hybrid of the siting alternatives to ensure NEPA coverage of possible decisions and outcomes.

Overall, I support Navy moving forward into the draft EIS stage of this evaluation, and support the siting alternatives and list of potential impacts to be evaluated in the study.

Richard B. Provencher

U.S. Citizen and Idaho Falls Resident

Response to E-Mail Comment #2

The commenter's support for the recapitalization project is noted.

Item #1:

Quantities and throughputs related to the naval spent nuclear fuel handling operations expected in the future are used as a basis for the impact analyses in Chapter 4.

Item #2:

The siting alternatives are described in Section 2.2 of this EIS. For the recapitalization of naval spent nuclear fuel handling capabilities, the NNPP has determined that a hybrid of siting options is not a reasonable alternative. However, an evaluation of a hybrid of siting alternatives may be considered for the recapitalization of examination facilities when it is evaluated separately.

E-Mail Comment #3

From: Mbabaliye.Theogene@epamail.epa.gov
[mailto:Mbabaliye.Theogene@epamail.epa.gov]
Sent: Thursday, September 02, 2010 8:16 PM
To: Holden, Greg H CIV SEA 08 NR
Cc: Brandt.Kit@epamail.epa.gov; Reichgott.Christine@epamail.epa.gov
Subject: Re: NNPP Recapitalization Project

Hi again Mr. Holden!

Attached, please find EPA scoping comments on your proposed Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling and Examination at the Idaho National Laboratory Site. A hard copy of the same comments is also being mailed to you under separate cover using the US Postal Service. In the mean time, contact me if you have questions about our comments.

(See attached file: 94-032-DOE Scoping for Recapitalization of Navy Infrastructure.doc)

Theo Mbabaliye, Ph.D.
US EPA Region 10
1200 6th Ave., Suite 900
Seattle, WA 98101-3140
Phone: (206) 553-6322
Fax: (206) 553-6984



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 10

1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
ECOSYSTEMS, TRIBAL AND
PUBLIC AFFAIRS

9/02/2010

Gregory F. Holden (08U-Naval Reactors)
Naval Sea Systems Command
1240 Isaac Hull Avenue, SE, Stop 8036
Washington Navy Yard, DC 20376-8036

Subject: Proposed Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel
Handling and Examination at the INL in Idaho (EPA Project No.: 94-032-DOE)

Dear Mr. Holden:

The U.S. Environmental Protection Agency (EPA) has reviewed the Department of Energy (DOE) Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) for the proposed **Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling and Examination** at the Idaho National Laboratory (INL) Site in Idaho. Our review was conducted in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA). Section 309 requires EPA to review and comment in writing on the environmental impacts associated with all major federal actions.

According to the NOI, DOE proposes to evaluate potential environmental impacts of a proposal to sit and construct new facilities for transferring, preparing, examining, and packaging Naval spent nuclear fuel and other irradiated materials at INL. The existing Expended Core Facility (ECF) infrastructure has been in service for over 50 years and is a growing maintenance burden. Recapitalization of this infrastructure would ensure continued naval nuclear-powered operations and missions for the next 40 years or more and support DOE's commitments identified in the State of Idaho, DOE, and Navy's 1995 Settlement Agreement and related amendments on the bringing, handling, and removal of Navy spent nuclear fuel materials at INL.

The NOI has identified a tentative list of resource areas/issues to be addressed. The list is an appropriate starting point for analyzing the effects of the proposed action and its alternatives. Our attached scoping comments are provided to inform DOE of issues that EPA believes are important and should be considered in the NEPA analysis for the project. Thank you for the opportunity to provide comments at this stage of the EIS development. If you have questions or concerns regarding our comments, please contact me at (206) 553-6322.

Sincerely,

/S/

Theogene Mbabaliye, NEPA Reviewer
Environmental Review and Sediment Management Unit

**EPA Scoping Comments on the proposed
Recapitalization of Infrastructure Supporting
Naval Spent Nuclear Fuel Handling and Examination
at the Idaho National Laboratory in Idaho**

Environmental effects

1 The EIS should include environmental effects and mitigation measures. This would involve delineation and description of the affected environment, indication of resources that would be impacted, the nature of the impacts, and a listing of mitigation measures for the impacts. The NOI indicates that the proposed project has the potential to impact a variety of resources, including water, air, wildlife and their habitat, and human health. These and other impacts should be minimized.

Water resources impacts

2.a Preventing water quality degradation is one of EPA's primary concerns. Section 303(d) of the Clean Water Act (CWA) requires States (and Tribes with approved water quality standards) to identify water bodies that do not meet water quality standards and to develop water quality restoration plans to meet established water quality criteria and associated beneficial uses.

2.b The EIS must disclose which waters may be impacted by the project, the nature of potential impacts, and specific pollutants likely to impact those waters. It should also report those water bodies potentially affected by the project that are listed on the State's and any Tribe's most current EPA approved 303(d) list. The EIS document should describe existing restoration and enhancement efforts for those waters, how the proposed project will coordinate with on-going protection efforts, and any mitigation measures that will be implemented to avoid further degradation of impaired waters. Also, please note that anti-degradation provisions of the CWA prohibit degrading water quality in waterbodies where water quality standards are currently being met.

2.c Public drinking water supplies and/or their source areas often exist in many watersheds. Source water areas might exist within the watershed in which the proposed infrastructure would be located. Source water is water from streams, rivers, lakes, springs, and aquifers that is used as a supply of drinking water. The 1996 amendments to the Safe Drinking Water Act (SDWA) require federal agencies to protect sources of drinking water for communities. Since construction and operation of the project may impact sources of drinking water, EPA recommends that DOE contact the Idaho Department of Environmental Quality (IDEQ) to help identify source water protection areas within the project area. The EIS document should identify all:

- a) Source water protection areas within the project area.
- b) Activities that could potentially affect source water areas.
- c) Potential contaminants that may result from the proposed project.
- d) Measures that would be taken to protect the source water protection areas in the draft EIS.

2.e The project area is located within the Eastern Snake River Plain Aquifer, which has been designated as a Sole Source Aquifer by EPA. This aquifer is vulnerable to being contaminated from surface activities such as septic sewage disposal, herbicide applications and potential spills of toxic substances. Since groundwater may be impacted by the project, the EIS should fully analyze impacts to groundwater, including reasonably foreseeable direct, indirect and cumulative impacts to groundwater and surface water resources. Guidance documents that address contaminant levels in soil to protect groundwater include: "Soil Screening Guidance for Radionuclides: User's Guide" (OSWER Directive No. 9355.4-16A), October 2000, and "Soil Screening Guidance for Radionuclides: Technical Background Document" (OSWER Directive No. 9355.4-16), October 2000. These documents can be found online at: <http://www.epa.gov/superfund/health/contaminants/radiation/radssg.htm>.

- 2.d** Construction of facilities and access roads, and road use may also compact the soil, thus changing hydrology, runoff characteristics, and ecological function of the area, affecting flows and delivery of pollutants to water bodies. The EIS should note that, under the CWA, any construction project disturbing a land area of one or more acres requires a construction storm water discharge permit or the National Pollutant Discharge Elimination System (NPDES) permit for discharges to waters of the United States. The EIS should document the project's consistency with applicable storm water permitting requirements and should discuss specific mitigation measures that may be necessary or beneficial in reducing adverse impacts to water quality and aquatic resources.
- 2.c**

Hazardous Materials

- 3.a** The EIS should address potential direct, indirect and cumulative impacts of hazardous waste from construction and operation of the project. The document should identify projected hazardous waste types and volumes, and expected storage, disposal, and management plans. It should address the applicability of state and federal hazardous waste requirements. Appropriate mitigation should be evaluated, including measures to minimize the generation of hazardous waste (i.e., hazardous waste minimization). Alternate industrial processes using less toxic materials should also be considered.
- 3.b**
- 3.c**

- 3.d** Since the handling of radioactive materials may affect the parties involved with the project, as well as the public who would access the project area during and after project construction, the EIS should include information ensuring the public that no hazardous materials would be released in the environment as a result of the proposed project activities. During the spent nuclear fuel receipt, transfer, and repackaging operations, it is possible that gaseous, liquid, and solid low-level radioactive waste would be generated. The EIS should discuss probable impacts from exposure to such waste, potential pathways and periods of exposure. Any waste generated should be managed to limit the amounts and maintain exposures as low as reasonably achievable (or ALARA), especially if the waste contains radionuclides of concern, such as iodine-129 and tritium.
- 3.e**

- 3.f** During the proposed project operations, accidents may also occur and result in release of highly radioactive waste (spent fuel) to the environment. The EIS for the project should describe measures that will be taken to ensure that the chances of such an accident would be kept to a minimum, but also to ensure that the workers involved in transferring, preparing, examining, and

packaging naval spent nuclear fuel and other irradiated materials, including those loading and unloading shipments are protected.

Seismic Risk

Because the INL Site may be within an active tectonically active area, it is possible that project activities could cause increased seismicity (earthquake activity). The magnitude of such activity is usually low, ranging from 1 - 3 on the Richter scale. However, we recommend that the EIS discuss the potential for seismic risk and how this risk will be evaluated, monitored, and managed to ensure that critical facilities, including nuclear facilities, remain safe during and after any earthquake. A seismic map should either be referenced or included in the EIS.

Air quality and human health impacts

5.a The EIS should provide a detailed discussion of ambient air conditions (baseline or existing conditions), National Ambient Air Quality Standards (NAAQS), and criteria pollutant

5.b non-attainment areas in the project area. The EIS should estimate emissions of criteria pollutants for the project site and discuss the timeframe for release of these emissions over the lifespan of the project (40 years). The EIS should also analyze the potential impacts to air quality (including cumulative and indirect impacts) from the project construction and operation.

5.d The EIS should specify emission sources and quantify these emissions. Such an evaluation is necessary to assure compliance with State and federal air quality regulations, and to disclose the potential impacts from temporary or cumulative degradation of air quality. The EIS should include:

- Detailed information about ambient air conditions, NAAQS, and criteria pollutant non-attainment areas in and around the project area.

- Data on emissions of criteria pollutants from the proposed project and discuss the timeframe for release of these emissions over the lifespan of the project.

- Specific information about pollutant from mobile sources, stationary sources, and ground disturbance. This source specific information should be used to identify appropriate mitigation measures and areas in need of the greatest attention.

- An Equipment Emissions Mitigation Plan that identifies actions to reduce diesel particulate, carbon monoxide, hydrocarbons, and NOx associated with construction activities.

- Evaluation of radioactive emissions, including the effects of radon emissions.

Cumulative Impacts

The Council on Environmental Quality (CEQ) definition of *cumulative impact* is "the impact on the environment which results from the incremental impact 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 result from individually minor but collectively significant actions taking place over time. The cumulative impacts analysis should therefore provide the context for understanding the magnitude of the impacts of the alternatives by analyzing the impacts of other past, present, and

reasonably foreseeable projects or actions at and near the site, then considering those cumulative impacts in their entirety. Where adverse cumulative impacts may exist, the EIS should disclose the parties that would be responsible for avoiding, minimizing, and mitigating those adverse impacts.

EPA has also issued guidance on how we are to provide comments on the assessment of cumulative impacts, *Consideration of Cumulative Impacts in EPA Review of NEPA Documents*, which can be accessed online at:

<http://www.epa.gov/compliance/resources/policies/nepa/cumulative.pdf>. This guidance states that in order to assess the adequacy of the cumulative impacts assessment, five key areas should be considered. EPA tries to assess whether the cumulative effects' analysis:

- a) Identifies resources, if any, that are being cumulatively impacted.
- b) Determines the appropriate geographic (within natural ecological boundaries) area and the period over which the effects have occurred and will occur.
- c) Looks at all past, present, and reasonably foreseeable future actions that have affected, are affecting, or would affect resources of concern.
- d) Describes a benchmark or baseline.
- e) Includes scientifically defensible threshold levels.

Climate Change Effects

Scientific evidence supports the concern that continued increases in greenhouse gas emissions resulting from human activities contribute to climate change. Effects of climate change may include changes in hydrology, sea level, weather patterns, precipitation rates, and chemical reaction rates. Therefore, the EIS document should consider how resources affected by climate change could potentially influence the proposed project and vice versa, especially within sensitive areas. Also, the EIS should quantify and disclose greenhouse gas emissions from the project and discuss mitigation measures to reduce emissions.

Coordination with Tribal Governments

The EIS should describe the process and outcome of government-to-government consultation between DOE and each of the tribal governments that would be affected by the project, issues that were raised, if any, and how those issues were addressed.

Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* (November 6, 2000), was issued in order to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, and to strengthen the U.S. government-to-government relationships with Indian tribes.

Environmental Justice and Public Participation

The EIS should include an evaluation of environmental justice populations within the geographic scope of the project. If such populations exist, the EIS should address the potential

for disproportionate adverse impacts to minority and low-income populations, and the approaches used to foster public participation by these populations.

One tool available to locate Environmental Justice populations is the Environmental Justice Geographic Assessment tool, which is available online at: <http://epamap14.epa.gov/ejmap/entry.html>. Also, Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), directs federal agencies to identify and address disproportionately high and adverse human health or environmental effects on minority and low-income populations, allowing those populations a meaningful opportunity to participate in the decision-making process.

Monitoring

The proposed project has the potential to impact a variety of resources and for an extended period. Because of that, we recommend that the project be designed to include an environmental inspection and mitigation monitoring program to ensure compliance with all mitigation measures and assess their effectiveness. The EIS document should describe the monitoring program and how it will be used as an effective feedback mechanism so that any needed adjustments can be made to the project to meet environmental objectives throughout the life of the project.

10

Response to E-Mail Comment #3

Items #1-10:

This comment duplicates Mail Comment #2. Please refer to the responses to Mail Comment #2.

E-Mail Comment #4

From: ROGER TURNER KAYE TURNER [REDACTED]
Sent: Thursday, September 02, 2010 11:01 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: Comment on EIS Scoping -Navy Spent Nuclear Fuel Recapitalization
Attachments: navy-SNF-Scope910.doc

Mr. Gregory F. Holden (DBU-Naval Reactors) Naval Sea Systems Command 1240 Isaac Hull Avenue, SE, Stop 8036 Washington Navy Yard, DC 20376-8036

Submitted by email to ecfrecapitalization@unnpp.gov

SUBJECT: Scoping Comments for Recapitalization of Infrastructure supporting Spent Nuclear Fuel Handling

Mr. Greg Holden:

Please find attached my comments on the Navy Scoping for Recapitalization.

Please let me know if you have any problems opening the attachment.

Regards,

Roger Turner

September 2, 2010

Roger Turner
[REDACTED]

Mr. Gregory F. Holden (O8U-Naval Reactors)
Naval Sea Systems Command
1240 Isaac Hull Avenue, SE, Stop 8036
Washington Navy Yard, DC 20376-8036

Submitted by email to ecfrecapitalization@unnpp.gov

SUBJECT: Scoping Comments for Recapitalization of Infrastructure supporting Spent Nuclear Fuel Handling

Mr. Holden:

Thankyou for this opportunity to comment on this important Navy project.

Intro

The Notice of Intent (NOI) lacks sufficient detail, particularly with respect to the range of alternatives, with Spent Nuclear Fuel (SNF) handling and storage to allow the public to provide well-informed comments on the specifics of the project, but the U.S. Navy Nuclear Power and Propulsion (NNPP) have an opportunity to clearly address all the elements of it in the pending EIS.

1. This new EIS must be specific and cannot rely heavily on the older 1995 EIS.

1.a

The 1995 Programmatic EIS cannot be relied on to reference site specific changes needed in this Recapitalization EIS. In order to meet NEPA requirements the new EIS must be specific as to the projects and upgrades, along with their costs and environmental impacts. The Programmatic EIS focused primarily on the broad issue of where to put certain SNF in the United States. It did not provide detail, nor provide tiering, for the foreseeable specific projects. An example of this lack of detail is the dry storage project, from Table 5.3.1 of appendix C, of the old EIS:

"Design, construct and operate a facility for the preparation of naval spent nuclear fuel for shipment to storage facilities".

The above sentence was most detail the EIS provided. There was no schedule, no tiering of the project, no detailing of the individual sub-project costs, no specific hard look at environmental impacts. The lack of detail is not just in dry storage but in each aspect of the Navy SNF process at the INL.

1.b

Consequently, in order to adhere to NEPA, the new EIS must get down to details, otherwise, the Navy is just adding more mystery to the project, rather than clarifying them. It must answer what, where, when, how, for the Navy's Spent Nuclear Fuel, including the cumulative environmental impacts. The EIS must contain a "detailed statement" including, inter alia, the environmental impacts of the proposed project, and all reasonable alternatives to the project (42 U.S.C. § 4332(c)).

1.c

Another example of the disconnection between the Programmatic EIS (hereafter, "PEIS") of 1995 and the present conditions, is the PEIS, anticipated that a final repository for SNF would be progressing if not finalized by this time. But now Yucca Mountain will not likely be licensed and Congress has not authorized the funding to investigate an alternative site.

With the failure of Yucca Mountain, many of the original assumptions are erroneous. A final repository will not likely be ready by 2035 (the old deadline to remove all Navy SNF). The continued reliance on temporary storage designs, as approved by the PEIS, are no longer valid.

2. Information lacking on Expended Core Facility with a gap in NEPA review:

2.a

The programmatic EIS of 1995 specified, in Table 5.3.1-1, a project for the Expended Core Facility, that included design and construction in order to handle Navy SNF. Now, a NEPA review is proposed to "recapitalize" this same facility. Hence, the new EIS needs to detail what was actually constructed at the ECF and "covered" under the old Programmatic EIS, and what has gone into disrepair, or is about to go into disrepair, at this same facility that, according to the new EIS, needs improved "infrastructure"?

2.b

The following must be answered: What did the Navy build at the ECF over the last 15 years since the PEIS and what do they need to build now? How many water pools are at the ECF? What are the construction details? Does the ECF meet seismic code and new regulations for storing SNF? Does the Navy send waste from the ECF to the RWMC, or other INL sites, and if so, what classification is this waste and volume? The latter issue should be reviewed under the NEPA requirements for cumulative environmental impacts.

2.c

The EIS process of reviewing Spent Nuclear Fuel, needs to stop vague references to improvements at the ECF, but without ever really describing them, documenting the costs, the schedules, the waste streams, alternatives, or the cumulative environmental impacts.

2.d

3. New EIS should describe wet pool capacity and process.

3

The 1995 EIS reviewed and approved an increase in the rack capacity at building 666 in order to store Navy SNF. Does the Recapitalization project require new pool storage/handling at the ECF? Why can't the building at 666, with its expanded racks, handle that capacity? The Recapitalization EIS should describe the capacity and purpose of pool storage needs at both facilities.

4

4. NEPA review needed on Idaho Settlement Agreement, Yucca Mountain related to Navy Spent Nuclear Fuel

One of the big drivers of the Programmatic EIS was the Settlement Agreement between the Navy, DOE and Idaho. Since then, the parties changed the Agreement to open the door to receiving Navy Spent Nuclear Fuel after the deadline in the original Agreement. This

extension, along with an almost certain failure of Yucca Mountain or any other foreseeable final SNF repository changes the scope of the INL's purpose from an temporary storage site...to a more permanent one. There should be NEPA review by the Navy that expands on the environmental consequences of this extension of purpose at the INL, otherwise the EIS review is completely open ended with respect to the life-span of SNF handling and storage, and associated impact to the environment and safety.

5. No Need to inspect all Navy Spent Fuel.

The draft EIS should provide a full explanation of the need for transporting all of this Spent Nuclear Fuel (SNF) waste to Idaho. The situation has changed since completion of the Programmatic EIS. It seems apparent that the Navy does not need to examine each fuel rod that has been removed from a ship, but rather only a representative sample, unless it's an experimental one. The EIS should consider the additional alternative of sending a representative number of fuel rods to Idaho for examination but cut out and keep the remaining spent fuel at the Navy shipyards temporarily until a national waste repository is licensed for final disposal. (In any case, there should be established a Spent Fuel Review Group, that includes staff from the state of Idaho and other scientists to review the need to ship SNF to Idaho because otherwise there may be a tendency for the Navy to send all the SNF to Idaho, all of the time, without justification.)

After over fifty years of experience in de-fueling these ships' reactors, the Navy has a fairly well-defined classification system for submarines and surface vessels and corresponding propulsion, fuel, and cladding characteristics that precludes the need for each fuel rod to be sent to INL for examination and storage.

6. EIS needs to compare inspection alternatives at the Navy Shipyards and INL.

Much of the fuel rods that do require inspection may be completed with low-technical equipment and the EIS should review an alternative to perform this task at the shipyards in combination with on-site temporary storage there. It is very unlikely that the Navy would gain significant data by performing rigorous high-technical inspection of each fuel rod before assigning it to storage.

7. EIS should separately address storage and inspection needs.

The EIS should not combine the need to examine fuel rods with the storage of them: they must be separately addressed. It should not be inferred that since the Navy wants to examine their fuel rods at the INL, that they then be automatically assigned for "temporary" storage at the INL. It may be that a less expensive alternative, in the long run, for the Navy is to have at least one shipyard on each coast of the U.S. that stores the majority of the fuel rods (those that are not individually examined), until they can be shipped to the final certified waste repository. If some of the de-fueled SNF needs examined, but only by a technically simple means (i.e. visual or photographic) the EIS should address the possibility of doing such an examination at the shipyard, without the need to ship it to Idaho for storage.

8. **EIS should clearly define wet and dry storage needs, criteria and alternatives.**
 - 8.a The timing between defueling of the SNF at the shipyards, transport to the INL and the appropriate holding period in water pools before inspection and final transfer to dry storage –all needs to be fully reviewed in the EIS. Are the fuel rods that are scheduled for examination always held in water pools prior to that examination and for how long? Are they retrieved from dry storage for examination? Does the Navy have or need additional retrievable dry storage?
 - 8.b The EIS needs to clearly explain the dry storage acceptance criteria in terms of thermal heat and rod integrity. The time-line requirements need to be reviewed for these step-wise transfers to dry storage and new alternatives explored.
 - 8.c The EIS needs to examine the dry cell infrastructure and security requirements and explore the alternative of dry-cell storage at the Navy yards.
9. **The “No Action Alternative” must be changed in EIS.**
 - 9.a The NEPA and court cases are clear in their prohibition of Federal projects that are carried out in small steps, which if combined into a single project, would require NEPA review. The No-Action Alternative proposed likely exceeds that threshold. Please include cost estimates for each overhaul project anticipated with the “No Action Alternative.”
 - 9.b Does the Navy propose modification or expansion of dry storage or the pool storage as part of the “No Action Alternative”? If so, this should not be classified as a No-Action Alternative because it goes beyond routine maintenance up-grades. The EIS should revise what is now “No-Action” to a separate alternative such as the “Minor Overhaul Alternative”; and then the “No Action” alternative should be limited to simple maintenance of the existing system (but not re-building, significantly expanding, or overhauling it).
 - 9.c

Summary. Much has changed since the Programmatic EIS of 15 years ago: The Idaho Settlement Agreement was revised, the failure of the Yucca Mountain site to be licensed, with no alternate site under review, and the Navy has spent millions of dollars on refurbishing the infrastructure at the INL in order to receive Spent Nuclear Fuel. Because the Programmatic EIS was intended to be a broad review of Navy Spent Fuel handling and storage, one that focused primarily on National SNF siting issues, very limited project descriptions were identified or reviewed in detail. But NEPA requires details, and the public needs them in order to provide learned input on INL’s role in handling, examining, and storing SNF. The Navy and DOE have an affirmative obligation to comprehensively review the impacts and alternatives of the transport, core cutting, examination, storage and waste stream of Naval SNF. The Addendum to the Idaho Settlement opened the door to receiving SNF after the 2035 deadline –an open ended schedule, not yet reviewed by the NEPA process.

In any case, the Navy must provide detailed review of the Recapitalization project, without relying on a vague and dated programmatic EIS. So far, the public has not been provided with

the details of the past 15 years of work at the ECF, Building 666, or other SNF infrastructure improvements, upgrades, in violation of NEPA. The Council on Environmental Quality ("CEQ") regulations implementing NEPA, provide that the consideration of alternatives is "the heart of the environmental impact statement." 40 C.F.R. § 1502.14. The Navy now has an opportunity to truly involve the public in their decision-making by providing the detailed review of Navy SNF processing and associated infrastructure; and to provide a wider range of alternatives than that proposed in the Notice of Intent for a Recapitalization EIS.

Thankyou for providing public hearings in several sites, including Pocatello, and for the opportunity to comment.

Cc: Susan Burke, INL Coordinator

Response to E-Mail Comment #4

Responses to Roger Turner's comments follow:

Introductory Item:

The information provided in the NOI was sufficient to allow informed comments on the scope of the planned EIS.

Item #1.a:

As discussed in Section 1.4, this EIS has been prepared to fulfill NEPA requirements as related to the recapitalization of naval spent nuclear fuel handling capabilities. It provides specific descriptions of impacts (direct, indirect, and cumulative) from reasonable alternatives. It uses updated information without heavy reliance on DOE 1995.

Item # 1.b:

Detailed unclassified information on naval spent nuclear fuel management, including a description of naval spent nuclear fuel receipt, handling, and processing for dry storage at ECF, was included in Appendix D of DOE 1995. Sections 1.1.3 and 1.1.4 of this EIS provide current unclassified information on naval spent nuclear fuel management, including a description of facilities where these activities are performed.

Cumulative impacts for the proposed action are addressed in Chapter 5 of this EIS.

Item #1.c:

DOE 1995 evaluated the transportation of naval spent nuclear fuel to the INL for examination and storage. Based on the evaluations in DOE 1995, the decisions in ROD 1995 to transport naval spent nuclear fuel to the INL were not dependent upon having a geologic repository at Yucca Mountain. In fact, ROD 1995 states that relative ranking of the alternatives would remain the same for possible future naval spent nuclear fuel disposal scenarios.

Item #2.a:

Section 1.1.4 of the EIS documents the current ECF configuration and current and planned naval spent nuclear fuel handling infrastructure at NRF. The commenter refers to Table 5.3.1-1 of DOE 2005a. The only entry in that table relevant to the NNPP at NRF is the Expended Core Facility Dry Cell Project. In the description of the project status, it states that "process limitations identified with the Dry Cell Facility and the volume of naval spent nuclear fuel that must be processed and loaded into canisters for dry storage led Naval Reactors to the conclusion that continuation of fuel processing in water pools was more likely to support the objectives of the Idaho Settlement Agreement and support fleet operating schedules than dry fuel processing. Construction is continuing to implement canister loading and dry storage operations at production levels." That entry describes the cancellation of the dry cell project and construction of the Spent Fuel Packaging Facility described in Section 1.1.4. The entry further describes how the change in direction is bounded by the analysis in DOE 1996.

Item #2.b:

Section 1.1.4 of the EIS documents the current ECF configuration and current and planned naval spent nuclear fuel handling infrastructure at NRF. These descriptions cover what has been constructed at ECF and NRF relative to naval spent fuel handling operations in the past 15 years.

As described in Section 1.1.4, the ECF water pools were constructed in four stages, referred to as Water Pools #1 through #4. The total length of the ECF water pool is now approximately 130 meters (420 feet), with pool depths ranging from approximately 6 to 14 meters (20 to 45 feet). ECF is currently approximately 305 meters (1000 feet) long and 60 meters (190 feet) wide, with an 18-meter (59-foot) high bay running the length of the building.

Item #2.c:

As noted in Section 1.1.4, the water pools at ECF were constructed sequentially between 1957 and 1979, and range in age from 35 years to 57 years. Each stage of expansion met the seismic code applicable at the time. The ECF water pools have never undergone a complete refurbishment; and, therefore, have not been upgraded to industry standards for storing spent nuclear fuel. However, a seismic analysis of the ECF water pool reinforced concrete structures and adjacent building steel superstructure concluded that the reinforced concrete portion of the pools and adjacent building superstructure meet the seismic strength requirements of DOE 2002b for a Performance Category 3 structure. The analysis verified that the ECF reinforced concrete pools and adjacent building superstructure would maintain structural stability in a design basis earthquake. Additionally, the ECF overhead cranes were determined to remain on the crane rails during a design basis earthquake. For a new facility, structures, systems, and components important to safety would be designed to the appropriate natural phenomena hazard category using current design and construction standards.

Item #2.d:

As discussed in Section 3.14, NRF generates Remote-Handled Low-Level Waste that is currently disposed of at the RWMC. In addition, non-hazardous waste is sent to the INL landfill at the Central Facilities Area for disposal. Cumulative impacts from waste management are discussed in Chapter 5.

Item #3:

The capacity of the ECF water pool is described in Section 1.1.4. The capacity of the New Facility Alternative water pool is described in Section 2.1.3. The naval spent nuclear fuel handling management process is described in Section 1.1.3.

Building 666 is located at Idaho Nuclear Technology and Engineering Center (INTEC), not NRF. In accordance with ROD 1997a, naval spent nuclear fuel at INTEC is being returned to NRF to be loaded into canisters for temporary dry storage to meet the requirements of SA 1995 and SAA 2008.

As discussed in Section 2.2, new facility alternative locations other than NRF, including INTEC, were evaluated but eliminated from further analysis.

Item #4:

NEPA evaluation is neither necessary nor appropriate for the 1995 Settlement Agreement (SA 1995). SA 1995 resolved NEPA concerns related to DOE 1995.

As discussed in Section 1.5.3 of the EIS, actions related to dry storage of naval spent nuclear fuel at NRF and actions related to transportation and disposal of naval spent nuclear fuel at Yucca Mountain are outside the scope of this EIS. In particular, actions to develop interim storage facilities or geologic repositories (as suggested by the Blue Ribbon Commission on America's Nuclear Future (BRC 2012)) in lieu of the planned geologic repository at Yucca Mountain will be subject to their own NEPA analysis.

In DOE 1995 and DOE 1996, environmental impacts associated with dry storage normal operations and hypothetical accident scenarios were evaluated for several container system alternatives with varying naval spent nuclear fuel capacities. For dry storage operations, arrays of 345 to 585 dry storage containers were evaluated. The NNPP does not expect to have more than 585 dry storage containers by 2048. Since each container system would be designed to meet 10 C.F.R. § 72 licensing requirements for storage of spent nuclear fuel, the analyses were insensitive to container system capacity and quantity. The delay in opening a geologic repository until 2048 would not result in changes to impacts described for the containers evaluated in DOE 1996. Therefore, the previous EIS analyses and conclusions remain valid.

Item #5:

The commenter is incorrect in stating that since the completion of the 1995 EIS the situation has changed such that the Navy does not need to examine each fuel rod that has been removed from a ship, but rather only a representative sample. The current in-service conditions experienced by naval nuclear fuel are more demanding than in the past. The designs of naval nuclear fuel systems continue to evolve, and some desirable performance characteristics (e.g., a life-of-the-ship fuel design for aircraft carriers) have not yet been achieved. The continuing comprehensive program of examining all naval spent nuclear fuel provides information that validates naval nuclear fuel designs and performance models. This validation is essential to support resolution of emergent fleet problems, further refinement of the models, and development of the next generation of naval nuclear fuel designs.

Item #6:

The commenter is incorrect in stating that most spent fuel inspections may be completed with low-technical equipment. Very complex and sophisticated equipment is needed to obtain needed information from examination of naval spent nuclear fuel while protecting workers from the high radiation fields associated with naval spent nuclear fuel. The infrastructure for such inspections does not exist at the naval shipyards. However, this infrastructure does exist at several locations on the INL. As indicated in the original NOI, the U.S. Navy will include those locations when alternatives for recapitalization of the examination program infrastructure are evaluated.

Item #7:

As noted in Section 1.5.3, alternatives for management of spent nuclear fuel managed by the DOE, including naval spent nuclear fuel, were comprehensively evaluated in DOE 1995. Based on that evaluation, ROD 1995 chose to implement regionalized spent fuel management by fuel type. Under that alternative, naval spent nuclear fuel is managed at the NRF at INL. There are no factors that warrant reconsideration of that decision.

Item #8.a:

Sections 1.1.3 and 1.2 describe the process for unloading naval spent nuclear fuel from shipping containers into water pools at ECF. The NNPP complies with the restrictions of SA 1995 limiting the

time naval spent nuclear fuel can remain in the water pool to a period of 6 years with an exception for a volume of not more than 750 kilograms heavy metal of naval spent nuclear fuel in archival wet or dry storage as necessary for comparison to support fuel designs under development or in use in the U.S. Navy fleet. The archival fuels are not subject to the 6-year time-frame limit.

Item #8.b:

The scope of this EIS no longer includes recapitalization of examination infrastructure. In addition, discussion of dry storage is outside the scope of this EIS, as described in Section 1.5.3.

Item #8.c:

Dry storage is outside the scope of this EIS, as described in Section 1.5.3.

Item #8.d:

As noted in Section 1.5.3, alternatives for management of spent nuclear fuel managed by the DOE, including naval spent nuclear fuel, were comprehensively evaluated in DOE 1995. Based on that evaluation, ROD 1995 chose to implement regionalized spent fuel management by fuel type. Under that alternative, naval spent nuclear fuel is managed at NRF at INL. There are no factors that warrant reconsideration of that decision.

Item #9.a:

The No Action Alternative, as currently defined in Section 2.1, limits efforts to preventative and corrective maintenance. This level of effort may not keep the infrastructure in safe working order until 2060 (i.e., maintenance alone may not be sufficient to sustain the proper functioning of structures, systems, and components). In addition, this level of effort will not provide the capability to unload M-290 shipping containers. Therefore, the No Action Alternative is an unreasonable alternative that does not meet the purpose and need for the proposed action. While the concept of a minor overhaul does not warrant analysis as a stand-alone alternative since it is bound by the Overhaul Alternative, it is described in Section 2.3 as part of the scope of the New Facility Alternative. The NNPP would continue to operate ECF during new facility construction, during a transition period, and after the new facility is operational for examination work. To keep the ECF infrastructure in safe working order during these time periods, some limited upgrades and refurbishments may be necessary. Details are not currently available regarding which specific actions will be taken; therefore, they are not explicitly analyzed as part of the New Facility Alternative. However, the environmental impacts from these upgrades and refurbishments are considered to be bounded by the environmental impacts described for the Refurbishment Period of the Overhaul Alternative in Chapter 4.

Item #9.b:

Planned expansions to dry storage are consistent with ROD 1997a. In ROD 1997a, the DOE and the Navy decided that all canisters loaded with naval spent nuclear fuel would be stored in a developed area east of ECF prior to shipment to an interim storage site or geologic repository. Consistent with the evaluation, the first dry storage facility, known as the Overpack Storage Building (OSB), was constructed in 2001, adjacent to ECF. Since 2001, two Overpack Storage Expansion (OSE) buildings have been constructed. An additional OSE is planned if needed to accommodate the growing number of concrete overpacks loaded with naval spent nuclear fuel canisters. The temporary dry storage of naval spent nuclear fuel in the OSB and OSEs is consistent with the evaluation in DOE 1996 and enables the NNPP to continue to meet its obligations in SA 1995 for dry storage.

E-Mail Comment #5

From: Peter Rickards [REDACTED]
Sent: Friday, September 03, 2010 4:27 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: Written public comment for Navy EIS for INL...

IDAHO FAMILIES FOR THE SAFEST ENERGY

Official scoping issues to supplement my oral presentation in Twin Falls please.

While we admire, appreciate, and love the brave Navy patriots, please answer the following scoping questions in your EIS.

- 1) There are no seaports for nuclear submarines in Idaho. Instead of building new facilities at INL for \$2 Billion, please analyze relocating and clustering Navy fuel operations at the DOE's Savannah River facility. This is presently not under consideration in your EIS, which is illegal by NEPA law, ie, an "irretrievable commitment of resources" stacking the deck for future clustering around the \$2 Billion spent in Idaho
- 2) Specifically analyze worst case scenario accidents or terrorism, or disgruntled employee sabotage, comparing that fallout spreading from Idaho across the country and cities, vs the fallout at SR's east coast, where that has a chance to blow away from cities out to the ocean.
- 3) Analyze INL vs SR to see that clustering the Navy operations on the east coast will save money and safety risks from transporting the dangerous spent fuel across the country to Idaho.
- 4) Please see the documented science references below. Please analyze inhalation of one lone particle of the spent fuel's pu-238 to see it would exceed the 10 mrem public exposure limit, since the HEPA filters can NOT contain plutonium at the 99.97% bragged about in all EIS's so far. Note the particle size problem from criticalities that the DOE has refused to answer yet in all previous EIS's.
- 5) Please analyze pu-238 inhalation from transportation accidents where a fire lasts 2 hours, and as the DOE documents admit, allowing an unbounded release of the spent fuel. That is why clustering at SR and greatly lessening the transport miles is important to analyze.

<http://rpd.oxfordjournals.org/content/83/3/221.abstract>

Variability in PuO₂ Intake by Inhalation: Implications for Worker Protection at the US Department of Energy

1. B.R. Scott
<<http://rpd.oxfordjournals.org/search?author1=B.R.+Scott&sortspec=date&submit=Submit>> and
2. A.F. Fencl
<<http://rpd.oxfordjournals.org/search?author1=A.F.+Fencl&sortspec=date&submit=Submit>>

Abstract

This paper describes the stochastic exposure (SE) paradigm where, at most, small numbers of airborne toxic particles are presented for inhalation. The focus is on alpha-emitting plutonium dioxide (PuO₂) particles that may be inhaled by Department of Energy (DOE) workers. Consideration of the SE paradigm is important because intake of only a few highly radioactive PuO₂ particles such as ²³⁸PuO₂, could greatly exceed the annual limit on intake (ALI) used to control worker exposure. For the SE paradigm, credible intake distributions evaluated over the population at risk are needed, rather than unreliable point estimates of intake. Credible distributions of radiation doses and health risks are also needed. Because there are limited data on humans who inhaled PuO₂, these distributions must be calculated. Calculated distributions are presented that relate to the intake of radioactivity via inhaling polydisperse PuO₂ particles. The results indicate that a large variability in radioactivity intake is expected when relatively small numbers of PuO₂ particles are inhaled. For the SE paradigm, one cannot know how many PuO₂ particles were inhaled by an individual involved in a given inhalation exposure scenario. Thus, rather than addressing questions such as 'Did the calculated worker's intake of ²³⁸PuO₂ exceed the ALI?', it is better to address questions such as 'What is the probability that ²³⁸PuO₂ intake by a given worker occurred and exceeded the ALI?' Mathematical tools for addressing the latter question are presented, and examples of their applications are provided, with emphasis on possible DOE worker exposures at the Rocky Flats facility near Denver, Colorado. The alpha-emitting isotopes ²³⁸Pu, ²³⁹Pu, ²⁴⁰Pu and ²⁴²Pu are found at Rocky Flats. Although ²³⁸Pu is thought to be present in relatively small amounts there, intake via inhalation of only a few ²³⁸PuO₂ particles could greatly exceed the ALI.

+ Radiation Protection Dosimetry
http://www.oxfordjournals.org/our_journals/rpd/terms.html
*

I needed to share some vital information on HEPA filter problems and plutonium transport in water

that effects the true plutonium emissions from the proposed pit facility and the plutonium laced low

level and Transuranic waste generated. I am a podiatrist in Twin Falls , Idaho. As a citizen, and as a

member of the CDC advisory panel on INEEL, I have gathered some vital documents on HEPA filter

problems and Pu transport problems . I hope you will address these issues. The HEPA filter issues

really effects almost all nuclear projects. Please contact me for more details if desired, but here is an

overview.

To get an air quality permit, the project has to show they do not expose the public to more than 10

mrem of radiation from normal operations (and my memory says that there is a 100 mrem limit to

anticipated accidents). The filters are bragged to be 99.97% efficient for 0.3 micron particles, and

more efficient for both smaller and larger particles. This allows them to calculate a very low rate of

release, qualifying easily for a permit.

Here are the 2 main areas of filter problems, that remain unquantified. I have called for testing the

filters, in lab, for these problems, at all so-called Environmental Impact scoping hearings. To date,

these questions have remained unanswered.

1) Most folks know that the filters can burn, but even if the fire is contained and put out by

sprinklers, that humidity can ruin the filters. The DOE's May 1999 Defense Nuclear Facilities Safety

Board(DNFSB/TECH-23) had this to say, on page 2-5, " When installed fire suppression systems are

activated to protect systems, structures, and components inside confinement, the moisture-laden air

carried downstream to the HEPA filters can seriously degrade filter performance-at a time when

high-efficiency filter performance is crucial." All this is "despite the fact that water repellents are

applied to the medium during manufacturing." This does not stop the DOE from saying that the 3

HEPA filters in a row combine for 10 to the minus 9th power filtering efficiency (99.999999999%).

Criticalities (not in report) are also another unquantified accident, that could be quantified truthfully

in lab settings. I have a great DOE paper from an FL Horn, replicating a criticality with plutonium.

On day one, the particles were between 0.1 micron down to less than 0.005 micron. Plutonium is a

heavy metal, and often a wind resuspension factor of 1 per million particles is assigned in the EIS. In

this FL Horn experiment, the plutonium particles were so light, that in this windless closed cell, they

floated for 3 days , bouncing around on the brownian motion of the air molecules! They slowly aggregated and precipitated, but that was in this closed cell.

2) "Alpha recoil" is a DOE term, for the ability of alpha emitters, like plutonium, to "creep" through

4 HEPA filters in a row! Nobody knows how much plutonium comes out of the last filter. We need to

make the DOE reveal the plutonium releases for normal operations, in a lab. The DOE has known of

this problem since the 1970's, but has chosen to ignore it. I have 2 papers from DOE on this. One is

from WJ McDowell, from Oak Ridge. For the 14th ERDA Air Cleaning Conference, he writes a paper

called "Penetration of HEPA Filters By Alpha Recoil Aerosols." He says "Tests at Oak Ridge National

Laboratory have confirmed that alpha-emitting particulate matter does penetrate High-efficiency

filter media, such as that used by HEPA filters...Filter retention efficiencies drastically lower than

the 99.9% quoted for ordinary particulate matter were observed with Pb-212, Es-253, and Pu-238

Constans continuo, latus demissus

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sources, indicating that the phenomenon is common to all of these..." It seems as if the alpha particle,

from the radioactive decay, literally knocks the particles loose. As it creeps through any filters that is

in its way, the DOE thinks that smaller pieces of the plutonium particles, break off the original

particle, increasing the joy of downwinders.

Another DOE paper comes from Arthur H Biermann, at Lawrence Livermore, from Dec,11,1991. His paper is called, "Alpha migration through Air Filters: A Numerical simulation." He says , " It is

obvious from the review of the literature that evidence exists of the migration of alpha radionuclide

species through high efficiency filter media." Both papers have many DOE references, and both call

for quantifying the true releases , in lab experiments. The experiments are do-able, but, so far, the

DOE ain't gonna do it.

I have asked for Dr Liu, at the University of Minn. to be commissioned to study these issues. He uses

a "total capture" technique for downstream particle counting. This is key to true efficiency detection

, or lack of. The present laser counter can detect down to 0.1 microns. Dr Liu can go to 0.007 micron.

Seems the minimal efficiency size goes down from 0.3 micron, each time particle size detection ability

increases...

The FL Horn experiment I mentioned replicates a criticality, and has Pu under the electron microscope. It ranges, on day one, from 0.1 to LESS THAN 0.005 micron, a bottomless scale! The Pu

particles slowly aggregate, but much was still floating for THREE DAYS on the brownian motion of

the air molecules, in this closed cell experiment. We need to quantify normal and accident filtering

truefully, for the first time in nuclear history, and we should use this panel to do it. The DOC

Beirmann paper mentions, as a theory, that the bigger pieces of Pu, that get caught in the first filter,

may break off smaller pieces via this alpha recoil. That throws another flaw in the true dose to the

public during normal operations, over 30 years. This effects all nuclear facilities, past and present.

While the DOE ignores this, a recent study was conducted in the UK. Y. Yamada et al published "Re-entrainment of $^{239}\text{PuO}_2$ particles captured on HEPA filter fibres." (Radiation Protection Dosimetry Vol 82 No 1, pp25-29,1999). While I will present what I think are the shortcomings of the

Yamada study, they clearly acknowledge the true efficiency of Pu filtering has NOT been quantified

before. However, Yamada reported two different resuspension rates. The higher, dust loaded rate

was a staggering resuspension of 1 particle per hundred per hour!

Firstly, it is significant that the Yamada study on the re-entrainment of PuO_2 , detected a PER

HOUR rate of Pu resuspension. There is not supposed to be a PER HOUR rate of resuspension, of any kind. The DOE permit applications state that 99.97% efficiency is the MINIMUM, PERIOD.

This qualifies them to claim that the 10 mrem limit to public exposure will not be exceeded. This

appears to be drastically contradicted by the continual plutonium resuspension rates, especially at

higher dust loading , which replicates historical use of filters left in place for decades. Note p.28

states," For example, the dispersion rate at twice dust loading was calculated to have increased by 13

times. It was confirmed that re-entrainment was strongly affected by dust loading." My main criticism is that the experiment only lasted 20 days. The paper , ironically, does site and acknowledge, the 1976 McDowell paper I love. That McDowell paper notes that regular testing missed the alpha creep because of the short duration of their testing. McDowell left his test up for

one year.

The Yamada test , however, seems to have enough sensitivity to detect alpha creep, at all flows, even

in this limited 20 day experiment. I question their conclusion #1, which dismisses the lower rate of

re-entrainment. They conclude, " Therefore, it was concluded that plutonium particles captured on

fiber filters near the front surface hardly penetrate the filter."

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I believe their dismissal misses the red flags I see. In a mere 20 day experiment, it is noteworthy that

ANY plutonium gained full penetration of this filter, at this low rate. As McDowell notes, a longer

time frame reveals more alpha creep. This 20 day experiment is unrealistic, since no where in the

DOE are HEPA filters changed every 20 days. This low rate, short run, underestimates the true, long

term penetration by alpha emitters. I noted Yamada's reference 4, the Fliescher study , that supports

the probable fragmentation of smaller plutonium particles, from the larger original plutonium particles. This is the Bierman paper's theory , as well.

This clearly calls for Dr Liu's ultrasmall, ultrasensitive "total capture" technique, to capture ALL

sizes of particles, to be done over an extensive period of time, that replicates actual normal use. How

else are we going to determine the true efficiency, of this documented alpha creep problem?

Three important points come to mind.

1)Do the other beta and gamma emitters, that are impacted on the filter, with the alpha emitters,

also leave the filters undetected? Does that not require further testing?

2) Do more radioactive alpha emitters, like the Pu-238, have even higher rates of resuspension? Does

this not call for more testing?

3) Since this Yamada paper confirms alpha creep, why have the DOE downstream monitors not detect any whispering of this plutonium, through the filters? The CDC swears that the monitoring

proves their is no alpha creep "footprint" on the monitors, declaring their faith in the monitors. I

believe the phrase , "below detectable limits", applies to the downstream monitors, and their inability

to reveal the true exposure to the public, of inhalable alpha emitters.

The second issue is the recent discoveries by DOE revealing plutonium transport in water is much

easier than previously believed. The standard of 100 nanocuries per gram of waste material was

created in 1984. The reason given to justify the change was a calculation that the 100 nano standard

would give an acceptable dose of 500 mrem from animal intrusion and resuspension This definately

ignores the water pathway. More important, it ignores the total quantity of plutonium which will be

left over the local water, buried as low level waste.

These decisions are only required to try to calculate radiation doses the public, in a thousand year

time frame, if it is below 100 nano/gram. Unfortunately, as mentioned , the plutonium particles,

which are potentially deadly and cancer causing, if inhaled and embedded in your lungs, remain

radioactive for over 240,00 years.

We have been told for years that plutonium is an actinide, that binds to clay and rocks, immobilizing

the plutonium, protecting the local aquifer. These decisions by the DOE have unfortunately ignored

two recent , contradictory DOE studies, that both show how easily plutonium moves with water.

Understanding these important contradictions is key to protecting local water supply and public

health for centuries to come.

These two separate studies actually reveal a double trouble scenario, because both the soluble forms ,

and the insoluble forms of plutonium can move with water. The A. B. Kersting study , was done at

the Nevada Test Site(1). This study found that insoluble plutonium had migrated 1.3 km (roughly

one mile) bound to clay as a colloid and was suspended and floating in this sluggish aquifer, 30 years

after being introduced to the underground environment. This is a profound, and dangerous discovery, that should change our nearsightedness about plutonium over our aquifer. These plutonium colloids ranged in size from greater than one micron, down to 0.007 microns. The DOE

acknowledges that inhalation of plutonium is the most dangerous pathway of human exposure.

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Plutonium colloids in our aquifer would be available for inhalation from the common use of sprinkler

irrigation, and even canal irrigation that later dries, allowing newly surfaced plutonium to be

resuspended in the wind. The fact that these are insoluble particles of plutonium, means that each

particle contains millions of plutonium atoms. That makes inhalation more dangerous because , while the single strike alpha disintegration of a single radon gas atom is dangerous, an embedded

plutonium particle provides a point of perpetual radiation and alpha destruction. The Kersting paper

notes the old thinking of the DOE, siting the McDowell-Boyer paper. They say , "it has been argued

that plutonium introduced into the subsurface environment is relatively immobile owing to its low

solubility in ground water and strong sorption onto rocks." Kersting notes there are two previous

studies of field observations contradicting that premise (2, 3).

I have heard the DOE, CDC, State, and ATSDR verbally dismiss the Kersting study as "due to the

bomb testing." However , Kersting addresses the issue, stating that in the 40 years of bomb testing,

previous testing only found that "radionuclides were detected at a maximum of a few hundred metres from the original detonation site. "Having isolated the specific isotope ratio of the Benham

bomb test debris, there is no doubt of its origin. The Kersting team concludes , "The possibility that

the Pu from the Benham test site was blasted and deposited greater than 1.3 km away, in two distinct aquifers separated by 300 m vertically and 30 m horizontally seems highly unlikely." Most

importantly, Kersting concludes," Pu transport models that only take into account sorption and

solubility may therefore underestimate the extent to which this species is able to migrate in ground water."

The second study I will refer to, is from DOE's Los Alamos lab, by John M. Haschke (4). While Kersting showed the mobility of insoluble plutonium, Haschke revealed that Pu in our environment

can change oxidation states in the presence of airborne water vapor and become very soluble in

water, enhancing mobility. This discovery contradicts the present textbooks, according Dr Madic (5) ,

who wrote the accompanying "Perspective" , when the Haschke study was published in Science.

Textbook knowledge had only found Pu₀₂ in the environment, in oxidation states III and IV. Madic

writes how this must affect how we view everything, from the new plutonium laden MOX nuclear reactors, to nuclear storage. Madic states," Until now, it was assumed that plutonium would not be

very mobile in the underground geological environment because of the insolubility of Pu(IV) compounds. But Haschke et al. demonstrate that water can oxidize Pu₀₂ into Pu_{02+x}, in which more

than 25% of the plutonium can exist as Pu(VI), an ion that is far more soluble, and thus mobile, than

Pu(IV). This new property will have important implications for the long term storage of plutonium."

So when will the DOE apply this information to protect our water and our health ? We need above

ground, inspectable and retrievable storage for the billions of plutonium particles dumped over our

water. To ignore these studies is inexcusable.

There is one more paper I will quote, from Dr Runde. I went to the Wolfgang Runde article called

"The Chemical Interaction of Plutonium in the Environment." It is from a Los Alamos conference on

plutonium transport. That can be referenced at

<http://lib-www.lanl.gov/pubs/number26.htm> Runde

acknowledges the colloid transport was fast, and concludes, "What is clear is that transport models to

date have underestimated the extent of colloidal transport on plutonium mobility." Let me put his

conclusion in context, and quote Dr Runde to a fuller extent. Dr Runde, on page 408 (or 17 of 20 on

the computer download) says, " We are also trying to better understand the sorption/desorption

reactions of actinides with colloids and the actinides' resulting transport characteristics. This area of

environmental migration received attention with the discovery of plutonium in a borehole at the

Nevada Test Site (Kersting et al. 1999). The plutonium had evidently migrated 1.3 kilometers in only

30 years." Runde continues," As discussed in the article by Maureen McGraw, we now believe that

colloid transport was responsible for this remarkably fast movement of plutonium through the water

saturated rock. It is not clear, however, whether the transport was facilitated by intrinsic plutonium

colloids or natural (clay or zeolite) colloids. What is clear is that transport models to date have

underestimated the extent of colloidal transport on plutonium mobility."

Constans continuo, latus demissus

Page 7

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The only reference to the uniqueness of bomb testing is the initial time it takes to reach plutonium

exposure to water. Runde notes that the underground explosion allowed the plutonium to be left in

water, while a waste repository would differ, because the "radionuclides would be isolated, at least

initially, from the hydrogeologic environment.". (p498) Runde also mentions a new concern for Pu

migration, and that is microbes acting as " mobile colloids. " While they may act as a barrier, they

may aid transport. Runde says, "As such, they act as mobile or even self propelled colloids. (p 409,

18/20). That is another reason we should simply re-barrel the plutonium waste, instead of shallow

burial. Runde concludes, " More sophisticated models are needed to account for all the potential

migration paths away from an actinide source. Theoretical and experimental scientists will be challenged for years by demands of developing these models.(p 410, 19/20)

Gee , I look forward to when they finish the job.

Sincerely,

Dr Peter Rickards DPM

- [REDACTED]
- 1)A.B. Kersting et al. , Lawrence Livermore National Laboratory, Nature, vol 397 Jan 7, 1999, p56-59.
 - 2)McDowell-Boyer , Environmental Science Technol. , 26 , 586-595 (1992)
 - 3)Ryan et al, Physiochem. Eng. Aspects, 107 , 1-56 (1996)
 - 4)JM Haschke et al. ,Science 287, Jan 14 2000
 - 5)C Madic, Science 287 , Jan14, 2000

Response to E-Mail Comment #5

Responses to Dr. Rickard's comments follow:

Item #1:

As noted in Section 1.5.3, alternatives for management of spent nuclear fuel managed by the DOE, including naval spent nuclear fuel, were comprehensively evaluated in DOE 1995. Based on that evaluation, ROD 1995 chose to implement regionalized spent fuel management by fuel type. Under that alternative, naval spent nuclear fuel is managed at the NRF at INL. There are no factors that warrant reconsideration of that decision.

Item #2:

As noted in Section 1.5.3, alternatives for management of spent nuclear fuel managed by the DOE, including naval spent nuclear fuel, were comprehensively evaluated in DOE 1995. The consequences of accidental releases were considered in that evaluation; it was found that the consequences of centralizing spent fuel management at the Savannah River Site (SRS) were higher than the consequences of centralizing spent fuel management at INL. Based on the evaluation in DOE 1995, ROD 1995 chose to implement regionalized spent fuel management by fuel type. Under that alternative, naval spent nuclear fuel is managed at the NRF at INL. There are no factors that warrant reconsideration of that decision.

Item #3:

As noted in Section 1.5.3, alternatives for management of spent nuclear fuel managed by the DOE, including naval spent nuclear fuel, were comprehensively evaluated in DOE 1995. Transportation related impacts were considered in that evaluation. Based on the evaluation in DOE 1995, ROD 1995 chose to implement regionalized spent fuel management by fuel type. Under that alternative, naval spent nuclear fuel is managed at the NRF at INL. There are no factors that warrant reconsideration of that decision.

Item #4:

The articles were reviewed to determine their applicability to the EIS. The articles discuss radiation exposure due to inhalation of plutonium, water transport of plutonium, and High-Efficiency Particulate Air (HEPA) filter efficiency for alpha particles.

Inhalation of Plutonium

The B.R. Scott article (Scott & Fencl 1999) identified by the commenter models the amount of plutonium intake by workers in an environment where there are few particles available for inhalation - a condition in which the authors consider a statistical (i.e., stochastic) approach for estimating intake is more appropriate than a deterministic approach. The model uses an assumed distribution of particle sizes which are available for inhalation. The range in assumed particle sizes leads to large variability in calculated radioactivity intake when few particles are inhaled. Since inhalation occurs in discrete particles that have a log normal distribution, most workers will inhale smaller particles while a few workers may inhale large particles. Of those particles inhaled, only a portion would be deposited in a section of the respiratory tract that contributes to an internal dose. The authors correctly note that in addition to the variability in intake, there is uncertainty on where particles deposit in the respiratory tract. Since the location of deposition significantly affects the dose received from the particle, the authors do not attempt to estimate the doses associated with the intake and subsequent deposition.

The authors do not conclude in the paper that inhalation of a single particle of ^{238}Pu would exceed the 10 millirem public exposure limit established in 40 C.F.R. § 61.102. However, if a large enough particle were to be deposited in the lungs, an individual's exposure could exceed 10 millirem.

Section F.3 of the EIS discusses the generally accepted models and assumptions used for estimation of risk posed to workers and the public from releases of radioactivity during routine naval spent nuclear fuel handling operations and hypothetical accident scenarios. The generally accepted model for particle dispersion used in the EIS is the Gaussian model for a plume which is one of the most common modeling methods. For example, the Gaussian model is used by both the DOE (DOE 2004c) and Nuclear Regulatory Commission (NRC 2011). In addition, the latest guidance for converting radioactivity inhaled to dose received was used in the EIS analysis (ICRP 1995). This includes the use of dose conversion factors for appropriate particle sizes for environmental release as recommended by the ICRP (ICRP 1993).

Additionally, the larger particles discussed in the article "associated with the upper tail of the intake distribution do not necessarily reflect a higher health risk as many of the high intake events are associated with deposition of large particles in the nose, which is a radioresistant site." Therefore, if a member of the public were to inhale a large particle, the particle would be unlikely to be deposited in the lungs. The article is also specific to exposure to workers. As discussed in the article, the particle size and radioactivity distribution are likely to be very different for an accident resulting in public exposure.

Water Transport of Plutonium

The articles present information about the transport of radionuclides through the environment into groundwater. However, as the articles state, the transport of radionuclides is dependent on many factors influenced by the chemistry of a particular location and environment. Exposure from radioactive emissions onto surface water and into groundwater was evaluated in the EIS. Conservative assumptions were used to reflect uncertainty in transport methods through the soil and aquifer below NRF. Individual radionuclide transport properties (excluding radioactive decay) were not considered for the water transport to allow for conservative modeling (e.g., not modeling any potential delay from perched water zones, instantaneous solubility, and rapid transport time to the individuals of interest based on empirical data).

HEPA Filtration

For routine naval spent nuclear fuel handling operations, the impacts reported are based on actual emissions scaled to future operations. For hypothetical accident scenarios involving an intact facility structure with HEPA filters, this EIS models HEPA filters as being 99.9 percent effective for particulates (a more conservative assumption than the 99.97 percent higher filtration efficiency frequently reported in DOE documents). In addition, multiple HEPA filter units in series are conservatively modeled as a single unit; and no credit is taken in the model for multiplicative protection from a series of HEPA filters. For hypothetical accidental scenarios involving damage to a facility structure, this EIS takes no credit for HEPA filters and does not include HEPA filtration.

The NNPP requires that HEPA filters to the environment be tested frequently for proper air flow, pressure, and filtration effectiveness. Testing to verify that the HEPA filters are operating effectively occurs upon initial installation, after any modification of the system, and annually. Additionally, the NNPP replaces the HEPA filters whenever the filters do not pass inspection, if damage is detected or suspected, according to schedule, or if the radiation level in the filter reaches a set-point.

Item #5:

As discussed in Section 1.5.3, transportation of naval spent nuclear fuel to INL is outside the scope of this EIS; therefore, no off-site transportation accidents are evaluated. Appendix F evaluates releases of radionuclides due to hypothetical accident scenarios and intentional destructive acts. ^{238}Pu is included in the source term for an inter-facility (i.e., between two facilities located on NRF property) transfer accident which includes a fire involving naval spent nuclear fuel. The fire scenario is discussed in Appendix F, Section F.5.4.7; however, since the ^{238}Pu contributes less than 1 percent of the dose, it is not shown in Table F.5-14. In the development of accident scenarios, the NNPP models a total amount of material released based on a hypothetical amount of damage to the naval spent nuclear fuel that is independent of scenario duration.

A 15-minute plume duration (e.g., exposure time to an individual) is modeled as representative of a fire that occurs on NRF property. The material modeled to be released during this exposure time (i.e., activity released from damage to the naval spent nuclear fuel) accounts for mechanical damage to the naval spent nuclear fuel and overheating from a fire during the accident. The model is conservative due to the robustness of the naval nuclear fuel design and the containment provided by the shielded transfer container design. Assuming a 2-hour burn time for the vehicular crash on NRF property is unreasonable considering the emergency response capabilities available at NRF and the INL.

E-Mail Comment #6

From: Kathy Daly [REDACTED]
Sent: Friday, September 03, 2010 4:29 PM
To: ECF Recapitalization
Subject: Public Scoping and proposed EIS

Dear Mr. Holden,

I'm writing this afternoon in regard to the proposed EIS for the recapitalization of the infrastructure supporting the Naval spent nuclear fuel at the Idaho National Laboratory.

I attended the August 25th public scoping meeting sponsored by the Naval Nuclear Propulsion Program. Thank you for holding a Pocatello meeting. It is much appreciated! At the scoping meeting I learned of the four alternatives under consideration for the recapitalization project.

- 1** | I'm hopeful the draft EIS will retain the "No Action" alternative as a viable means of recapitalization.
- 2** | I hope it will provide thorough examination of potential environmental impacts on the fragile high desert surroundings...the Snake River Aquifer included.

Thank you for your time and interest. I look forward to commenting on the proposed EIS.

Sincerely,

Katherine Daly

-- Kathy Daly Email: [REDACTED]

Response to E-Mail Comment #6

Item #1:

The commenter's interest in the No Action Alternative is noted. The No Action Alternative, as currently defined in Section 2.1, limits efforts to preventative and corrective maintenance. This level of effort may not keep the infrastructure in safe working order until 2060 (i.e., maintenance alone may not be sufficient to sustain the proper functioning of structures, systems, and components). In addition, this level of effort will not provide the capability to unload M-290 shipping containers. Therefore, the No Action Alternative is an unreasonable alternative that does not meet the purpose and need for the proposed action.

Item #2:

Potential environmental impacts of all analyzed alternatives on the surrounding environment and the Snake River Aquifer are discussed in Chapter 4.

E-Mail Comment #7

From: Beatrice Brailsford [REDACTED]
Sent: Friday, September 03, 2010 8:46 PM
To: ECF Recapitalization
Subject: Snake River Alliance scoping comments
Attachments: nuclear navy 2010 final.pdf

Beatrice Brailsford

Snake River Alliance

Box 425

Pocatello, ID 83204

208/233-7212

[REDACTED]



**SNAKE RIVER
ALLIANCE**
IDAHO'S NUCLEAR WATCHDOG

September 3, 2010

Gregory F. Holden (O8U-Naval Reactors)
Naval Sea Systems Command
1240 Isaac Hull Avenue, SE, Stop 8036
Washington Navy Yard, DC 20376-8036

Submitted by email to ecfrecapitalization@unnpp.gov

**Snake River Alliance Scoping Comments on the Environmental Impact Statement
on recapitalization of the infrastructure supporting spent nuclear fuel (SNF)
handling and examination at the Idaho National Laboratory (INL)**

Dear Mr. Holden:

On behalf of the members of the Snake River Alliance, I submit the following comments and questions regarding the scope of the EIS on nuclear navy spent fuel infrastructure recapitalization.

First, let me repeat our appreciation for the nuclear navy's decision to hold multiple public meetings in Idaho. Activities at the Idaho National Laboratory and its ongoing role as the nuclear navy's final Port of Call are areas of broad concern here, and we commend your responsiveness to those concerns.

- 1 There is a slight implication in the preliminary material that examination and storage of nuclear navy SNF at INL is required under the 1995 Settlement Agreement. That is most certainly not the case.
- 2 My understanding is that a very small percentage of SNF is examined in depth, and that question should be discussed in the EIS.
- 3 Though the programmatic decision to ship nuclear navy spent fuel to Idaho for indefinite storage was made in the 1995 DOE Programmatic EIS for Spent Nuclear Fuel Management, the environmental effects of receiving, handling, examining, packaging, and storing nuclear navy spent fuel were only cursorily covered in the site-wide portion of the 1995 study and have not been revisited in a supplement analysis. The effects of transportation do not seem to have been evaluated since 1999. The current EIS must fully evaluate all impacts of shipping, receiving, handling, examining, packaging, and storing

4 nuclear navy spent fuel at INL (10 CFR 1021.330). A narrative of what has changed over the years would be helpful. In addition, all effects of the waste streams from all these activities must be fully analyzed. An important element of this analysis is the length of time these activities—not just construction—would occur. As part of the scope of this study, the nuclear navy must provide all analyses and policy statements that tell us what the US fleet will be like in 40 and 50 years.

5 The “time scope” in the EIS must also include a full discussion of the fact that, once “packaging” is complete, nuclear navy spent nuclear fuel, as always, is all wrapped up with no place to go. The 2008 Addendum to the Settlement Agreement (at least until it is amended again) states that “after January 1, 2035, the Navy may maintain a volume of Naval spent fuel at INL of not more than 9 metric tons heavy metal (MTHM) for a timeframe reasonably necessary for examination, processing, and queuing for shipment to a repository or storage facility outside Idaho.” What percentage of nuclear navy SNF already at INL does this amount represent? What percentage is it of total nuclear navy SNF inventory reasonably expected in 2035 (based on the analyses and policy statements that will be included in the upcoming EIS)? What is a “reasonably necessary timeframe,” particularly for storage, in measurable terms (in years, for instance)?

6 The “no-action alternative” is in fact an *action* alternative. A more appropriate “no-action alternative” is maintenance of the current structures. “Overhaul... refurbishments...upgrades” are actions and should be analyzed as a separate alternative.

7 The preliminary material seems to imply that the nuclear navy could not refuel its fleet without new storage facilities in Idaho for spent nuclear fuel. Idaho plays no role in refueling nuclear navy vessels.

Again, thank you for having public meetings in Idaho Falls, Pocatello, and Twin Falls, Idaho, on this proposal.

Respectfully submitted,



Beatrice Brailsford
Program Director

Response to E-Mail Comment #7

Responses to the Snake River Alliance's comments follow:

Item #1:

The commenter is correct that the 1995 Settlement Agreement does not require examination and storage of naval spent nuclear fuel at INL. As noted in Section 1.5.3 of the draft EIS, alternatives for management of spent nuclear fuel managed by the DOE, including naval spent nuclear fuel, were comprehensively evaluated in DOE 1995. Based on that evaluation, ROD 1995 chose to implement regionalized spent fuel management by fuel type. Under that alternative, naval spent nuclear fuel is managed at the NRF at INL. The 1995 Settlement Agreement documents conditions agreed to among the Navy, the DOE, and the state of Idaho on the implementation of that decision.

Item #2:

Section 1.1.3 describes the nature and extent of examinations performed on naval spent nuclear fuel.

Item #3:

With the exception of transportation and dry storage, all of the activities identified in the comment, including the management and disposition of waste, are evaluated in the EIS for both the construction period and the 40 year operational life of the new or refurbished facilities. Transportation and dry storage of naval spent nuclear fuel are outside the scope of this EIS as the nature and scope of those activities are unaffected by the proposed action and there are no factors that would change the conclusions of prior analyses of those activities.

Item #4:

The makeup of the U.S. fleet is outside the scope of the EIS and any description of what the fleet will look like in 40 to 50 years would be speculative. However, given the Navy's current shipbuilding plan, the lifetime of warships (USS ENTERPRISE, the first nuclear-powered aircraft carrier, remained in service for 50 years), and the military capabilities provided by nuclear propulsion, it is reasonable to conclude that nuclear-powered warships will remain a vital element of the U.S. fleet for the foreseeable future.

Item #5:

Per SAA 2008, after January 1, 2035, the U.S. Navy may maintain a volume of naval spent nuclear fuel at INL of not more than 9 metric tons heavy metal (MTHM) for a time-frame reasonably necessary for examination, processing, and queuing for shipment to a geologic repository or interim storage facility outside Idaho.

Currently, the INL has an inventory of approximately 30 MTHM of naval spent nuclear fuel. This naval spent nuclear fuel is in the process of being packaged for dry storage by 2023 in accordance with SA 1995.

By 2035, the NNPP would have an inventory of approximately 66 MTHM of naval spent nuclear fuel on the INL if an interim storage facility or geologic repository is not available. By 2048, this total would be approximately 78 MTHM. The majority of this inventory would be in dry storage awaiting shipment to an interim storage facility or geologic repository.

Although the NNPP has the necessary loading facilities at NRF and transportation casks, the timeframe reasonably necessary for shipment of naval spent nuclear fuel to a repository or storage facility outside of Idaho is dependent on the availability of such facilities. The timing of availability of those facilities is uncertain. At the time of this Draft EIS, the NRC is considering the DOE application to construct a geologic repository at Yucca Mountain. The President's Blue Ribbon Commission on America's Nuclear Future (Commission) evaluated alternatives to the repository at Yucca Mountain. The DOE strategy for implementing the recommendations of the Commission estimated that a pilot interim storage capability could be operational by 2021, a consolidated interim storage facility could be operational by 2025, and an alternate geologic repository could be operational by 2048.

Item #6:

The No Action Alternative, as currently defined in Section 2.1, limits efforts to preventative and corrective maintenance. This level of effort may not keep the infrastructure in safe working order until 2060 (i.e., maintenance alone may not be sufficient to sustain the proper functioning of structures, systems, and components). In addition, this level of effort will not provide the capability to unload M290 shipping containers. Therefore, the No Action Alternative is an unreasonable alternative that does not meet the purpose and need for the proposed action.

Item #7:

As described in Chapter 1, the operations at Idaho are directly linked to the refueling and defueling operations of the nuclear U.S. Navy through the use of shipping containers. Without the proper capacity in Idaho to unload shipping containers and return them to the shipyards at a tempo necessary to support the fleet, the ability to defuel submarines and aircraft carriers would be impacted.

E-Mail Comment #8

From: Peter Rickards [REDACTED]
Sent: Friday, September 03, 2010 9:59 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: Supplement on ATR safety flaws for alternative 2 - Re: Written public comment for Navy EIS for INL...

Official supplement to public comment please...

As I said in my verbal comments at the official hearing in Twin Falls, but forgot to put in writing today, the Navy needs to address all the safety flaws at the old rickety ATR, that is your alternative 2 for where to build your proposed upgrades.

1a | To truly analyze the environmental impacts from clustering your work at the Advanced Test Reactor, please include all the FOIA'd safety flaw revelations uncovered by Idaho's Environmental Defense Institute at <http://www.environmental-defense-institute.org/>, and Wyoming's Keep Yellowstone Nuclear Free at www.yellowstonenuclearfree.com <<http://www.yellowstonenuclearfree.com/>>

Here is the url for two of EDI's fine work,(under "Publications" if the link fails,) at EDI Excerpts of DOE Operations Reports Related to the Advanced Test Reactor Revision 11. 8/15/10. pdf <<http://www.environmental-defense-institute.org/publications/EDI%20Excerpts%20INL%20Op.Rpts.Rev-11.pdf>>

And EDI Comments on Court Released AIR Documents, XXIII, 4-5-10. pdf <<http://www.environmental-defense-institute.org/publications/EDI%20Com.FOIA%20Doc.XXIII.pdf>>

Sincerely...Peter

On Fri, Sep 3, 2010 at 2:26 PM, Peter Rickards [REDACTED]

IDAHO FAMILIES FOR THE SAFEST ENERGY

Official scoping issues to supplement my oral presentation in Twin Falls please.

While we admire, appreciate, and love the brave Navy patriots, please answer the following scoping questions in your EIS.

- 1 1) There are no seaports for nuclear submarines in Idaho. Instead of building new facilities at INL for \$2 Billion, please analyze relocating and clustering Navy fuel operations at the DOE's Savannah River facility. This is presently not under consideration in your EIS, which is illegal by NEPA law, ie, an "irretrievable commitment of resources" stacking the deck for future clustering around the \$2 Billion spent in Idaho
- 2 2) Specifically analyze worst case scenario accidents or terrorism, or disgruntled employee sabotage, comparing that fallout spreading from Idaho across the country and cities, vs the fallout at SR's east coast, where that has a chance to blow away from cities out to the ocean.
- 3 3) Analyze INL vs SR to see that clustering the Navy operations on the east coast will save money and safety risks from transporting the dangerous spent fuel across the country to Idaho.
- 4 4) Please see the documented science references below. Please analyze inhalation of one lone particle of the spent fuel's pu-238 to see it would exceed the 10 mrem public exposure limit, since the HEPA filters can NOT contain plutonium at the 99.97% bragged about in all EIS's so far. Note the particle size problem from criticalities that the DOE has refused to answer yet in all previous EIS's.
- 5 5) Please analyze pu-238 inhalation from transportation accidents where a fire lasts 2 hours, and as the DOE documents admit, allowing an unbounded release of the spent fuel. That is why clustering at SR and greatly lessening the transport miles is important to analyze.

<http://rpd.oxfordjournals.org/content/83/3/221.abstract>

Variability in PuO₂ Intake by Inhalation: Implications for Worker Protection at the US Department of Energy

1. B.R. Scott
[<http://rpd.oxfordjournals.org/search?author1=B.R.+Scott&sortspec=date&submit=Submit>](http://rpd.oxfordjournals.org/search?author1=B.R.+Scott&sortspec=date&submit=Submit) and
2. A.F. Fencl
[<http://rpd.oxfordjournals.org/search?author1=A.F.+Fencl&sortspec=date&submit=Submit>](http://rpd.oxfordjournals.org/search?author1=A.F.+Fencl&sortspec=date&submit=Submit)

Abstract

This paper describes the stochastic exposure (SE) paradigm where, at most, small numbers of airborne toxic particles are presented for inhalation. The focus is on alpha-emitting plutonium dioxide (PuO_2) particles that may be inhaled by Department of Energy (DOE) workers. Consideration of the SE paradigm is important because intake of only a few highly radioactive PuO_2 particles such as $^{238}PuO_2$, could greatly exceed the annual limit on intake (ALI) used to control worker exposure. For the SE paradigm, credible intake distributions evaluated over the population at risk are needed, rather than unreliable point estimates of intake. Credible distributions of radiation doses and health risks are also needed. Because there are limited data on humans who inhaled PuO_2 , these distributions must be calculated. Calculated distributions are presented that relate to the intake of radioactivity via inhaling polydisperse PuO_2 particles. The results indicate that a large variability in radioactivity intake is expected when relatively small numbers of PuO_2 particles are inhaled. For the SE paradigm, one cannot know how many PuO_2 particles were inhaled by an individual involved in a given inhalation exposure scenario. Thus, rather than addressing questions such as 'Did the calculated worker's intake of $^{238}PuO_2$ exceed the ALI?', it is better to address questions such as 'What is the probability that $^{238}PuO_2$ intake by a given worker occurred and exceeded the ALI?' Mathematical tools for addressing the latter question are presented, and examples of their applications are provided, with emphasis on possible DOE worker exposures at the Rocky Flats facility near Denver, Colorado. The alpha-emitting isotopes ^{238}Pu , ^{239}Pu , ^{240}Pu and ^{242}Pu are found at Rocky Flats. Although ^{238}Pu is thought to be present in relatively small amounts there, intake via inhalation of only a few $^{238}PuO_2$ particles could greatly exceed the ALI.

* Radiation Protection Dosimetry
http://www.oxfordjournals.org/our_journals/rpd/terms.html
*

I needed to share some vital information on HEPA filter problems and plutonium transport in water

that effects the true plutonium emissions from the proposed pit facility and the plutonium laced low

level and Transuranic waste generated. I am a podiatrist in Twin Falls , Idaho. As a citizen, and as a

member of the CDC advisory panel on INEEL, I have gathered some vital documents on HEPA filter

problems and Pu transport problems . I hope you will address these issues. The HEPA filter issues

really effects almost all nuclear projects. Please contact me for more details if desired, but here is an

overview.

To get an air quality permit, the project has to show they do not expose the public to more than 10

mrem of radiation from normal operations (and my memory says that there is a 100 mrem limit to

anticipated accidents). The filters are bragged to be 99.97% efficient for 0.3 micron particles, and

more efficient for both smaller and larger particles. This allows them to calculate a very low rate of

release, qualifying easily for a permit.

Here are the 2 main areas of filter problems, that remain unquantified. I have called for testing the

filters, in lab, for these problems, at all so-called Environmental Impact scoping hearings. To date,

these questions have remained unanswered.

1) Most folks know that the filters can burn, but even if the fire is contained and put out by

sprinklers, that humidity can ruin the filters. The DOE's May 1999 Defense Nuclear Facilities Safety

Board(DNFSB/TECH-23) had this to say, on page 2-5, " When installed fire suppression systems are

activated to protect systems, structures, and components inside confinement, the moisture-laden air

carried downstream to the HEPA filters can seriously degrade filter performance-at a time when

high-efficiency filter performance is crucial." All this is "despite the fact that water repellents are

applied to the medium during manufacturing." This does not stop the DOE from saying that the
3

HEPA filters in a row combine for 10 to the minus 9th power filtering efficiency (99.99999999%).

Criticalities (not in report) are also another unquantified accident, that could be quantified truthfully

in lab settings. I have a great DOE paper from an FL Horn, replicating a criticality with plutonium.

On day one, the particles were between 0.1 micron down to less than 0.005 micron. Plutonium is a

heavy metal, and often a wind resuspension factor of 1 per million particles is assigned in the EIS. In

this FL Horn experiment, the plutonium particles were so light, that in this windless closed cell, they

floated for 3 days , bouncing around on the brownian motion of the air molecules! They slowly aggregated and precipitated, but that was in this closed cell.

2) "Alpha recoil " is a DOE term, for the ability of alpha emitters, like plutonium, to "creep " through

4 HEPA filters in a row! Nobody knows how much plutonium comes out of the last filter. We need to

make the DOE reveal the plutonium releases for normal operations, in a lab. The DOE has known of

this problem since the 1970's, but has chosen to ignore it. I have 2 papers from DOE on this. One is

from WJ McDowell, from Oak Ridge. For the 14th ERDA Air Cleaning Conference, he writes a paper

called " Penetration of HEPA Filters By Alpha Recoil Aerosols." He says "Tests at Oak Ridge National

Laboratory have confirmed that alpha-emitting particulate matter does penetrate High-efficiency

filter media, such as that used by HEPA filters...Filter retention efficiencies drastically lower than

the 99.9% quoted for ordinary particulate matter were observed with Pb-212, Es-253, and Pu-238

Constans continuo, latus demissus

Page 4

Air Permit No. TV-0080-0041 Savannah River Site December 6, 2002

sources, indicating that the phenomenon is common to all of these..." It seems as if the alpha particle,

from the radioactive decay, literally knocks the particles loose. As it creeps through any filters that is

in it's way, the DOE thinks that smaller pieces of the plutonium particles, break off the original

particle, increasing the joy of downwinders.

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was a staggering resuspension of 1 particle per hundred per hour!

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This qualifies them to claim that the 10 mrem limit to public exposure will not be exceeded. This

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Three important points come to mind.

1)Do the other beta and gamma emitters, that are impacted on the filter, with the alpha emitters,

also leave the filters undetected? Does that not require further testing?

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3) Since this Yamada paper confirms alpha creep, why have the DOE downstream monitors not detect any whispering of this plutonium, through the filters? The CDC swears that the monitoring

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to reveal the true exposure to the public, of inhalable alpha emitters.

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easier than previously believed. The standard of 100 nanocuries per gram of waste material was

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which are potentially deadly and cancer causing, if inhaled and embedded in your lungs, remain

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the plutonium, protecting the local aquifer. These decisions by the DOE have unfortunately ignored

two recent , contradictory DOE studies, that both show how easily plutonium moves with water.

Understanding these important contradictions is key to protecting local water supply and public

health for centuries to come.

These two separate studies actually reveal a double trouble scenario, because both the soluble forms ,

and the insoluble forms of plutonium can move with water. The A. B. Kersting study , was done at

the Nevada Test Site(1). This study found that insoluble plutonium had migrated 1.3 km (roughly

one mile) bound to clay as a colloid and was suspended and floating in this sluggish aquifer, 30 years

after being introduced to the underground environment. This is a profound, and dangerous discovery, that should change our nearsightedness about plutonium over our aquifer. These plutonium colloids ranged in size from greater than one micron, down to 0.007 microns. The DOE

acknowledges that inhalation of plutonium is the most dangerous pathway of human exposure.

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Plutonium colloids in our aquifer would be available for inhalation from the common use of sprinkle

irrigation, and even canal irrigation that later dries, allowing newly surfaced plutonium to be

resuspended in the wind. The fact that these are insoluble particles of plutonium, means that each

particle contains millions of plutonium atoms. That makes inhalation more dangerous because , while the single strike alpha disintegration of a single radon gas atom is dangerous, an embedded

plutonium particle provides a point of perpetual radiation and alpha destruction. The Kersting paper

notes the old thinking of the DOE, siting the McDowell-Boyer paper. They say , "it has been argued

that plutonium introduced into the subsurface environment is relatively immobile owing to its low

solubility in ground water and strong sorption onto rocks." Kersting notes there are two previous

studies of field observations contradicting that premise (2, 3).

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the Pu from the Benham test site was blasted and deposited greater than 1.3 km away, in two distinct aquifers separated by 300 m vertically and 30 m horizontally seems highly unlikely." Most

importantly, Kersting concludes," Pu transport models that only take into account sorption and

solubility may therefore underestimate the extent to which this species is able to migrate in ground

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The second study I will refer to, is from DOE's Los Alamos lab, by John M. Haschke (4). While Kersting showed the mobility of insoluble plutonium, Haschke revealed that Pu in our environment

can change oxidation states in the presence of airborne water vapor and become very soluble in

water, enhancing mobility. This discovery contradicts the present textbooks, according Dr Madic (5) , who wrote the accompanying "Perspective" , when the Haschke study was published in Science. Textbook knowledge had only found Pu02 in the environment, in oxidation states III and IV. Madic writes how this must affect how we view everything, from the new plutonium laden MOX nuclear reactors, to nuclear storage. Madic states," Until now, it was assumed that plutonium would not be very mobile in the underground geological environment because of the insolubility of Pu(IV) compounds. But Haschke et al. demonstrate that water can oxidize Pu02 into Pu02+x, in which more than 25% of the plutonium can exist as Pu(VI), an ion that is far more soluble, and thus mobile, than Pu(IV). This new property will have important implications for the long term storage of plutonium."

So when will the DOE apply this information to protect our water and our health ? We need above ground, inspectable and retrievable storage for the billions of plutonium particles dumped over our water. To ignore these studies is inexcusable.

There is one more paper I will quote, from Dr Runde. I went to the Wolfgang Runde article called "The Chemical Interaction of Plutonium in the Environment." It is from a Los Alamos conference on plutonium transport. That can be referenced at <http://lib-www.lanl.gov/pubs/number26.htm> Runde acknowledges the colloid transport was fast, and concludes, "What is clear is that transport models to date have underestimated the extent of colloidal transport on plutonium mobility." Let me put his conclusion in context, and quote Dr Runde to a fuller extent. Dr Runde, on page 408 (or 17 of 28 on the computer download) says, " We are also trying to better understand the sorption/desorption reactions of actinides with colloids and the actinides' resulting transport characteristics. This area of

environmental migration received attention with the discovery of plutonium in a borehole at the

Nevada Test Site (Kersting et al. 1999). The plutonium had evidently migrated 1.3 kilometers in only

30 years." Runde continues," As discussed in the article by Maureen McGraw, we now believe that

colloid transport was responsible for this remarkably fast movement of plutonium through the water

saturated rock. It is not clear, however, whether the transport was facilitated by intrinsic plutonium

colloids or natural (clay or zeolite) colloids. What is clear is that transport models to date have

underestimated the extent of colloidal transport on plutonium mobility."

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The only reference to the uniqueness of bomb testing is the initial time it takes to reach plutonium

exposure to water. Runde notes that the underground explosion allowed the plutonium to be left in

water, while a waste repository would differ, because the "radionuclides would be isolated, at least

initially, from the hydrogeologic environment.". (p490) Runde also mentions a new concern for Pu

migration, and that is microbes acting as " mobile colloids. " While they may act as a barrier, they

may aid transport. Runde says, "As such, they act as mobile or even self propelled colloids. (p 409,

18/20). That is another reason we should simply re-barrel the plutonium waste, instead of shallow

burial. Runde concludes, " More sophisticated models are needed to account for all the potential

migration paths away from an actinide source. Theoretical and experimental scientists will be challenged for years by demands of developing these models.(p 410, 19/20)

Gee , I look forward to when they finish the job.

Sincerely,

Dr Peter Rickards DPM

- [REDACTED]
- 1)A.B. Kersting et al. , Lawrence Livermore National Laboratory, Nature, vol 397 Jan 7, 1999, p56-59.
 - 2)McDowell-Boyer , Environmental Science Technol. , 26 , 586-595 (1992)
 - 3)Ryan et al, Physiochem. Eng. Aspects, 107 , 1-56 (1996)
 - 4)JM Haschke et al. ,Science 287, Jan 14 2000
 - 5)C Madic, Science 287 , Jan14, 2000

Response to E-Mail Comment #8

Item #1a:

This comment relates to potential options for recapitalization of the examination infrastructure at ECF. As noted in the amended NOI published on May 10, 2012 in 77 Fed. Reg. 27448, that action has been deferred and is no longer in the scope of this EIS.

Items #1-5:

The remainder of this comment duplicates E-Mail Comment #5. Please refer to the responses to E-Mail Comment #5.

E-Mail Comment #9

From: Kit Deslauriers [REDACTED]
Sent: Monday, September 06, 2010 8:28 PM
To: Peter Rickards; ECF Recapitalization
Cc: [REDACTED]
Subject: Re: Written public comment for Navy EIS for INL....

Same for this one, although this is available in the thread that I just forwarded to you.
Kit

On 9/3/10 2:26 PM, "Peter Rickards" [REDACTED] wrote:

IDAHO FAMILIES FOR THE SAFEST ENERGY

Official scoping issues to supplement my oral presentation in Twin Falls please.

While we admire, appreciate, and love the brave Navy patriots, please answer the following scoping questions in your EIS.

- 1 | 1) There are no seaports for nuclear submarines in Idaho. Instead of building new facilities at INL for \$2 Billion, please analyze relocating and clustering Navy fuel operations at the DOE's Savannah River facility. This is presently not under consideration in your EIS, which is illegal by NEPA law, ie, an "irretrievable commitment of resources" stacking the deck for future clustering around the \$2 Billion spent in Idaho
- 2 | 2) Specifically analyze worst case scenario accidents or terrorism, or disgruntled employee sabotage, comparing that fallout spreading from Idaho across the country and cities, vs the fallout at SR's east coast, where that has a chance to blow away from cities out to the ocean.
- 3 | 3) Analyze INL vs SR to see that clustering the Navy operations on the east coast will save money and safety risks from transporting the dangerous spent fuel across the country to Idaho.
- 4 | 4) Please see the documented science references below. Please analyze inhalation of one lone particle of the spent fuel's pu-238 to see it would exceed the 10 mrem public exposure limit, since the HEPA filters can NOT contain plutonium at the 99.97% bragged about in all EIS's so far. Note the particle size problem from criticalities that the DOE has refused to answer yet in all previous EIS's.
- 5 | 5) Please analyze pu-238 inhalation from transportation accidents where a fire lasts 2 hours, and as the DOE documents admit, allowing an unbounded release of the spent fuel. That is why clustering at SR and greatly lessening the transport miles is important to analyze.

<http://rpd.oxfordjournals.org/content/83/3/221.abstract>

Variability in PuO₂ Intake by Inhalation: Implications for Worker Protection at the US Department of Energy

1. B.R. Scott
<http://rpd.oxfordjournals.org/search?author1=B.R.+Scott&sortspec=date&submit=Submit> and
2. A.F. Fencl
<http://rpd.oxfordjournals.org/search?author1=A.F.+Fencl&sortspec=date&submit=Submit>

Abstract

This paper describes the stochastic exposure (SE) paradigm where, at most, small numbers of airborne toxic particles are presented for inhalation. The focus is on alpha-emitting plutonium dioxide (PuO₂) particles that may be inhaled by Department of Energy (DOE) workers. Consideration of the SE paradigm is important because intake of only a few highly radioactive PuO₂ particles such as ²³⁸PuO₂, could greatly exceed the annual limit on intake (ALI) used to control worker exposure. For the SE paradigm, credible intake distributions evaluated over the population at risk are needed, rather than unreliable point estimates of intake. Credible distributions of radiation doses and health risks are also needed. Because there are limited data on humans who inhaled PuO₂, these distributions must be calculated. Calculated distributions are presented that relate to the intake of radioactivity via inhaling polydisperse PuO₂ particles. The results indicate that a large variability in radioactivity intake is expected when relatively small numbers of PuO₂ particles are inhaled. For the SF paradigm, one cannot know how many PuO₂ particles were inhaled by an individual involved in a given inhalation exposure scenario. Thus, rather than addressing questions such as 'Did the calculated worker's intake of ²³⁸PuO₂ exceed the ALI?', it is better to address questions such as 'What is the probability that ²³⁸PuO₂ intake by a given worker occurred and exceeded the ALI?' Mathematical tools for addressing the latter question are presented, and examples of their applications are provided, with emphasis on possible DOE worker exposures at the Rocky Flats facility near Denver, Colorado. The alpha-emitting isotopes ²³⁸Pu, ²³⁹Pu, ²⁴⁰Pu and ²⁴²Pu are found at Rocky Flats. Although ²³⁸Pu is thought to be present in relatively small amounts there, intake via inhalation of only a few ²³⁸PuO₂ particles could greatly exceed the ALI.

- * Radiation Protection Dosimetry
http://www.oxfordjournals.org/our_journals/rpd/terms.html
 - *
-

I needed to share some vital information on HEPA filter problems and plutonium transport in water

that effects the true plutonium emissions from the proposed pit facility and the plutonium laced low

level and Transuranic waste generated. I am a podiatrist in Twin Falls , Idaho. As a citizen, and as a

member of the CDC advisory panel on INEEL, I have gathered some vital documents on HEPA filter

problems and Pu transport problems . I hope you will address these issues. The HEPA filter issues

really effects almost all nuclear projects. Please contact me for more details if desired, but here is an

overview.

To get an air quality permit, the project has to show they do not expose the public to more than 10

mrem of radiation from normal operations (and my memory says that there is a 100 mrem limit to

anticipated accidents). The filters are bragged to be 99.97% efficient for 0.3 micron particles, and

more efficient for both smaller and larger particles. This allows them to calculate a very low rate of

release, qualifying easily for a permit.

Here are the 2 main areas of filter problems, that remain unquantified. I have called for testing the

filters, in lab, for these problems, at all so-called Environmental Impact scoping hearings. To date,

these questions have remained unanswered.

1) Most folks know that the filters can burn, but even if the fire is contained and put out by

sprinklers, that humidity can ruin the filters. The DOE's May 1999 Defense Nuclear Facilities Safety

Board(DNFSB/TECH-23) had this to say, on page 2-5, " When installed fire suppression systems are

activated to protect systems, structures, and components inside confinement, the moisture-laden air

carried downstream to the HEPA filters can seriously degrade filter performance-at a time when

high-efficiency filter performance is crucial." All this is "despite the fact that water repellents are

applied to the medium during manufacturing." This does not stop the DOE from saying that the 3

HEPA filters in a row combine for 10 to the minus 9th power filtering efficiency (99.99999999%).

Criticalities (not in report) are also another unquantified accident, that could be quantified truthfully

in lab settings. I have a great DOE paper from an FL Horn, replicating a criticality with plutonium.

On day one, the particles were between 0.1 micron down to less than 0.005 micron. Plutonium is a

heavy metal, and often a wind resuspension factor of 1 per million particles is assigned in the EIS. In

this FL Horn experiment, the plutonium particles were so light, that in this windless closed cell, they

floated for 3 days , bouncing around on the brownian motion of the air molecules! They slowly aggregated and precipitated, but that was in this closed cell.

2) "Alpha recoil " is a DOE term, for the ability of alpha emitters, like plutonium, to "creep " through

4 HEPA filters in a row! Nobody knows how much plutonium comes out of the last filter. We need to

make the DOE reveal the plutonium releases for normal operations, in a lab. The DOE has known of

this problem since the 1970's, but has chosen to ignore it. I have 2 papers from DOE on this. One is

from WJ McDowell, from Oak Ridge. For the 14th ERDA Air Cleaning Conference, he writes a paper

called " Penetration of HEPA filters By Alpha Recoil Aerosols." He says "Tests at Oak Ridge National

Laboratory have confirmed that alpha-emitting particulate matter does penetrate High-efficiency

filter media, such as that used by HEPA filters...Filter retention efficiencies drastically lower than

the 99.9% quoted for ordinary particulate matter were observed with Pb-212, Es-253, and Pu-238

Constans continuo, latus demissus

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sources, indicating that the phenomenon is common to all of these..." It seems as if the alpha particle,

from the radioactive decay, literally knocks the particles loose. As it creeps through any filters that is

in it's way, the DOE thinks that smaller pieces of the plutonium particles, break off the original

particle, increasing the joy of downwinders.

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than 25% of the plutonium can exist as Pu(VI), an ion that is far more soluble, and thus mobile, than

Pu(IV). This new property will have important implications for the long term storage of plutonium."

So when will the DOE apply this information to protect our water and our health ? We need above

ground, inspectable and retrievable storage for the billions of plutonium particles dumped over our

water. To ignore these studies is inexcusable.

There is one more paper I will quote, from Dr Runde. I went to the Wolfgang Runde article called

"The Chemical Interaction of Plutonium in the Environment." It is from a Los Alamos conference on

plutonium transport. That can be referenced at

<http://lib-www.lanl.gov/pubs/number26.htm> Runde

acknowledges the colloid transport was fast, and concludes, "What is clear is that transport models to

date have underestimated the extent of colloidal transport on plutonium mobility." Let me put his

conclusion in context, and quote Dr Runde to a fuller extent. Dr Runde, on page 408 (or 17 of 20 on

the computer download) says, " We are also trying to better understand the sorption/desorption

reactions of actinides with colloids and the actinides' resulting transport characteristics. This area of

environmental migration received attention with the discovery of plutonium in a borehole at the

Nevada Test Site (Kersting et al. 1999). The plutonium had evidently migrated 1.3 kilometers in only

30 years." Runde continues," As discussed in the article by Maureen McGraw, we now believe that

colloid transport was responsible for this remarkably fast movement of plutonium through the water

saturated rock. It is not clear, however, whether the transport was facilitated by intrinsic plutonium

colloids or natural (clay or zeolite) colloids. What is clear is that transport models to date have

underestimated the extent of colloidal transport on plutonium mobility."

Constans continuo, latus demissus

Page 7

Air Permit No. TV-0080-0041 Savannah River Site December 6, 2002

The only reference to the uniqueness of bomb testing is the initial time it takes to reach plutonium

exposure to water. Runde notes that the underground explosion allowed the plutonium to be left in

water, while a waste repository would differ, because the "radionuclides would be isolated, at least

initially, from the hydrogeologic environment.". (p490) Runde also mentions a new concern for Pu

migration, and that is microbes acting as " mobile colloids. " While they may act as a barrier, they

may aid transport. Runde says, "As such, they act as mobile or even self propelled colloids. (p 409,

18/20). That is another reason we should simply re-barrel the plutonium waste, instead of shallow

burial. Runde concludes, " More sophisticated models are needed to account for all the potential

migration paths away from an actinide source. Theoretical and experimental scientists will be challenged for years by demands of developing these models.(p 410, 19/20)

Gee , I look forward to when they finish the job.

Sincerely,

Dr Peter Rickards DPM

- [REDACTED]
- 1)A.B. Kersting et al. , Lawrence Livermore National Laboratory, Nature, vol 397 Jan 7, 1999, p56-59.
 - 2)McDowell-Boyer , Environmental Science Technol. , 26 , 586-595 (1992)
 - 3)Ryan et al, Physiochem. Eng. Aspects, 107 , 1-56 (1996)
 - 4)JM Haschke et al. ,Science 287, Jan 14 2000
 - 5)C Madic, Science 287 , Jan14, 2000

Response to E-Mail Comment #9

Items #1-5:

This comment duplicates E-Mail Comment #5. Please refer to the responses to E-Mail Comment #5.

E-Mail Comment #10

From: Chuck Broscious
Sent: Wednesday, September 08, 2010 6:25 AM
To: ECF Recapitalization
Subject: EIS

Please send me a copy of this EIS to:
Chuck Broscious
[REDACTED]
[REDACTED]

Response to E-Mail Comment #10

The commenter has been included on the distribution list for the Draft and Final EIS.

Pocatello Meeting Comment #1

MS. BRAILSFORD: Thank you.

My name is Beatrice Brailsford. I'm with the Snake River Alliance.

The Alliance will be submitting written comments, scoping comments by September 3rd, right? Okay.

But I did want to take this opportunity to thank you for having a public meeting in Pocatello. This, I think, has been a very good meeting, and we do appreciate this particular meeting. Thank you.

Response to Pocatello Meeting Comment #1

The commenter's interest in the proposed action is noted. E-Mail Comment #7 contains the written comments provided by the Snake River Alliance.

Pocatello Meeting Comment #2

MR. TURNER: Hello. I'm Roger Turner. I live in Pocatello. Thank you for the opportunity to comment today on this proposal.

I particularly want to thank -- thank you for including the issues on the -- in the scoping for potential impacts of emissions on air, and water quality, on plants, animals, their habitats, including species as -- as listed in your documents; that you indicate that you can -- that you take a close and hard look at the potential impacts from accidents and the potential impacts of terrorism or sabotage; the potential effects of the public health from exposure to hazardous -- hazardous and radiological releases; and potential safety of impacts to workers; as well as cultural resources and the compliance with applicable regulations. I appreciate you including that.

One of the things that I wanted to take a look at is -- just a second here.

Oh. I hope that the -- the draft EIS

1 | and scoping take a close look at the details of
the need for this project. I think that one of
the things that's been raised by the -- by this
project is that there's several complex
substructures for this process and infrastructure
that includes the examination of spent nuclear
fuel and irradiated materials.

2 | And this includes the preparation of
irradiated materials; the receipt and unloading
of spent nuclear fuel; the examination of those
fuels using visual, microscopic, metallurgical
techniques in the preparation of small fuel and
non-fuel test samples for insertion into test
reactors where they -- they are irradiated.

It would require, you know, the
structure for -- for removing spent fuel from
the -- from the Naval shipments. And then
placing them either in dry storage or the
examination area. And then it would also require
the transport and removal from the examination
area into the dry storage area.

And so I guess it would be my
suggestion that you include a level of detail for
each of those particular substructures so that
the public can examine the need for this -- this

large proposal.

One of the issues that concerns me is
that although is -- with respect to that also is
the alternatives. Some of the reasons that were
listed -- that were listed for the alternatives
3 include the no-action alternative, which is just
to overhaul all of those substructures that I
just listed. The concern I have is that this in
itself sounds so complex as to require an EIS in
itself if you are going to overhaul such a
complex facility.

In order to alleviate the concern about
that, I suggest that scoping include a level of
detail about the -- the -- what would need to be
overhauled and the status of their condition;
4 what's already recently been overhauled and what
hasn't; perhaps a schedule of the past
overhauling of those facilities and their -- an
exist -- a close examination of -- of the
existing facilities.

The other item that I suggest that you
include in this is, there's a very limited amount
in this draft EIS that addresses waste. Although
5 the posters here were very good about -- and your
presentation was excellent about the -- that

agreement and the need for removal of waste, I
think additional examination of waste handling
would be an important addition to this. And that
would include, you know, what -- what
improvements, if any, have been made in the
technology of pool storage and the chemistry of
it.

And the -- and there has been -- the
reason for that is there have been some
historical problems with respect to corrosion of
wet storage in the past. And also, the -- I
believe that the EIS should include an
examination of dry storage technologies.

And so in summary, I think there needs
to be a closer look at waste handling and waste
storage and accumulative effects of those.

I think that's all I have today. Thank
you.

Response to Pocatello Meeting Comment #2

Responses to Roger Turner's comments follow:

Item #1:

The purpose and need for the proposed action are provided in Section 1.3.

Item #2:

A detailed description of the naval spent nuclear fuel handling process is provided in Chapter 1. Chapter 1 also includes a discussion of those items that are in and out of scope for this evaluation.

Item #3:

The No Action Alternative, as currently defined in Section 2.1, limits efforts to preventative and corrective maintenance. This level of effort may not keep the infrastructure in safe working order until 2060 (i.e., maintenance alone may not be sufficient to sustain the proper functioning of structures, systems, and components). In addition, this level of effort will not provide the capability to unload M-290 shipping containers. Therefore, the No Action Alternative is an unreasonable alternative that does not meet the purpose and need for the proposed action.

Item #4:

Chapter 1 describes ECF and the related facilities at NRF used for management of naval spent nuclear fuel. The only facility that would be overhauled by the proposed action is ECF. The nature and scope of the overhaul alternative is described in Chapter 2.

Item #5:

Waste management is discussed in Section 3.14. Impacts from waste management are presented in Section 4.14. Cumulative impacts from waste management are covered in Section 5.2.10.

Item #6:

Modern water pools have liners. Information about water pool leaks from commercial spent nuclear fuel pools is provided in Appendix F, Section F.5.4.12. As described in Chapter 2, the water pool for both the New Facility and Overhaul Alternatives would have a water-tight barrier between the water in the pool and the concrete walls of the water pool. In addition, a groundwater monitoring system would actively monitor the site for leaks. It is expected that the combination of the water pool liner, concrete walls, and groundwater monitoring would prevent water pool water from leaking, undetected, into the environment. Further, the integrity of the water pool liner and structure would be ensured by maintaining a low-corrosive environment in the water pool water through proper water chemistry control.

Item #7:

The NNPP continues to temporarily store naval spent nuclear fuel in a dry configuration awaiting shipment to an interim storage facility or geologic repository. As identified in Section 1.5.3, dry storage technologies were evaluated in DOE 1996. The NNPP is not changing its dry storage method from that described in DOE 1996. An examination of dry storage technologies is outside of the scope of this EIS.

Pocatello Meeting Comment #3

MR. DOWNS: Yeah, I'm Bill Downs. I'm familiar with that with the Toastmasters.

I -- I think it's interesting, and I think Mr. Turner brought up some things that are a good point in that --

Well, okay. I'll give you a history of me. I spent 18 years at the Advanced Test Reactor, so I handled a lot of fuel. I was a reactor operator. And so I know that that can be done safely. Okay. I'm still standing, and I don't have a third arm or anything like that.

I live 20 -- 25 miles away from the Advanced Test Reactor. I live just south of the East Butte out of -- out there on the desert west of Blackfoot. If I was scared of that place, I wouldn't live there. But I live around there, and I've lived there for close to 30 years.

I was involved in a reduction in force
in 2003. We banded together and formed a group
where we all helped each other in an attempt to
find jobs. And the one thing that we found
really fascinating was that people, I'm going to
call it in town, in Idaho Falls, mostly, is where
we live, did not know what's going on out there
on the desert. And some of those people have
been here all their life, since before INL was
out there.

1
And I thought that was -- we were
flabbergasted because when we are explaining what
our qualities were, they had no idea how that
applied to anything in town. You know, they --
they -- really they kind of looked at us kind of
strange.

So -- and when he asks for more
information, I think that should be applied.
There should be some kind of a program -- I know
at -- at HER, we would have even high school
groups come and tour the place. Okay. Now, some
of that is, you know, beyond, you know, economic

reason or whatever. But people in town need to know what's going on out there so they can realize that there's an opportunity for Southeast Idaho.

The technology out there, the knowledge, and the opportunity for expansion, I think are -- are unlimited if people knew so that they could promote that. I know that the Snake River Alliance is here. They are probably more knowledgeable than the average person. But even if they knew -- you know, people like me, there's a couple other guys I've met here that work out there, we have no desire to get hurt. Okay.

And we're Idahoans. We love this land. I was talking with your HR rep. I'm over 50 so, you know, the first thing to go is your memory, but he introduced himself. And he acknowledged that the people that stay out there probably lived here before. They love Idaho. The people that come from outside learn to love Idaho and stay here.

A lot of national -- other national companies have attempted to close down their offices here in Pocatello, Idaho Falls. But then all of a sudden they realize, you know, we can't find anyplace else in the nation that gets the work done. The work ethic here is phenomenal. Okay. So we've got a lot of pluses.

And we as a people need to promote INL. All right. The safety there is incredible. If we applied the safety rules here in town that we had to live up to out there, that you guys have to live up to, people would just be -- well, they'd wonder how they ever lived, you know, from one day to the next.

2

The other thing why I think this would be an opportunity is, we have values here in Idaho. We -- everybody in this crowd probably has very similar values. When the Navy had the school out there, those values got implanted into

those sailors. Which, you know, I was there in the fleet for a while, a short while, but those values add to the fleet. Okay.

If we can bring anything in here, it gets recognized nationally. Our values get implanted to other people. Almost -- almost, I could say, on a national extent.

So we as a people, the few of us that are here ought to be talking about what went on here to our neighbors so that our neighbors are interested in the next time something comes up. Because we would like -- well, we don't want everybody to show up here, you know, from other parts.

But what if our values spread to other parts of the nation? Okay. We'd probably all get along a little bit better. And I think you're probably looking at me like, okay, he's really idealistic or whatever. But I know it's the truth. Okay. I saw it in the fleet. I saw what the potentials of non-values are. And I saw that those values did get spread. The work ethic here is phenomenal.

I mean, Mr. Turner, you look like a farmer or a rancher. That work ethic gets

applied to the site. Most of our mechanics were farmers or ranchers that -- well, their sons. Their son says, I don't want to work on the farm anymore, so they've gone out there, and they straightened out the engineers on what would work.

And I'm not kidding you, you know. An engineer has got an incredible amount of knowledge, and he wants to apply a new idea. A farmer, you know, has busted his knuckles on their equipment, he says, nah. So the two of them come together, and the INL is a place that nobody can really close down. Because I know that there's been attempts to do that. The work ethic keeps it alive.

We've got a great thing out there. We want to keep our sons and daughters here. I know I'm going to the Idaho State University right now. And you talk with the young ones. Well, when you get your degree, what are you going to do? Well, I'm going to have to leave town because the jobs aren't here.

We need to promote ourselves to keep our young ones here, to keep our values here, to make this place grow. This is not an ideal

retirement community. If everybody young leaves, those of us that are older are going to have to work to keep this place alive or there's not going to be anybody to support us because all the young ones left.

And some people may think that sounds far fetched. But no, half of my kids moved out of town because there's nothing here for them and the lifestyle. I can talk with just about anybody else, you know, that's got the same color of hair as me. They -- their kids are not sticking around.

INL has national and yeah. Even Washington knows where INL is. We can say something about ourselves. We can keep this place alive, we can make it grow. We can -- we need to get people to live in town who know what the work ethic is out there.

So when Mr. Turner was talking about -- you had pictures of people that probably look like his neighbor. And he can identify with that. Your neighbors are working out there, and they're doing it safely.

My light is flashing, so I'll quit.
Thank you.

Response to Pocatello Meeting Comment #3

Item #1:

This document provides a significant amount of unclassified information related to the operations of the NNPP at NRF. In addition, this document cites a large number of publically available references which provide information about the INL.

Item #2:

Section 4.10 describes the economic impacts of the proposed action including potential job growth.

Twin Falls Meeting Comment #1

DR. RICKARDS: No trouble. And I would like to extend my appreciation for you coming to Twin Falls. And also all of the folks in -- in the Armed Forces, we are all indebted to you for your services and your sacrifices.

So basically, though, on the Environmental Impact Statement -- and I should say, I'm Peter Rickards, a local podiatrist, spokesman for Idaho Families For The Safest Energy.

And basically I will -- am going to e-mail by technical comments in, and I'm just going to verbalize them here. I've had a good time talking with your staff and mentioning some of the technical scoping questions that I'm asking. And I also related to them that none of this technical scoping questions would be answered. In my 22 years of doing this, not one has been answered.

1 And basically, you are stating that
you're in compliance with the '95 settlement
agreement. And that appears to have limited your
focus on the request that -- from our politicians
that wrote that agreement that you keep the Naval
facility here.

But the NEPA law is a great law signed
by Richard Nixon in 1970. And you really are by
law obligated to review all of the options
available to you. And you are mandated to review
all of the environmental impacts.

2 And I'll remind you also, because you
want to focus through the 1995 settlement
agreement, if you look at Section J(4) of that
settlement agreement, if you analyze in this one
whether you should cluster the nuclear Navy in
Savannah River, South Carolina versus Idaho,
and -- and basically redo all of the
environmental impacts of the transportation of
that fuel, basically there are no ports in Idaho.

In South Carolina, you're right on the
2 ocean where they -- then they can pull up in
Charleston and possibly even modify Savannah
River to do that. But you have to take all that
fuel and transport it across the country to
Idaho. I have talked to the engineers who
designed the true cast and the new cast and --
and the vulnerabilities of a fire that goes for
3 two hours, basically, will get an unbounded
release of all the fuel in there.

They have the testing for those casts,
the fire is put out in 30 minutes. That's
literally because the documentation shows that at
two hours, you do have up to an 1,800 degree fire
such as the one in the Baltimore Tunnel and --
and several other fires that can take -- can --
can happen just by who runs into you.

You-all could be the safest drivers transporting this. But the waste trucks, the situations you run into can't be controlled, and there are scenarios just even coming in from the West Coast when you go over the Snake River near Glenns Ferry. I've talked to those engineers,
3 you know, they do a 30-foot drop test onto a spike.

But if you drop those off of the bridge onto the jagged rocks of the Snake River Canyon, you drop a lot more than 30 feet. And the rip and roll action can spew that cast wide open. Fires can do it.

And basically, Section J(4) of the Idaho Settlement Agreement says that any Environmental Impact Statement that makes any inclusion different than what we've settled on is -- is okay to enforce. And that Idaho has to agree with that. And if they disagree with it, the DOE can take them to court.

So basically, if you truthfully look at

the environmental impacts of a worst case
accident -- worst case accident scenario, you're
a disgruntled employee disrupting the facility
from your lover's triangle or for whatever
reason, if you look at a terrorist strike, if you
look at any kind of accident that the
environmental impacts from the fallout in Idaho
will float across Salt Lake City, Chicago, the
whole country.

And if you do that in Savannah River,
the chances of that blowing out into the ocean
and -- and avoiding the human exposure, at least
in the intense degree that it would for a huge
population downwind of Idaho, you must conclude
that the Environmental Impact Statement would be
safer in Savannah River than in Idaho.

And if you draw that conclusion, Idaho
can't object. You -- just because they've put in
writing that we want to be the Naval facility,
they actually have to agree with it. They
actually put Section J(4) in because they want
all the nuclear projects here. But it also can
be used against them to take them out of the
state as well.

I think you're actually going to see

since Yucca Mountain is closed, that an Environmental Impact Statement will come to the conclusion it's best to leave it in Idaho, and we're going to be stuck with it, and we've already agreed to do that.

But I'm going to ask just technical questions on the HEPA filters that are used in these facilities. I'm going to get to that in a second.

But really on the basic level alternative to the clusters, the examination at the ATR, and your use of the ATR, I beg you to look at the documentation at www.yellowstonenuclearfree.com or the Idaho based Environmental Defense Institute.

6

They basically have exposed the ATR for what it is. It is not a national jewel. It is a rickety old building that is hanging by a shoestring. And it has a tin roof for containment. And a worst case accident scenario presently, without your presence there and your spent fuel there, can release millions of curies of radioactive. And that's right out of their documents. They're presently now trying to patch it up.

I was actually the first one in on this when they had the plutonium-238 scoping hearings for clustering plutonium-238 production at the ATR. And I got an anonymous tip from a worker. Please check into things. You know, they're all telling you this is safe and the crown jewel of our facility, but some crap happened about a month ago.

6

So I put in my Freedom of Information Act on the occurrence reports for the previous year, and low and behold, a month before these hearings where they guaranteed us that it was safest, best facility ever, three workers found bolts on the floor. And when they tried to figure out where the bolts at the ATR, what -- what are these bolts doing on the floor? They actually found that they fell out of the earthquake support beams.

You've got to think about that, you know, you're counting on those beams to hold the facility up to prevent a million curie -- a multimillion curie release. And they fell out of a stationary building. And you haven't even started shaking them yet. And that is the tip of the iceberg.

6 They have computer panels and safety
stuff hanging by a thread, the facility is old,
part of the pipes are uninspectable. It's
ridiculous.

And what I think you're doing here is
actually illegal, like I said in the beginning.

7 They have illegally retooled the INL with
infrastructure to attempt to cluster all of the
nuclear dirty work here. So that when you come
along with your impact statement and you go, oh,
look at the great infrastructure at INL. This is
perfect. We can built right around that. And
that's illegal. They -- they didn't scope the
impact statements for that. They haven't looked
at the big picture, and you are not allowed to
piecemeal your way in. They're not allowed to
spend that money on making us the spent fuel
place. And -- and not -- and then use that as a
basis for clustering things around here.

8 So those are some of the scoping
hearings. On the technical stuff on the HEPA
filters and the plutonium-238, which was a
minority isotope on your spent fuel. But I'm
going to give you Dr. Bob Scott's paper peer
reviewed for radiation dosimetry and an official

cabinet of science member, and he's actually a very pronuclear, hormesis believer.

And I've talked to Dr. Scott personally. He did a worker analysis for plutonium-238 inhalation at Rocky Flats for DOE workers. And by far, that's a plutonium-239 facility. Plutonium-238 is 275 times more radioactive and more destructive in your lung because of the short half-life.

8

And even though it's a minority isotope, I think it's much less than 1 percent of the inventory there, what he says in the paper is real clear. Any time a worker inhales any plutonium, some it's going to be 238. And that dose, even with three particles inhaled will exceed the 5,000 millirem dose of the worker. So you take him off that here. Literally that means that these microscopic particles -- I'm getting the yellow light, so I'll slow it down or wrap it up.

But basically the fact of the matter is, you're only legally allowed to give 10 millirems to the public. All the scoping hearings to date, like at the plutonium-238 facility where it's concentrated said the worst

8

case accident scenario, the HEPA filters will work great to .1 times ten to the minus 9th millirem exposure is the maximum exposure. I mean, it's a boldfaced lie. They're -- they're using tricks like population of person rem doses versus what is one particle of plutonium-238 that dose inside of one citizen's lung when it comes out of the HEPA filters.

And the HEPA filters cannot contain plutonium. The alpha emitter knocks itself out of the filters, according to DOE documents from way back to 1970, it goes back into the air and creeps through floor filters in a room.

So those are some of the things. I appreciate you coming to Twin. And I'm looking forward to losing my bet and seeing all of my impact statements answered for the first time in 22 years.

Response to Twin Falls Meeting Comment #1

As stated above, Dr. Rickards provided additional comments via e-mail. Responses to those comments are provided in this Appendix under E-Mail Comments #5 and #8.

Item #1:

As noted in Section 1.5.3, alternatives for management of spent nuclear fuel managed by the DOE, including naval spent nuclear fuel, were comprehensively evaluated in DOE 1995. Based on that evaluation, ROD 1995 chose to implement regionalized spent fuel management by fuel type. Under that alternative, naval spent nuclear fuel is managed at the NRF at INL. There are no factors that warrant reconsideration of that decision.

Item #2:

As noted in Section 1.5.3, alternatives for management of spent nuclear fuel managed by the DOE, including naval spent nuclear fuel, were comprehensively evaluated in DOE 1995. The consequences of accidental releases were considered in that evaluation; it was found that the consequences of centralizing spent fuel management at SRS were higher than the consequences of centralizing spent fuel management at INL. Based on the evaluation in DOE 1995, ROD 1995 chose to implement regionalized spent fuel management by fuel type. Under that alternative, naval spent nuclear fuel is managed at the NRF at INL. There are no factors that warrant reconsideration of that decision.

Item #3:

As noted in Section 1.5.3, alternatives for management of spent nuclear fuel managed by the DOE, including naval spent nuclear fuel, were comprehensively evaluated in DOE 1995. Transportation-related impacts were considered in that evaluation. Based on that evaluation, ROD 1995 chose to implement regionalized spent fuel management by fuel type. Under that alternative, naval spent nuclear fuel is managed at the NRF at INL. There are no factors that warrant reconsideration of that decision.

Item #4:

Hypothetical accident scenarios, including intentionally destructive acts, are considered in Section 4.13 and Appendix F. The footprint of the release and extent of environmental impact are described in Appendix F.

Item #5:

Refer to the response to Item #2.

Item #6:

This comment relates to potential options for recapitalization of the examination infrastructure at ECF. As noted in the amended NOI published on May 10, 2012 in 77 Fed. Reg. 27448, that action has been deferred and is no longer in the scope of this EIS.

Item #7:

As noted in Section 1.5.3, alternatives for management of spent nuclear fuel managed by the DOE, including naval spent nuclear fuel, were comprehensively evaluated in DOE 1995.

Transportation-related impacts were considered in that evaluation. Based on that evaluation, ROD 1995 chose to implement regionalized spent fuel management by fuel type. Under that alternative, naval spent nuclear fuel is managed at the NRF at INL. There are no factors that warrant reconsideration of that decision.

Item #8:**Inhalation of Plutonium**

The B.R. Scott article (Scott & Fencl 1999) identified by the commenter models the amount of plutonium intake by workers in an environment where there are few particles available for inhalation - a condition in which the authors consider a statistical (i.e., stochastic) approach for estimating intake is more appropriate than a deterministic approach. The model uses an assumed distribution of particle sizes which are available for inhalation. The range in assumed particle sizes leads to large variability in calculated radioactivity intake when few particles are inhaled. Since inhalation occurs in discrete particles that have a log normal distribution, most workers will inhale smaller particles while a few workers may inhale large particles. Of those particles inhaled, only a portion would be deposited in a section of the respiratory tract that contributes to an internal dose. The authors correctly note that in addition to the variability in intake, there is uncertainty on where particles deposit in the respiratory tract. Since the location of deposition significantly affects the dose received from the particle, the authors do not attempt to estimate the doses associated with the intake and subsequent deposition. The authors do not conclude in the paper that inhalation of a single particle of ^{238}Pu would exceed the 10 millirem public exposure limit established in 40 C.F.R. § 61.102. However, if a large enough particle were to be deposited in the lungs, an individual's exposure could exceed 10 millirem.

Section F.3 of the EIS discusses the generally accepted models and assumptions used for estimation of risk posed to workers and the public from releases of radioactivity during routine naval spent nuclear fuel handling operations and hypothetical accident scenarios. The generally accepted model for particle dispersion used in the EIS is the Gaussian model for a plume which is one of the most common modeling methods. For example, the Gaussian model is used by both the DOE (DOE 2004c) and Nuclear Regulatory Commission (NRC 2011). In addition, the latest guidance for converting radioactivity inhaled to dose received was used in the EIS analysis (ICRP 1995). This includes the use of dose conversion factors for appropriate particle sizes for environmental release as recommended by the ICRP (ICRP 1993).

Additionally, the larger particles discussed in the article "associated with the upper tail of the intake distribution do not necessarily reflect a higher health risk as many of the high intake events are associated with deposition of large particles in the nose, which is a radioresistant site." Therefore, if a member of the public were to inhale a large particle, the particle would be unlikely to be deposited in the lungs. The article is also specific to exposure to workers. As discussed in the article, the particle size and radioactivity distribution are likely to be very different for an accident resulting in public exposure.

HEPA Filtration

For routine naval spent nuclear fuel handling operations, the impacts reported are based on actual emissions scaled to future operations. For hypothetical accident scenarios involving an intact facility structure with HEPA filters, this EIS models HEPA filters as being 99.9 percent effective for

particulates (a more conservative assumption than the 99.97 percent higher filtration efficiency frequently reported in DOE documents). In addition, multiple HEPA filter units in series are conservatively modeled as a single unit; and no credit is taken in the model for multiplicative protection from a series of HEPA filters. For hypothetical accidental scenarios involving damage to a facility structure, this EIS takes no credit for HEPA filters and does not include HEPA filtration.

The NNPP requires that HEPA filters to the environment be tested frequently for proper air flow, pressure, and filtration effectiveness. Testing to verify that the HEPA filters are operating effectively occurs upon initial installation, after any modification of the system, and annually. Additionally, the NNPP replaces the HEPA filters whenever the filters do not pass inspection, if damage is detected or suspected, according to schedule, or if the radiation level in the filter reaches a set-point.

Twin Falls Meeting Comment #2

MR. CHISHOLM: My name is Bill Chisholm, and I have a lot -- a lot -- I have a lot of history of the eco-actions here in Idaho. In fact, I decorated one of your train cars back in 1992, I believe it was. It was just sort of a prelude -- prelude to the -- to the agreement that you have.

You know, because we're -- we're very concerned here in Idaho that -- that Dr. Rickards says, somehow we're sort of become de facto sort of nuclear waste repository for us. You know, the year before -- private waste was coming in, the Navy waste was coming in. And then we don't want to become a de facto repository with the Snake River Aquifer and that has serious concerns along with some of the concerns that Dr. Rickards has regarding the -- the potential for any air contamination that would go out of the facility.

3

You know, I'm -- I'm really believe strongly that -- that you have to -- you have to consider the other options, and you can't just consider Idaho and INL as part of this process, is you also have to take a look at what other options were out there to make a good facility -- or good decision on behalf of the public. So that, you know, perhaps include the Savannah River in the process.

1

But we have -- we have -- we have this document, we have this 1995 agreement. But, you know, it was an agreement that, you know, all -- all the -- all the plutonium was supposed to be cleaned up. And -- and agreements have a tendency somehow that they're made -- they're made in the present, but you know, what goes down the road, 1935 (sic) was 25 years away. You know, a lot of things can change.

And -- and what happens too often, in my opinion, is they make these agreements in the

present, but nobody -- nobody that signed the agreement is going to be around to make sure the agreement is -- is enforced in the future. So I think we have -- have to, at least as part of that as a cumulative impact and take a look at -- at what -- what mechanisms are in place to be sure that that waste leaves.

We don't have a -- we don't have a repository currently for the -- for the nation's -- nation's waste, and -- and everybody who wants to keep putting that off for the next generation to -- and that's -- I've been -- forever. There's always new people -- there's always new people on the government side of the equation.

So I want to make sure that we address the cumulative fact, is there -- is there options outside of Idaho. And to follow up on what

- 4 | Dr. Rickards thinks about it. You know, the most catastrophic has potential. I was a wild land fire fighter. You know, I had a fire in my own backyard this year. I never had seen before, so things can change, and those things need to be considered in an honest process.

So thank you.

Response to Twin Falls Meeting Comment #2

Item #1:

Although the NNPP has the necessary loading facilities at NRF and transportation casks, the timeframe reasonably necessary for shipment of naval spent nuclear fuel to a repository or storage facility outside of Idaho is dependent on the availability of such facilities. The timing of availability of those facilities is uncertain. At the time of this Draft EIS, the NRC is considering the DOE application to construct a geologic repository at Yucca Mountain. The President's Blue Ribbon Commission on America's Nuclear Future evaluated alternatives to the repository at Yucca Mountain. The DOE strategy for implementing the recommendations of the Commission estimated that a pilot interim storage capability could be operational by 2021, a consolidated interim storage facility could be operational by 2025, and an alternate geologic repository could be operational by 2048.

Item #2:

The environmental impacts from air emissions are discussed in Section 4.6.

Item #3:

As noted in Section 1.5.3, alternatives for management of spent nuclear fuel managed by the DOE, including naval spent nuclear fuel, were comprehensively evaluated in DOE 1995. Transportation-related impacts were considered in that evaluation. Based on that evaluation, ROD 1995 chose to implement regionalized spent fuel management by fuel type. Under that alternative, naval spent nuclear fuel is managed at the NRF at INL. There are no factors that warrant reconsideration of that decision.

Item #4:

Hypothetical accident scenarios, including intentionally destructive acts, are considered in Section 4.13 and Appendix F.

A.3 Public Comments on the Amended NOI and Responses

This section provides comments received during the public comment period for the Amended NOI and the associated NNPP responses.

Mail Comment #1 to Amended NOI

Date: June 4, 2012

To: Ms. Samantha O'Hara (C8U-Naval Reactors)
Naval Sea Systems Command
1240 Isaac Hall Avenue, Ste
Stop 8251
Washington Navy Yard, DC 20376-8251

From: Sandra Blazius

[REDACTED]

Dear Ms. O'Hara:

If Mr. Christopher Harrit of the Naval Nuclear Propulsion Program sent me a letter with enclosures regarding the Revised NOI of the EIS for the Recapitalization of the Naval Spent Nuclear Fuel Handling and Examination facilities at INEL here in Idaho. He invited my comments. I hope that my comments will be appropriate to the kind of input you are looking for from the general public.

1 | Firstly... I am 100% behind the re-funding of ~~all~~ these projects. I consider the refurbishing of the aging infrastructure of extreme importance and urgency. Not only to maintain our readiness for national defense and to keep the nuclear-powered fleet in tip condition -- but on the home front, to guard against a terrible accident, killing thousands of people.

2 | The leaking, aging canisters are the most worrisome items, right now. In 2005 - I first heard of "6 leaking canisters" at INEL via our town newspaper. At the DOE Meeting in July, 2005, held at CSZ in Twin Falls, we heard that the amount of radiation leaking into the aquifer was minuscule - but happening... no longer conjecture. I have heard or read nothing more about this since. But the problem is not just leakage into the aquifer. To me, the leaking canisters are a "signature" of the radioactive waste inside leaking up - and corroding the canister, and a sign of a potential explosion of one or more of the containers in the near future - from being stored in there so long. A plutonium release could happen killing thousands downwind; not.

3 | I am without hesitation in support of Alternative(1), for a brand new ECF facility to be built... no matter the cost. Our lives are worth more! The aging infrastructure of INEL is frightening. Alternative(1) is the safest way -- for all of us -- the workers and the public at large. Your decision to split the EIS into two is a sound one, as time is of the essence. I am hoping new canisters will be a part of the re-building and refurbishing.

4 | My other comments are these:
- Winds can come at times toward the SW from INEL -- could carry radioactive emissions straight toward the Magic Valley - Twin Falls area.
- Water quality is already affected by the leaking into the aquifer - although the amount is minuscule - any amount of radiation is harmful, and small amounts cause cancer in the population over time.

In summary, I am 100% in support of funding both projects...and the sooner the better. I repeat that I am strongly for Alternative(1), the safest possible. The leaking canisters concern me greatly, as with a large plutonium release, thousands of people, animals, plants would die, and leave the area uninhabitable for a long time.

Thank you for contacting me. Sincerely,

Sandra Blazius
Sandra Blazius

(70 yr. old retired senior
in Twin Falls community).
20 yr. resident-So. Idaho
page 1 of 1

Response to Mail Comment #1 to Amended NOI

Responses to Sandra Blazius' comments follow:

Item #1:

The commenter's support of the proposed action is noted.

Item #2:

The incident with the six leaking canisters did not occur at NRF. Dry storage in canisters is outside the scope of this EIS; dry storage container systems for management of naval spent nuclear fuel were evaluated in DOE 1996. Canisters are made of corrosion-resistant material and backfilled with an inert gas. Therefore, they are not susceptible to the problems identified by the commenter. Appendix F provides an evaluation of routine naval spent nuclear fuel handling operations and hypothetical accident scenarios associated with radiological aspects of the recapitalization of naval spent nuclear fuel handling capabilities.

Item #3:

The analyses in Sections 4.6 and 4.13 account for variability in wind direction.

Item #4:

Section 3.4 discusses NRF groundwater monitoring for both chemical and radioactive contaminants. As discussed in Section 4.4, no radiological effluent would be discharged to the Snake River Plain Aquifer. No wastewater or storm water would be discharged to waters of the U.S.

Mail Comment #2 to Amended NOI

United States Government

Department of Energy

memorandum

Idaho Operations Office

Date: June 5, 2012

Subject: Department of Energy Comment on the Revised Scope of Environmental Impact Statement for the Recapitalization of Naval Spent Nuclear Fuel Handling and Examination Facilities at the Idaho National Laboratory (IS-12-024)

To: Samantha O'Hara
Naval Sea Systems Command
ATTN: 08U-Naval Reactors
1240 Isaac Hull Avenue, SE, Stop 8036
Washington Navy Yard, DC 20376-8036

This letter formally provides Department of Energy (DOE) comments to the revised scope of the Environmental Impact Statement (EIS) for the Recapitalization of Naval Spent Nuclear Fuel Handling and Examination Facilities at the Idaho National Laboratory (INL). The EIS revision defers recapitalization of Navy examination capabilities for naval spent fuel at the Naval Reactors Facility (NRF) and moves consideration of that recapitalization to the cumulative effects section of the EIS. DOE is interested in the EIS revision because the NRF is located at the INL and some supporting resources are shared by the DOE and Naval Nuclear Power Propulsion (NNPP) at the INL. Both organizations work with nuclear fuel, irradiated material performance and spent fuel storage, and their post-irradiation examination needs are similar.

1 | DOE's strategy is to establish world-leading PIE capabilities to advance nuclear fuels and materials. Towards that end, numerous facilities and equipment upgrades have been completed and others are underway at the Idaho National Laboratory. The Irradiated Materials Characterization Laboratory (IMCL) is a prototyping PIE facility and its construction is nearing completion. We currently are conducting an alternatives analysis for an advanced post irradiation capability. Therefore, DOE recommends that NNPP continue to work with DOE to determine if existing and planned DOE capabilities can support NNPP's nuclear fuels and materials examination needs. In addition, other facilities and capabilities exist at the INL site that could help offset or supplement your needs and we are available to discuss those options as your project moves forward.

The contractor project director for the Advanced PIE Capability analysis is Michael Patterson at (208) 526-5525 or mw.patterson@inl.gov. I invite you to contact him to discuss specific areas of joint collaboration. Because the project has only received approval of Critical

Samantha O'Hara

2

June 5, 2012

Decision 0 (CD-0), a federal project director has yet to be named. The federal point of contact for this effort is W. Greg Bass at (208) 526-7184 or basswg@id.doe.gov.



Richard B. Provencher
Manager

cc: Brady Haynes, NRF-IBO
Christopher M. Henvit, NRF-IBO
Mike W. Patterson, BEA
Vincent F. Tone, BEA
Mitchell K. Meyer, BEA
Kemal O. Pasamehmetoglu, BEA
David J. Hill, BEA
John J. Grossenbacher, BEA

Response to Mail Comment #2 to Amended NOI

Item #1:

The NNPP will continue to work with the DOE to determine how existing and planned DOE capabilities can support NNPP's nuclear fuels and material examination needs.

E-Mail Comment #1 to Amended NOI

AGENCY: Department of Energy.

ACTION: Amended Notice of Intent to Revise the Scope of an Environmental Impact Statement.

justice

Potential safety and health impacts to workers.

Compliance with applicable Federal and state regulations.

Agency:USCBP

Document ID:USCBP-2012-0018-0001

Your Comment Tracking Number:8100c560

Procurement Integrity Act RECOMMENDATION Docket Services processes

Procurement Integrity Act

Decision

Matter of: Y&K Maintenance, Inc.

File: B-405310.6

Date: February 2, 2012

DECISION

Y&K Maintenance, Inc., of Seoul, Korea, protests the award of a contract to SEM Service Co.,

Ltd., of Seoul, Korea, under request for proposals (RFP) No. W91QVN-11-R-0135, issued by the

Department of the Army, for operation and maintenance (O&M) of the Medical Command-Korea (MEDDAC-K) facilities in the Republic of Korea.

We sustain the protest in part and deny it in part.

Re: Medical Reimbursement EEOICP Roles [Incident: 120130-000245]

https://questions.medicare.gov/app/account/questions/detail/i_id/558571

283 - USASHD,USASHD-217 Operations Office Managers

THANK YOU !

IAEA safeguards We have received your application for an account for the FBO>GovernmentSystem. Please verify the following information:

Agency:Administrative Office of the U. S. Courts> Office: Top Level>

Location: 53095 D-U-N-S No. 63-108-7863 Company Info 276 9 Yeon-dong Cheju

organization: Oriental Economic Institute (Keomgyosil) addressl: 276 9

Yeon-dong city: Cheju

state: VA zip: 690814 country: korea visory RYU CHAN HONG

jeju localhost rych67

Response to E-Mail Comment #1 to Amended NOI

This e-mail is not relevant to the EIS and does not require a response.

E-Mail Comment #2 on Amended NOI

From: Beatrice Brailsford [bbrailsford@snakeriveralliance.org]
Sent: Monday, June 11, 2012 5:56 PM
To: ECF Recapitalization
Subject: Snake River Alliance revised recapitalization scoping comments
Attachments: nuclear navy revised recapitalization comments.pdf; ATT1707762.txt

Dear Ms. O'Hara,

Could you please acknowledge receipt of these comments? (I'm not quite sure what the "u" in "unnpp" stands for.)



June 11, 2012

Ms. Samantha O'Hara (08U-Naval Reactors)
Naval Sea Systems Command
1240 Isaac Hull Avenue, SE
Stop 8036
Washington Navy Yard, DC 20376-8036

Via email: ecfrecapitalization@unnpp.gov

Snake River Alliance Scoping Comments on the Environmental Impact Statement for the recapitalization of the infrastructure supporting spent nuclear fuel at the Idaho National Laboratory

Dear Ms. O'Hara:

On behalf of the members of the Snake River Alliance, I submit the following comments and questions regarding the scope of the EIS on nuclear navy spent fuel infrastructure recapitalization.

I have attached the Alliance's September 3, 2010, comments on the original recapitalization proposal. Many of those comments remain applicable to the current proposal and should be responded to in the draft environmental impact statement.

- 1** The Amended Notice of Intent states that "funding uncertainties have made the timing of the Examination Recapitalization Project speculative in nature." When did this uncertainty first become apparent? It appears the decision to limit the scope of the recapitalization project was effectively made before the environmental assessment for the Replacement Capability for Disposal of Remote-Handled Low-Level Radioactive Waste Generated at the Department of Energy's Idaho Site. Is this correct? Are there any projections of when funding might be available?
- 2**
- 3**

As you know, the spent fuel *examination* capability has long been the justification for bringing nuclear navy spent fuel to the Idaho National Laboratory.

350 9th Avenue North, Suite 810
Boise, ID 83702
208/344-9161

Box 425
Pocatello, ID 83204
208/233-7212

- 4 Now that a new examination facility has been delayed or will not be built at all, the nuclear navy must provide a thorough evaluation of the state of the current facility.
- 5 The draft EIS should describe in detail any changes in the number of spent fuel examinations that will take place because of aging of the Naval Reactors Facility (NRF) or the extended use of the fuel itself. Any such changes will undoubtedly change the size of the NRF waste stream. How will this affect the replacement remote-handled low level waste facility at the Idaho National Laboratory?
- 6
- 7 What percentage of the recapitalization project will be funded by the Department of Defense?

Respectfully submitted,



Beatrice Brailsford
Nuclear program director

Response to E-Mail Comment #2 to Amended NOI

Responses to the Snake River Alliance's comments are provided below. Comments originally provided on September 3, 2010, although not attached here, are addressed in the response to E-Mail Comment #7.

Item #1:

The NNPP sought a funding level of approximately \$60M in fiscal year (FY) 2012 to support the recapitalization of naval spent nuclear fuel capabilities. Budget reductions in FY 2012 resulted in a 50 percent reduction to approximately \$30M. This reduction left a limited amount of resources used to progress the recapitalization of naval spent nuclear fuel handling at a slower pace than originally planned. Furthermore, the Budget Control Act of 2011 (Pub. L. 112-25, August 2, 2011) and the November 21, 2011 announcement by the Joint Select Committee on Deficit Reduction further indicated at least a decade of significant across-the-board constraints on the federal budget. These indicators suggested that sufficient resources would not be available to concurrently progress the recapitalization of examination capabilities.

Item #2:

The decision to limit the scope of the EIS was made in December 2011. However, the decision on the EIS scope has no impact on DOE 2011a for the reasons described in the response to Item 6, below.

Item #3:

The NNPP believes that the funding picture for the recapitalization of naval spent nuclear fuel handling capabilities will be clarified in FY 2015. Until then, the NNPP cannot reasonably project when resources might become available for examination recapitalization conceptual design work.

Item #4:

The environmental impacts of operating the current examination infrastructure without overhaul or recapitalization are reflected in the Chapter 3 discussion of the affected environment. In the absence of a recapitalization or overhaul project, the NNPP would maintain the examinations infrastructure to ensure continued effective protection of workers, the public, and the environment.

Item #5:

The NNPP expects to continue to fully utilize the examination capacity available at ECF for the foreseeable future. The current in-service conditions experienced by naval nuclear fuel, including its extended use, are more demanding than in the past. The designs of naval nuclear fuel systems continue to evolve and some desirable performance characteristics (e.g., a life-of-the-ship fuel design for aircraft carriers) have not yet been achieved. The continuing comprehensive program of examining all naval spent nuclear fuel provides information that validates naval nuclear fuel designs and performance models. This validation is essential to support resolution of emergent fleet problems, further refinement of the models, and development of the next generation of naval nuclear fuel designs. The aging of the examinations infrastructure may lead to temporary reductions or interruptions in planned examination activity to allow repair or replacement of failed equipment or systems.

Item #6:

The size of the NRF waste stream to the replacement remote-handled low level waste facility at the INL is unaffected by the pace of examination work. Approximately 98 percent of the waste disposed at that facility is related to the processing of spent fuel for dry storage and disposal.

Item #7:

The recapitalization of naval spent nuclear fuel handling capabilities is planned to be funded through the DOE.

APPENDIX B

CONSULTATION AND COORDINATION LETTERS

This appendix provides documentation of consultation with federal, tribal, and state agencies on the Environmental Impact Statement (EIS) for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling at the Idaho National Laboratory (INL). Letters documenting consultation between the Naval Reactors (NR) Idaho Branch Office (IBO) and the United States Fish and Wildlife Service (USFWS) on threatened and endangered species are provided in Section B.1. Letters documenting meetings and consultation between NR, IBO, and the State Historic Preservation Office (SHPO) are provided in Section B.2. Letters documenting meetings and consultation between NR, IBO, and the Shoshone-Bannock Tribes are provided in Section B.3. Letters documenting meetings and consultation between IBO, the Idaho Department of Environmental Quality (IDEQ), National Park Service (NPS), and Environmental Protection Agency (EPA) are provided in Section B.4.

Table B-1: Consultation and Coordination Letters

Agency	Subject	Date	Page
B.1 Threatened and Endangered Species Consultation			
IBO	Request for Informal Consultation on the Determination of Impact on Federally Listed Species and Their Designated Critical Habitat	12/12/2012	B-5
USFWS	Re: Determination of Impact on Federally Listed Species and Their Designated Critical Habitat	1/22/2013	B-11
B.2 National Historic Preservation Act Consultation			
NR	Draft Cultural Resources Report	6/22/2011	B-17
SHPO	Re: Draft Cultural Resources Report	7/15/2011	B-21
IBO	Cultural Resource Investigations	4/30/2013	B-23
SHPO	Re: Cultural Resource Investigations	6/4/2013	B-29
IBO	Meeting with the SHPO on the Mitigation Action Plan (MAP)	6/8/2016	B-31
B.3 Tribal Government Consultation			
NR	Draft Cultural Resources Report (Fort Hall Business Council)	6/22/2011	B-35
IBO	Cultural Resource Investigations (Fort Hall Business Council)	4/30/2013	B-39
IBO	Cultural Resource Investigations (Heritage Tribal Office)	4/30/2013	B-45
IBO	Cultural Resource Investigations: Meeting Minutes	6/9/2014	B-51
B.4 Other Coordination			
IBO	Non-Radiological Air Quality Modeling	4/4/2013	B-73
IDEQ	DEQ Review of Non-Radiological Air Quality Modeling	8/2/2013	B-79

Table B-1: Consultation and Coordination Letters (cont.)

Agency	Subject	Date	Page
IBO	Documentation of Changes to Non-Radiological Air Quality Modeling	3/11/2014	B-89
IBO	Revised Construction Emissions and Air Quality Modeling Protocols	2/18/2016	B-93
IDEQ	Review of Draft EIS	4/27/2016	B-97
IBO	Non-Radiological Air Quality Modeling	4/4/2013	B-99
NPS	Re: Non-Radiological Air Quality Modeling	7/11/2013	B-105
IBO	Revised Construction Emissions and Air Quality Modeling Protocols	2/18/2016	B-109
IBO	Revised Construction Air Quality Analyses	3/25/2016	B-113
NPS	National Park Service Comments on the Revised Construction Air Quality Analysis	4/20/2016	B-117
IBO	Meeting with the EPA	6/17/2016	B-119

B.1 Threatened and Endangered Species Consultation



Department of Energy

Naval Reactors
Idaho Branch Office
Post Office Box 2469
Idaho Falls, Idaho 83403-2469

NR:IBO-12/215
December 12, 2012

David Kampwerth, Field Supervisor
U.S. Fish and Wildlife Service
Eastern Idaho Field Office
4425 Burley Dr., Suite A
Chubbuck, Idaho 83202

SUBJECT: REQUEST FOR INFORMAL CONSULTATION ON THE DETERMINATION
OF IMPACT ON FEDERALLY LISTED SPECIES AND THEIR
DESIGNATED CRITICAL HABITAT FOR THE *DRAFT ENVIRONMENTAL
IMPACT STATEMENT FOR THE RECAPITALIZATION OF
INFRASTRUCTURE SUPPORTING NAVAL SPENT NUCLEAR FUEL
HANDLING AT THE IDAHO NATIONAL LABORATORY (INL)*

Dear Mr. Kampwerth:

The Department of Energy (DOE) office of Naval Reactors is seeking informal consultation with your office in compliance with Section 7 of the Endangered Species Act (ESA). The Naval Nuclear Propulsion Program (NNPP) is preparing an Environmental Impact Statement (EIS) for recapitalizing the spent fuel handling capabilities of the Expendable Core Facility (ECF) at the Idaho National Laboratory (INL). The EIS will contain an analysis of impacts on listed and proposed candidate, threatened, and endangered plant and animal species.

Introduction and Project Description

The NNPP proposes to recapitalize the infrastructure for preparing, examining, and packaging naval spent nuclear fuel and other irradiated materials, to ensure these capabilities are maintained for the vital NNPP mission of supporting the naval nuclear-powered fleet. The recapitalization is expected to be carried out as two projects. The first project would be the Spent Fuel Handling Recapitalization Project; the second project would be the Examination Recapitalization Project. The Spent Fuel Handling Recapitalization Project would ensure that interfaces and exchanges between handling and examination are factored into detailed designs, to ensure that both projects can be carried out in an environmentally responsible and cost effective manner.

David Kampwerth
U.S. Fish and Wildlife Service

NR:IBO-12/215
December 12, 2012

An amended Notice of Intent (NOI) for the project was published in the Federal Register on May 10, 2012. The purpose of the amended NOI was to announce the NNPP's intent to reduce the scope of the EIS to include only the Spent Fuel Handling Recapitalization Project. The Examination Recapitalization Project was retained in the ecological survey report (Enclosure (I)) as a reasonably foreseeable project for use in the EIS cumulative impacts analysis.

Three alternatives for the Spent Fuel Handling Recapitalization Project will be analyzed in the EIS:

1. Maintain ECF without a change to the present course of action or management of the facility. Spent fuel handling capabilities of ECF would continue to use the current ECF infrastructure while performing corrective maintenance and repairs necessary to keep the infrastructure in good working order (i.e., actions sufficient to sustain the proper functioning of structures, systems, and components). (No Action Alternative)
2. Overhaul ECF by implementing major refurbishment projects for the ECF infrastructure and water pools to provide the needed long-term capabilities for transferring, preparing, and packaging naval spent nuclear fuel (Overhaul Alternative).
3. Site a new Spent Fuel Handling Recapitalization Project facility at NRF (New Facility Alternative).

The NNPP has determined that there are no threatened or endangered plant or animal species, and no designated critical habitat for such species in the potential project areas. The NNPP is seeking concurrence with this finding from the U.S. Fish and Wildlife Service (USFWS). Evidence supporting this finding is discussed below and is based on the USFWS species list for Idaho counties (Attachment (I)), potential disturbance areas for project alternatives (Attachment (II)), habitat requirements for listed species, and ecological surveys of the proposed building sites (Enclosure (1)).

Review of Listed Species

To prepare for consultation with your office, a list of threatened, endangered, proposed, and candidate plant and animal species for Idaho counties was obtained from the USFWS, Idaho Fish

David Kampwerth
U.S. Fish and Wildlife Service

NR:IBO-12/215
December 12, 2012

and Wildlife Office (IFWO) web page on September 10, 2012, for proposed Federal Actions (Attachment (I)). The list was evaluated for plant and animal species that are known to occur in Butte, Bingham, Bonneville, Custer, and Jefferson counties. The INL is located in Butte County. The additional four counties surrounding INL were also assessed to narrow the statewide county list to those that might have similar habitat to INL.

One threatened plant species, Ute ladies' tresses (*Spiranthes diluvialis*) was identified as occurring in three of the counties. This orchid grows only in moist soils associated with wetlands or floodplains of perennial streams in intermountain valleys, or in wet open meadows. This species requires soils that are moist to the surface throughout the growing season (USDA 2011). There is no habitat within the INL boundaries that would support this species. One candidate tree species, whitebark pine (*Pinus albicaulis*), was identified as occurring in Butte, Bonneville and Custer counties. However, this tree occurs in subalpine forests at elevations between 7000 and 12,000 feet. There is no habitat on the INL that would support this species. No threatened, endangered, proposed, or candidate plant species are known to occur, or are expected to occur on INL.

Two threatened and three candidate animal species were identified in the counties that were evaluated. The Canada lynx (*Lynx canadensis*) and grizzly bear (*Ursus arctos horribilis*) are listed as threatened and were identified as occurring in one or more of the counties evaluated. The Canada lynx is typically found in forested habitats, while the grizzly bear is typically found in a variety of habitats within the Greater Yellowstone area. There is no suitable habitat on INL for these two species, and they are not expected to occur on the site. No designated critical habitat for threatened or endangered species, as defined in the ESA, exists on INL.

The greater sage-grouse (*Centrocercus urophasianus*), yellow billed cuckoo (*Coccyzus americanus*), and wolverine (*Gulo gulo*) are listed as candidate species by the USFWS; they were identified as occurring in four to five of the surrounding counties (depending on the species). The greater sage-grouse is known to occur on INL and is discussed below. The yellow-billed cuckoo typically occurs in riparian woodlands and shrubs. The wolverine is typically found in northern boreal forests and subarctic and alpine tundra. There is no suitable habitat on INL for the yellow-billed cuckoo or wolverine, and they are not expected to occur on the site.

David Kampwerth
U.S. Fish and Wildlife Service

NR:IBO-12/215
December 12, 2012

The USFWS recently announced that pygmy rabbits (*Brachylagus idahoensis*) do not warrant protection under the ESA. However, because of conservation concerns for this sagebrush obligate species, impacts will be addressed in the EIS. Field surveys (see below) were conducted for pygmy rabbits at the potential project locations at NRF to support the impact analysis.

Ecological Resource Surveys

To describe current ecological resource conditions and support evaluation of impacts of ECF Recapitalization Project alternatives, Gonzales-Stoller Surveillance, LLC (GSS) was contracted to perform wildlife and vegetation surveys. Surveys of the potential disturbance areas for the alternatives were conducted in 2011 and a report was issued. Potential disturbance areas were further defined and additional surveys were conducted in 2012 to ensure coverage. The initial report was revised with the 2012 survey results and issued as revision 1. This report is provided in enclosure (1). Field surveys were conducted at NRF alternative locations in 2011 during March (winter surveys for pygmy rabbit), April - May (listening surveys for greater sage-grouse), and June (wildlife and rare plants). Vegetation and wildlife (including greater sage-grouse and pygmy rabbit) surveys were conducted again at NRF in June 2012. Wildlife and rare plant surveys were also conducted at the ATR Complex in June 2011 and included in the report. However, this site is no longer under consideration as a potential building location in the current EIS and is only used for potential cumulative impacts in the EIS.

Existing surveys and reports describing vegetation communities, greater sage-grouse lek locations, breeding bird populations, and pygmy rabbit populations around NRF were reviewed and used in addition to the field surveys to describe ecological conditions and habitat at the potential building locations. Attachment II figures 1, 2, and 3 show the area at NRF that was surveyed compared to potential disturbance area for the Overhaul Alternative, the New Facility Alternative at NRF Location 3/4 and the New Facility Alternative at NRF location 6, respectively. The field surveys of potential construction areas found no evidence of rare or sensitive plant species at NRF. Additionally, no evidence was found of greater sage-grouse leks or nesting. No greater sage-grouse sign was found in the potential disturbance area for the Overhaul Alternative (attachment II, figure 1). Evidence of transitory use by greater sage-grouse was found at the

David Kampwerth
U.S. Fish and Wildlife Service

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construction support areas (e.g., laydown area, batch plant, stockpile) for NRF Location 3/4 (attachment II, figure 2) and NRF location 6 (attachment II, figure 3). A single pygmy rabbit burrow was found in the construction support area for NRF Location 3/4 (attachment II, figure 2) and a number of locations in the construction support area for NRF location 6 (attachment II, figure 3). Based on this information, the NNPP determined that the project alternatives are not likely to adversely impact the greater sage-grouse on the INL. There is potential for pygmy rabbit burrows to be impacted should NRF location 6 be selected for the New Facility Alternative. This would be a local impact and not likely to adversely affect pygmy rabbits on the INL. NRF location 3/4 is the preferred location.

Candidate Conservation Agreement

The NNPP is participating in establishing a Candidate Conservation Agreement (CCA) between the DOE Idaho Operations Office and the USFWS for the greater sage-grouse on the INL. When the CCA is finalized, the NNPP would follow the conservation measures that are applicable to the proposed project. The potential building locations are next to the existing NRF facility and are in areas that would be excluded from most conservation measures in the proposed CCA.

Request for Concurrence

In accordance with section 7 of the ESA, please provide feedback on the following NNPP determinations:

- A Biological Assessment or further section 7 consultation pursuant to the Endangered Species Act of 1973 is not required since there are no threatened or endangered species or critical habitat present in the project area
- The proposed alternatives are not likely to adversely affect the greater sage-grouse
- The proposed alternatives are not likely to adversely affect the pygmy rabbit

David Kampwerth
U.S. Fish and Wildlife Service

NR:IBO-12/215
December 12, 2012

Please do not hesitate to contact me at 208-533-5969, if you have any questions or comments or need additional information. Thank you for your assistance.

Sincerely,

Christopher M. Henvit

C. M. Henvit, Acting Manager
Naval Reactors Idaho Branch Office

Attachments: (I) Endangered, Threatened, Proposed, and Candidate Species With Associated Proposed and Critical Habitats in Idaho. U.S. Fish and Wildlife Service - Idaho Fish and Wildlife Office.
www.fws.gov/idaho/species/IdahoSpeciesList.pdf.
Dated 09/06/2012. Downloaded 09/10/2012.

(II) Potential Disturbance Areas for Project Alternatives

Enclosure: (1) GSS-NRF-148-r.1. Ecological Surveys to Support the ECF Recapitalization Environmental Impact Statement. Gonzales-Stoller Surveillance, LLC. Idaho Falls, Idaho. September 2012



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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<http://IdahoES.fws.gov>

C. M. Henvit
Acting Manager
Naval Reactors, Idaho Branch Office
Department of Energy
P.O. Box 2469
Idaho Falls, Idaho 83403-2469

JAN 22 2013

Subject: Determination of Impact on Federally Listed Species and Their Designated Critical Habitat for the Draft Environmental Impact Statement for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling at the Idaho National Laboratory, Butte County, Idaho (NR – IBO-12/215)
TAILS # 14420-2013-TA-0084

Dear Mr. Henvit:

This letter responds to the Department of Energy (DOE) office of Naval Reactors' request for informal consultation in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.; [Act]). In a letter dated December 12, 2012, received by the Fish and Wildlife Service (Service) on December 14, 2012, DOE requested informal consultation on the determination of impact to federally listed species from the recapitalization of infrastructure supporting spent fuel handling at the Idaho National Laboratory (INL), Butte County, Idaho. Ecological surveys of the project area accompanied your letter.

The DOE is analyzing the impacts of (1) maintaining spent fuel handling capabilities at the Expended Core Facility (ECF) at the Naval Reactors Facility (NRF), (2) overhauling spent fuel handling capabilities at the ECF, or (3) constructing new spent fuel handling facilities at the NRF. All alternatives would involve disturbance, including construction support areas, occurring at or immediately adjacent to existing facilities.

The DOE determined that there are no federally listed plant or animal species, and no designated critical habitat, in the proposed project area. The DOE requested concurrence with their determination of no effect to Ute ladies' tresses (*Spiranthes diluvialis*), Canada lynx (*Lynx canadensis*), and grizzly bear (*Ursus arctos horribilis*). The regulations implementing section 7 of the Act do not require the Service to review or concur with no effect determinations. However, the Service does appreciate being informed of the determination for these species. Based on the proposed project location, ecological surveys of the area, and habitat requirements for these species, the Service does not disagree with your determination.

The DOE determined that there is no suitable habitat on the INL for the federal candidate species whitebark pine (*Pinus albicaulis*), yellow-billed cuckoo (*Coccyzus americanus*), or North American wolverine (*Gulo gulo*). The Act does not require consultation on candidate species. However, the Service does appreciate being informed of the determination for these species.

Greater sage-grouse (*Centrocercus urophasianus*), a federal candidate species, are known to occur on the INL. Ecological surveys conducted in the proposed project area found signs of transitory use by greater sage-grouse. No leks or nesting areas were found within the proposed project area; the nearest known lek occurs 4.5 km to the west. The DOE requested concurrence with their determination that the proposed alternatives are not likely to adversely affect greater sage-grouse. However, the Act does not require consultation on candidate species. The Service acknowledges your determination and appreciates being provided information on sage-grouse habitat and use on the INL. Based on the proposed project location, and the results of ecological surveys conducted in the area, the Service anticipates a minimal loss of sage-grouse habitat resulting from implementation of the proposed alternatives.

The Service appreciates your efforts to establish a Candidate Conservation Agreement (CCA) for the greater sage-grouse on the INL. Currently, only a draft CCA exists. The Service urges you to continue your efforts to develop a final CCA that will benefit sage-grouse on the INL and provide a greater degree of certainty on conservation measures applicable to existing INL facilities.

In 2010, the Service concluded that the pygmy rabbit (*Brachylagus idahoensis*) does not warrant protection under the Act. Your letter states that because of conservation concerns for this sagebrush obligate species, potential impacts to the pygmy rabbit will be addressed in the environmental impact statement for the proposed project. The DOE requested concurrence with their determination that the proposed alternatives are not likely to adversely affect the pygmy rabbit. The regulations implementing section 7 of the Act do not require consultation on species not listed under the Act. The Service acknowledges your determination and appreciates your consideration of this species. Based on the proposed project location, and the results of ecological surveys conducted in the area, the Service anticipates a minimal loss of pygmy rabbit habitat resulting from implementation of the proposed alternatives.

Because the DOE determined that there is no effect to federally listed plant or animal species, or designated critical habitat, consultation is not required at this time. Consultation may become necessary in the future if your proposed action or area of impact is modified, or if a new species is listed or critical habitat is designated that may be affected by the proposed action.

If you have any questions regarding your responsibilities under section 7 of the Act, or require further information, please contact Laura Berglund at (208) 237-6975 extension 114. Thank you for your interest in the conservation of threatened and endangered species.

Sincerely,



David Kampwerth
Field Supervisor

cc: Service, Boise (Pyron)

B.2 National Historic Preservation Act Consultation



Department of Energy
Washington, DC 20585

June 22, 2011

Ms. Susan Pengilly
Deputy State Historic Preservation Officer and Compliance
Coordinator
Idaho State Historical Society
210 Main Street
Boise, ID 83702

SUBJECT: Draft Cultural Resources Report for the Environmental Impact Statement for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling and Examination at the Idaho National Laboratory

Dear Ms. Pengilly:

The Department of Energy (DOE) Naval Nuclear Propulsion Program (NNPP) is seeking documented consultation with your office regarding the Draft Cultural Resources Report for the Expended Core Facility (ECF) Recapitalization Environmental Impact Statement (EIS). The proposed project is the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling and Examination at the Idaho National Laboratory (INL).

The Naval Nuclear Propulsion Program (NNPP) proposes to recapitalize the infrastructure for transferring, preparing, examining, and packaging naval spent nuclear fuel and other irradiated materials, to ensure these capabilities are maintained for the vital NNPP mission of supporting the naval nuclear-powered fleet. The recapitalization is expected to be carried out as two projects. The first project would be the Spent Fuel Handling Recapitalization Project; the second project would be the Examination Recapitalization Project. The Spent Fuel Handling Recapitalization Project would ensure that interfaces and exchanges between handling and examination are factored into detailed designs, to ensure that both projects can be carried out in an environmentally responsible and cost effective manner.

The EIS will consider the environmental effects related to siting and construction of new facilities for both of the Recapitalization Projects. The NNPP will evaluate two siting combinations in detail, along with a No-Action Alternative.

- Alternative 1 - Locate the Spent Fuel Handling Recapitalization Project and the Examination Recapitalization Project at the Naval Reactors Facility (NRF) at the INL.
- Alternative 2 - Locate the Spent Fuel Handling Recapitalization Project at the NRF and the Examination Recapitalization Project at the Advanced Test Reactor Complex at the INL.
- No-Action Alternative - Overhaul the ECF. Overhauling includes continuing to repair, maintain, refurbish, and upgrade the ECF as necessary to provide the needed long-term capabilities for transferring, examining, preparing, and packaging naval spent nuclear fuel.

The locations for facility placement will be addressed in the EIS. NNPP proposes to address impacts to environmental resources, to include impacts on cultural resources, such as historic, archaeological, and Native American culturally important sites.

The purpose of this letter is to initiate communication with your office. The Draft Cultural Resources Report (attached) provides the identified archaeological resources and the approaches recommended to minimize impacts to them. The NNPP is seeking feedback on any additional archaeological resources that may be located in the project area.

As identified in the report, additional targeted archaeological reconnaissance is planned for some identified resources. The NNPP would like to complete this reconnaissance in time to incorporate the results into the Draft EIS. Therefore, the reconnaissance is planned for this summer, approximately one month after the transmittal of this letter.

We intend to use the EIS process to comply with Section 106 of the National Historic Preservation Act of 1966. After assessing

information you provide, we will determine any additional actions that are necessary to comply with the Section 106 consultation process. If you have any questions or comments, or need additional information, please contact Alan Denko at 202-781-6214.

Sincerely,



Alan Denko
Naval Reactors

Attachment (I) INL/EXT-10-20650 dated June 2011. Cultural Resource Investigations for Potential Naval Reactors Spent Fuel Handling and Examination Facilities at the Idaho National Laboratory - Draft.

CC:

Carolyn Smith, Tribal DOE Program-Heritage Tribal Office
Brenda Face, DEA Cultural Resource Management



July 15, 2011

Alan Denko
Naval Reactors
Washington DC 20585

C.L. "Butch" Otter
Governor of Idaho

Janet Gallimore
Executive Director

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Fax: (208) 334-4059

State Historic Preservation Office and Historic Sites
Archeological Survey of Idaho
210 Main Street
Boise, Idaho 83702-7264
Office: (208) 334-3861
Fax: (208) 334-2775

Statewide Sites:
• Franklin Historic Site
• Pierce Courthouse
• Rock Creek Station and
• Stricker Homestead

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Idaho State Archives
2205 Old Penitentiary Road
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North Idaho Office
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Moscow, Idaho 83843
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RE: Draft Cultural Resources Report for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling and Examination at the Idaho National Laboratory

Dear Mr. Denko:

Thank you for sending the draft report documenting preliminary archaeological survey of the alternative locations for the proposed Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling and Examination at the Idaho National Laboratory. We support the recommendations for additional investigations as presented in the report.

We look forward to receiving the other archaeological reports associated with this project. If you have any questions, please feel free to contact me at 208-334-3847, ext. 107.

Sincerely,

Susan Pengilly
Deputy SHPO and
Compliance Coordinator

Cc: Julie Williams, Battelle



DEPARTMENT OF ENERGY

NAVAL REACTORS
IDAHO BRANCH OFFICE
POST OFFICE BOX 2469
IDAHO FALLS, IDAHO 83403-2469

NR:IBO-13/067
April 30, 2013

Ms. Susan Pengilly
Deputy State Historic Preservation Officer and Compliance Coordinator
Idaho State Historical Society
210 Main Street
Boise, ID 83702

**SUBJECT: CULTURAL RESOURCE INVESTIGATIONS FOR RECAPITALIZATION
OF INFRASTRUCTURE SUPPORTING NAVAL SPENT NUCLEAR FUEL
HANDLING AT THE NAVAL REACTORS FACILITY ON THE IDAHO
NATIONAL LABORATORY**

Dear Ms. Pengilly,

The Department of Energy (DOE) Naval Nuclear Propulsion Program (NNPP) is seeking documented consultation with your office regarding the cultural resource investigations for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling Environmental Impact Statement (EIS) in accordance with Section 106 of the Historic Preservation Act.

Introduction and Project Description

The NNPP proposes to recapitalize the infrastructure for transferring, preparing, examining, and packaging naval spent nuclear fuel and other irradiated materials, to ensure these capabilities are maintained for the vital NNPP mission of supporting the naval nuclear-powered fleet. The recapitalization will be carried out as two projects.

The NNPP was initially pursuing the two recapitalization projects in the same time frame; however, since the initiation of the NEPA process, the project schedules have changed such that planning for spent fuel handling recapitalization has progressed further than planning for examination recapitalization. Preparing one EIS that includes both recapitalization projects would require decisions about examination recapitalization too early in the design process, prior to having sufficient information to fully analyze the environmental impacts. Additionally, funding uncertainties have made the timing of examination recapitalization speculative in nature. To ensure an EIS is completed in support of the Navy's need for spent fuel handling recapitalization, it was necessary to reduce the scope of the EIS to cover just that proposed action.

Susan Pengilly,
Idaho State Historical Society

NR:IBO-13/067

April 30, 2013

Page 2

The EIS will consider the environmental effects related to the proposed action. The alternatives being evaluated have been revised to remove aspects related to examination recapitalization and to address public comments received during initial EIS scoping. The NNPP will evaluate a No Action Alternative, an Overhaul Alternative, and a New Facility Alternative:

- No-Action Alternative – Maintain the spent fuel handling capabilities of the Expended Core Facility (ECF) by continuing to use the current ECF infrastructure while performing corrective maintenance and repairs necessary to keep the infrastructure in good working order (i.e., actions sufficient to sustain the proper functioning of structures, systems, and components).
- Overhaul Alternative – Overhaul the spent fuel handling capabilities of the ECF at Naval Reactors Facility (NRF) by implementing major infrastructure and water pool refurbishment projects while performing corrective maintenance and repair actions as necessary.
- New Facility Alternative – Construct and operate a new facility for spent fuel handling capabilities at one of two potential locations at NRF on the Idaho National Laboratory (INL).

The locations for facility placement will be addressed in the EIS.

Cultural Resource Surveys and Investigations

The NNPP proposes to address impacts to environmental resources including impacts on cultural resources, such as historic, archaeological, and Native American culturally important sites. To support the impact evaluation, the NNPP worked with the INL Contractor, Battelle Energy Alliance (BEA) to conduct cultural resource surveys in the potential areas of disturbance. Based on these surveys, additional investigations were completed as applicable to make determinations about eligibility for listing on the National Register of Historic Places. These surveys and additional investigations were conducted in two phases based on changing project information. Over the course of the investigations, tribal representatives from the Heritage Tribal Office (HeTO) toured all of the archaeological sites scheduled for data recovery and provided valuable hands-on assistance during mapping and test excavations.

In June 2011, the NNPP transmitted the first survey report and notified you of the plan to do additional investigations. This letter transmits a second report including the results of the second phase of surveys and all the additional investigations at the potentially significant prehistoric sites located in areas potentially impacted by the proposed action. As identified in the report, the purpose of the investigations was to identify cultural resources and assess the eligibility of the archaeological sites for nomination to the National Register by determining if additional buried cultural materials were present and of any value to future research in the region.

Susan Pengilly,
Idaho State Historical Society

NR:IBO-13/067
April 30, 2013
Page 3

The attached report is marked Official Use Only to ensure that the NNPP does not release or allow the release of any information pertaining to the exact location of any archaeological sites to the public. The attached report shall be maintained in a manner which prevents release to unauthorized individuals.

The survey area that encompasses the areas of potential effects associated with the proposed action contains 51 archaeological resources - 21 prehistoric isolate locations, two historic isolate locations, 22 prehistoric sites, two historic sites associated with Euro American settlement, three historic resources associated with World War II and the post-war period, and one modern rock cairn.

The isolate locations are unlikely to yield additional information and have been evaluated as ineligible for nomination to the National Register (list is provided in Section 7.4 of the attached report). Seven sparse scatters of prehistoric artifacts that appear to be restricted to a shallow surface zone are also evaluated as ineligible for nomination to the National Register (see Section 7.4 of the attached report).

Seven prehistoric sites, the two historic sites representing Euro American settlement, the two historic resources and a historic road associated with the Arco Naval Proving Ground during World War II and the post-war period, and the modern cairn exhibit some potential for yielding additional information and were evaluated as potentially eligible for nomination, pending additional data recovery and research (see Section 7.4 of the attached report). These sites would be outside of the area of potential effect for the proposed action and would be avoided during construction of the proposed project.

Test excavations reported in Section 7.2 of the attached report demonstrate that eight of the prehistoric archaeological sites are unlikely to yield any additional information beyond that which has been collected during the intensive data recovery reported and the surveys that preceded this work. Further excavation is not merited and would not contribute to the study of regional prehistory or INL-specific research domains. Based on the testing results, all eight of the sites are evaluated as ineligible for nomination to the National Register.

INL lands are included within the aboriginal homeland of the Shoshone-Bannock Tribes. Although no Native American cultural resources have been specifically identified within the areas potentially impacted by the proposed action, representatives from the Shoshone-Bannock Tribes HeTO have indicated that prehistoric archaeological sites, native plants and animals, water, and other natural landscape features across the INL area continue to fill important roles in tribal heritage and ongoing cultural traditions. The EIS will address these tribal concerns.

Conclusions from Cultural Resource Surveys and Investigations

The area of potential effect for cultural resources associated with the Overhaul Alternative includes approximately 47 acres to the north and northeast of the existing NRF perimeter. Proposed project developments are limited to a new security boundary

Susan Pengilly,
Idaho State Historical Society

NR:IBO-13/067
April 30, 2013
Page 4

system in this area. No archaeological resources are located in the Overhaul Alternative area of potential effect. The archaeological investigations support a finding of no effects to historic properties and no adverse impacts to known resources of cultural significance for the Overhaul Alternative.

All of the archaeological resources identified within the New Facility Alternative Location 3/4 area of potential effect are evaluated as ineligible for nomination to the National Register due to limited research potential and lack of integrity. These evaluations are supported by test excavations completed at six of the identified archaeological sites. The seventh archaeological site was not visible on the current landscape during recent surveys and appears to have been originally restricted to a shallow surface zone that has been subject to widespread changes as a result of erosion, freeze-thaw action, bioturbation, and modern activities. The short segment of West Monument Road that passes through the temporary disturbance area for the New Facility Alternative Location 3/4 is highly modified for current activities at NRF and is evaluated as ineligible for nomination to the National Register. Unmodified segments of the road are well preserved to the northeast of the temporary disturbance area of the proposed action. The remaining resources are isolate locations that have been collected for permanent curation and possible future study. The archaeological investigations support a finding of no adverse effects to historic properties and no adverse impacts to any known resources of cultural significance for the New Facility Alternative Location 3/4.

All of the archaeological resources identified within the New Facility Alternative Location 6 area of potential effect are evaluated as ineligible for nomination to the National Register due to limited research potential and lack of integrity. These evaluations are supported by test excavations completed at one of the identified archaeological sites. The remaining resources are isolate locations that have been collected for permanent curation and possible future study. The archaeological investigations support a finding of no adverse effects to historic properties and no adverse impacts to known resources of cultural significance for the New Facility Alternative Location 6.

Although direct impacts are unlikely, there is potential for undesirable indirect effects to cultural resources that are located just outside the areas of potential effect. Since project-related activity levels are projected to increase significantly during construction and the overall developed footprint of NRF would expand permanently, any archaeological resources or natural resources of potential concern to the Shoshone-Bannock Tribes or others located near the newly developed perimeter could be affected indirectly due to the increased activity in these previously undeveloped areas. In particular, artifacts may be subject to unauthorized collection or affected by off-road vehicle use and other small ground disturbing activities that commonly occur around developed areas.

Request for Concurrence

We request your concurrence with the conclusions from the cultural resource surveys and investigations described above.

Susan Pengilly,
Idaho State Historical Society

NR:IBO-13/067
April 30, 2013
Page 5

Additionally, on the basis of the additional investigations, we request concurrence that the eight prehistoric archeological sites discussed in Section 7.2 of the attached report are unlikely to yield any additional information beyond that which has been collected during intensive data recovery documented in the attached report and the surveys that proceeded. Further excavation is not merited and would not contribute to the study of regional prehistory or INL-specific research domains. On the basis of the additional investigations, all eight of the sites are evaluated as ineligible for nomination to the National Register.

Your response is requested by June 3, 2013. If you have any questions or comments or need additional information, please do not hesitate to contact me at 208-533-5969.

Sincerely,



C. M. Henvit
Naval Reactors Idaho Branch Office

Enclosure (I) INL/LTD-12-27685 dated April 2013. Cultural Resource Investigations for Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling at the Naval Reactors Facility on the Idaho National Laboratory.

Copy to:

The Honorable Nathan Small, Chairman, Fort Hall Business Council (w/o enclosure)
Ms. Carolyn Smith, Heritage Tribal Office (w/o enclosure)
Ms. Brenda Pace, BEA Cultural Resource Management (w/o enclosure)
W. Preacher, Tribal DOE Director (w/o enclosure)
R. L. Pence, DOE-ID (w/o enclosure)



Idaho State Historical S O C I E T Y

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Governor of Idaho

Janet Galimore
Executive Director

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~~Statewide Sites:
Franklin Historic Site
Pierce Courthouse
Rock Creek Station and
Stricker Homestead~~

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June 4, 2013

Mr. C. M. Henvit
Department of Energy
Naval Reactors Idaho Branch Office
Post Office Box 2469
Idaho Falls, ID 83403-2496

RE: Cultural Resource Investigations for Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling at the Naval Reactors Facility on the Idaho National Laboratory.

Dear Mr. Henvit,

Thank you for your letter, cultural resources report and additional materials regarding the proposed undertaking's compliance with Section 106 of the National Historic Preservation Act (36 CFR 800). We have reviewed the report prepared by the Idaho National Laboratory Cultural Resource Management Office. They should be commended for preparing a well written, organized, and clear report.

We concur with the recommendation of not eligible to the National Register of Historic Places (National Register) for the following sites and isolates:

INL-09-04-01, INL-12-04-08, INL-95-52-07, 10BT1038, 10BT942, 10BT943, 10BT944, 10BT945, 10BT946, 10BT947, 10BT948, 10BT949, 10BT964, INL-11-01-02, INL-11-01-03, INL-12-04-07, INL-12-04-12, INL-91-12-01, INL-91-12-02, INL-91-12-03, INL-95-52-06, INL-91-12-04, 10BT1379, 10BT935, 10BT936, 10BT938, 10BT939, 10BT965, INL-11-01-04, INL-12-04-01, INL-12-04-02, INL-12-04-03, INL-12-04-04, INL-12-04-05, INL-12-04-09, INL-91-12-05

We concur that the National Register eligibilities of the following sites are undetermined and agree that the prehistoric archaeological sites should be tested and that research should be conducted on the historic sites and modern cairn to determine eligibility:

10BT933, 10BT934, 10BT937, 10BT941, INL-11-01-01, INL-95-52-09, INL-95-52-10, 10BT1037, 10BT951, INL-12-04-06

We do not concur with the recommendation that the following sites are not eligible for the National Register. We recommend that these sites be tested to determine their eligibilities:

10BT940, 10BT950, INL-12-04-10, INL-12-04-11, INL-95-52-08

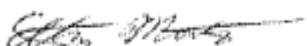
We concur with the recommendation that the No Action Alternative will have "No Adverse Effect" on *Historic Properties* if no new developments are proposed and no major external structural changes or demolition of existing building or structures are planned.

We concur with the recommendation of "No Adverse Effect" to *Historic Properties* for the Overhaul Alternative or the New Facility Location Alternative (3/4 or 6) if the "Recommendations for Additional Protective Measures" identified in Section 8.3 of the cultural resource report are adopted (36 CFR 800.5.b).

We suggest that funding be provided to analyze the artifacts and cultural material collected during the recordation and evaluation of the sites identified and evaluated during this study. This analysis would provide valuable information on the cultural context of the area and potentially aid in the development of an expedited process for evaluating the National Register eligibilities of sites and potential project effects for future undertakings.

We appreciate your consulting with our office. We would appreciate an additional bound copy of the cultural resources report for our library. Please double check the pagination (resets on page 41) and insure page 97 is included. If you have any questions feel free to contact me at 208-334-3847 x107 or ethan.morton@ishs.idaho.gov.

Sincerely,



Ethan Morton
Compliance Archaeologist



DEPARTMENT OF ENERGY
NAVAL REACTORS LABORATORY FIELD OFFICE
POST OFFICE BOX 2469
IDAHO FALLS, IDAHO 83403-2469

NRLFO:IBO-16/081
June 8, 2016

TO: FILE

SUBJECT: MEETING WITH THE STATE HISTORIC PRESERVATION OFFICE
ON THE MITIGATION ACTION PLAN FOR THE FINAL
ENVIRONMENTAL IMPACT STATEMENT FOR RECAPITALIZATION
OF INFRASTRUCTURE SUPPORTING NAVAL SPENT NUCLEAR
FUEL HANDLING

ATTENDEES:

IBO C. Henvit	BMPC C. Pierce	SHPO E. Morton, Compliance Archaeologist	INL B. Pace, Archaeologist
------------------	-------------------	---	----------------------------------

On May 19, 2016, Mr. Chris Henvit from the Naval Reactors Laboratory Field Office/Idaho Branch Office (NRLFO/IBO), Ms. Christina Pierce from Bechtel Marine Propulsion Corporation (BMPC), and Ms. Brenda Pace, Idaho National Laboratory (INL) Archaeologist participated in a teleconference with Mr. Ethan Morton, Compliance Archaeologist for the State Historic Preservation Office (SHPO).

The objectives of the meeting were to:

- To discuss cultural resource mitigations for inclusion in the Final Environmental Impact Statement (EIS), Record of Decision (ROD), and Mitigation Action Plan (MAP).
- To obtain concurrence on the cultural resource commitments that will be included in the MAP.

Mr. Henvit discussed that the MAP was being prepared for inclusion in the Final EIS. He discussed that NRLFO/IBO and BMPC reviewed the commitments outlined in communications and consultations about cultural resources that directly relate to the project to determine if they meet the criteria to be included in the MAP.

Mr. Morton noted that mitigations are not specifically required since the cultural resource investigations identified no adverse effects on cultural resources.

Ms. Pierce noted that there were two types of commitment categories for cultural resources. The first type includes compliance measures that were cited in the Draft EIS that fulfill regulatory requirements that are listed in Appendix C of the EIS, or are

To File

NRLFO:IBO-16/081

June 8, 2016

Page 2

documented as standard operating procedures or best management practices. The second type includes compliance measures that resulted from consultations that are not addressed by regulations, documented standard operating procedures, or best management practices in existing plans.

Ms. Pierce discussed the mitigation commitments resulting from consultations with the SHPO and the Shoshone-Bannock Tribes Fort Hall Business Council that will appear in the Final EIS, ROD, and MAP. The mitigation commitments are:

1. Monitor sensitive archaeological resources located in proximity to the three defined direct areas of potential effects for indirect impacts and implement protective measures if warranted;
2. Conduct cultural resource sensitivity training for personnel to discourage unauthorized artifact collection, off-road vehicle use, and other activities that may impact cultural resources;
3. Implement a Stop Work Procedure to guide the assessment and protection of any unanticipated discoveries of cultural materials during construction and operations; and
4. Provide the Shoshone-Bannock Tribes Heritage Tribal Office the opportunity to monitor key ground-disturbing activities that occur in the vicinity of known test excavations at NRF in support of the recapitalization activities.

Mr. Morton agreed with the commitments above that will be included in the MAP. He also made a recommendation that providing more funding for artifact analysis would be beneficial for long-term management of the area. The artifact analysis provides more refined judgement of what resources could be eligible for listing under the National Historic Preservation Act. Brenda Pace agreed and stated that artifact analysis could make it easier to determine that items are not eligible without having to do further excavations, which makes cultural investigations easier and less costly in the long-term. BMPC will add this recommendation to a lessons learned document and it will be considered for future projects at the Naval Reactors Facility.

Christopher M. Henvit

C. M. Henvit
Naval Reactors Laboratory Field Office
Idaho Branch Office

Copy to:

C. Pierce, BMPC
E. Morton, SHPO
B. Pace, INL

B.3 Tribal Government Consultation



Department of Energy

Washington, DC 20585

June 22, 2011

The Honorable Nathan Small
Chairman Fort Hall Business Council
Shoshone Bannock Tribes
P.O. Box 306
Fort Hall, ID 83203-0306

SUBJECT: Draft Cultural Resources Report for the Environmental Impact Statement for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling and Examination at the Idaho National Laboratory

Dear Chairman Small,

The Department of Energy (DOE) Naval Nuclear Propulsion Program (NNPP) is seeking documented consultation with federally-recognized Indian Tribes ("Tribes") regarding the Draft Cultural Resources Report for the Extended Core Facility (ECF) Recapitalization Environmental Impact Statement (EIS). The proposed project is the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling and Examination at the Idaho National Laboratory (INL).

The Naval Nuclear Propulsion Program (NNPP) proposes to recapitalize the infrastructure for transferring, preparing, examining, and packaging naval spent nuclear fuel and other irradiated materials, to ensure these capabilities are maintained for the vital NNPP mission of supporting the naval nuclear-powered fleet. The recapitalization is expected to be carried out as two projects. The first project would be the Spent Fuel Handling Recapitalization Project; the second project would be the Examination Recapitalization Project. The Spent Fuel Handling Recapitalization Project would ensure that interfaces and exchanges between handling and examination are factored into detailed designs, to ensure that both projects can be carried out in an environmentally responsible and cost effective manner.

The EIS will consider the environmental effects related to siting and construction of new facilities for both of the Recapitalization Projects. The NNPP will evaluate two siting combinations in detail, along with a No-Action Alternative.

- Alternative 1 - Locate the Spent Fuel Handling Recapitalization Project and the Examination Recapitalization Project at the Naval Reactors Facility (NRF) at the INL.
- Alternative 2 - Locate the Spent Fuel Handling Recapitalization Project at the NRF and the Examination Recapitalization Project at the Advanced Test Reactor Complex at the INL.
- No-Action Alternative - Overhaul the ECF. Overhauling includes continuing to repair, maintain, refurbish, and upgrade the ECF as necessary to provide the needed long-term capabilities for transferring, examining, preparing, and packaging naval spent nuclear fuel.

The locations for facility placement will be addressed in the EIS. NNPP proposes to address impacts to environmental resources, to include impacts on cultural resources, such as historic, archaeological, and Native American culturally important sites.

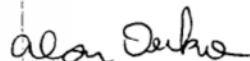
The purpose of this letter is to initiate communication with the Shoshone-Bannock Tribes. The Draft Cultural Resources Report (attached) provides the identified archaeological resources and the approaches recommended to minimize impacts to them. The NNPP is seeking feedback on any additional Native American cultural resources that may be located in the project area.

As identified in the report, additional targeted archaeological reconnaissance is planned for some identified resources. The NNPP would like to complete this reconnaissance in time to incorporate the results into the Draft EIS. Therefore, the reconnaissance is planned for this summer, approximately one month after the transmittal of this letter. The exact dates of these activities will be provided to the Shoshone-Bannock Tribes through the INL Cultural Resource Management Office during

regularly scheduled Cultural Resources Working Group (CRWG) meetings, when project information will be provided to tribal representatives and invitations to participate in the additional cultural resource investigations will be extended.

We intend to use the EIS process to comply with Section 106 of the National Historic Preservation Act of 1966. After assessing information you provide, we will determine any additional actions that are necessary to comply with the Section 106 consultation process. If you have any questions or comments, or need additional information, please contact Alan Denko at 202-781-6214.

Sincerely,



Alan Denko
Naval Reactors

Attachment (I) INL/EXT-10-20650 dated June 2011. Cultural Resource Investigations for Potential Naval Reactors Spent Fuel Handling and Examination Facilities at the Idaho National Laboratory - Draft.

CC:
Ms. Caroline Smith, Shoshone-Bannock Tribe Heritage Tribal Office
Brenda Pace, BEA Cultural Resource Management



DEPARTMENT OF ENERGY

NAVAL REACTORS
IDAHO BRANCH OFFICE
POST OFFICE BOX 2469
IDAHO FALLS, IDAHO 83403-2469

NR:IBO-13/068
April 30, 2013

The Honorable Nathan Small
Chairman Fort Hall Business Council
Shoshone-Bannock Tribes
P.O. Box 306
Fort Hall, ID 83203-0306

**SUBJECT: CULTURAL RESOURCE INVESTIGATIONS FOR THE
RECAPITALIZATION OF INFRASTRUCTURE SUPPORTING NAVAL
SPENT NUCLEAR FUEL HANDLING AT THE NAVAL REACTORS
FACILITY ON THE IDAHO NATIONAL LABORATORY**

Dear Chairman Small,

The Department of Energy (DOE) Naval Nuclear Propulsion Program (NNPP) is seeking documented consultation with the Shoshone-Bannock federally recognized Indian Tribes ("Tribes") regarding the cultural resource investigations for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling Environmental Impact Statement (EIS).

Introduction and Project Description

The NNPP proposes to recapitalize the infrastructure for transferring, preparing, examining, and packaging naval spent nuclear fuel and other irradiated materials, to ensure these capabilities are maintained for the vital NNPP mission of supporting the naval nuclear-powered fleet. The recapitalization will be carried out as two projects.

The NNPP was initially pursuing the two recapitalization projects in the same time frame; however, since the initiation of the NEPA process, the project schedules have changed such that planning for spent fuel handling recapitalization has progressed further than planning for examination recapitalization. Preparing one EIS that includes both recapitalization projects would require decisions about examination recapitalization too early in the design process, prior to having sufficient information to fully analyze the environmental impacts. Additionally, funding uncertainties have made the timing of examination recapitalization speculative in nature. To ensure an EIS is completed in support of the Navy's need for spent fuel handling recapitalization, it was necessary to reduce the scope of the EIS to cover just that proposed action.

Honorable Nathan Small,
Shoshone Bannock Tribes

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The EIS will consider the environmental effects related to the proposed action. The alternatives being evaluated have been revised to remove aspects related to examination recapitalization and to address public comments received during initial EIS scoping. The NNPP will evaluate a No Action Alternative, an Overhaul Alternative, and a New Facility Alternative:

- No-Action Alternative – Maintain the spent fuel handling capabilities of the Expended Core Facility (ECF) by continuing to use the current ECF infrastructure while performing corrective maintenance and repairs necessary to keep the infrastructure in good working order (i.e., actions sufficient to sustain the proper functioning of structures, systems, and components).
- Overhaul Alternative – Overhaul the spent fuel handling capabilities of the ECF at Naval Reactors Facility (NRF) by implementing major infrastructure and water pool refurbishment projects while performing corrective maintenance and repair actions as necessary.
- New Facility Alternative – Construct and operate a new facility for spent fuel handling capabilities at one of two potential locations at NRF on the Idaho National Laboratory (INL).

The locations for facility placement will be addressed in the EIS.

Cultural Resource Surveys and Investigations

The NNPP proposes to address impacts to environmental resources including impacts on cultural resources, such as historic, archaeological, and Native American culturally important sites. To support the impact evaluation, the NNPP worked with the INL Contractor, Battelle Energy Alliance (BEA) to conduct cultural resource surveys in the potential areas of disturbance. Based on these surveys, additional investigations were completed as applicable to make determinations about eligibility for listing on the National Register of Historic Places. These surveys and additional investigations were conducted in two phases based on changing project information. Over the course of the investigations, tribal representatives from the Heritage Tribal Office (HeTO) toured all of the archaeological sites scheduled for data recovery and provided valuable hands-on assistance during mapping and test excavations.

In June 2011, the NNPP transmitted the first survey report and notified you of the plan to do additional investigations. This letter transmits a second report including the results of the second phase of surveys and all the additional investigations at the potentially significant prehistoric sites located in areas potentially affected by the proposed action. As identified in the report, the purpose of the investigations was to identify cultural resources and assess the eligibility of the archaeological sites for nomination to the National Register by determining if additional buried cultural materials were present and of any value to future research in the region.

Honorable Nathan Small,
Shoshone Bannock Tribes

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April 30, 2013
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The attached report is marked Official Use Only to ensure that the NNPP does not release or allow the release of any information pertaining to the exact location of any archaeological sites to the public. The attached report shall be maintained in a manner which prevents release to unauthorized individuals.

The survey area that encompasses the areas of potential effects associated with the proposed action contains 51 archaeological resources - 21 prehistoric isolate locations, two historic isolate locations, 22 prehistoric sites, two historic sites associated with Euro American settlement, three historic resources associated with World War II and the post-war period, and one modern rock cairn.

The isolate locations are unlikely to yield additional information and have been evaluated as ineligible for nomination to the National Register (list is provided in Section 7.4 of the enclosed report). Seven sparse scatters of prehistoric artifacts that appear to be restricted to a shallow surface zone are also evaluated as ineligible for nomination to the National Register (see Section 7.4 of the enclosed report).

Seven prehistoric sites, the two historic sites representing Euro American settlement, the two historic resources and a historic road associated with the Arco Naval Proving Ground during World War II and the post-war period, and the modern cairn exhibit some potential for yielding additional information and were evaluated as potentially eligible for nomination, pending additional data recovery and research (see Section 7.4 of the enclosed report). These sites would be outside of the area of potential effect for the proposed action and would be avoided during construction of the proposed project.

Test excavations reported in Section 7.2 of the enclosed report demonstrate that eight of the prehistoric archaeological sites are unlikely to yield any additional information beyond that which has been collected during the intensive data recovery reported and the surveys that preceded this work. Further excavation is not merited and would not contribute to the study of regional prehistory or INL-specific research domains. Based on the testing results, all eight of the sites are evaluated as ineligible for nomination to the National Register.

INL lands are included within the aboriginal homeland of the Shoshone-Bannock Tribes. Although no Native American cultural resources have been specifically identified within the areas potentially impacted by the proposed action, representatives from the Shoshone-Bannock Tribes HeTO have indicated that prehistoric archaeological sites, native plants and animals, water, and other natural landscape features across the INL area continue to fill important roles in tribal heritage and ongoing cultural traditions. The EIS will address these tribal concerns.

Conclusions from Cultural Resource Surveys and Investigations

The area of potential effect for cultural resources associated with the Overhaul Alternative includes approximately 47 acres to the north and northeast of the existing NRF perimeter. Proposed project developments are limited to a new security boundary

Honorable Nathan Small,
Shoshone Bannock Tribes

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April 30, 2013
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system in this area. No archaeological resources are located in the Overhaul Alternative area of potential effect. The archaeological investigations support a finding of no effects to historic properties and no adverse impacts to known resources of cultural significance for the Overhaul Alternative.

All of the archaeological resources identified within the New Facility Alternative Location 3/4 area of potential effect are evaluated as ineligible for nomination to the National Register due to limited research potential and lack of integrity. These evaluations are supported by test excavations completed at six of the identified archaeological sites. The seventh archaeological site was not visible on the current landscape during recent surveys and appears to have been originally restricted to a shallow surface zone that has been subject to widespread changes as a result of erosion, freeze-thaw action, bioturbation, and modern activities. The short segment of West Monument Road that passes through the temporary disturbance area for the New Facility Alternative Location 3/4 is highly modified for current activities at NRF and is evaluated as ineligible for nomination to the National Register. Unmodified segments of the road are well-preserved to the northeast of the temporary disturbance area of the proposed action. The remaining resources are isolate locations that have been collected for permanent curation and possible future study. The archaeological investigations support a finding of no adverse effects to historic properties and no adverse impacts to any known resources of cultural significance for the New Facility Alternative Location 3/4.

All of the archaeological resources identified within the New Facility Alternative Location 6 area of potential effect are evaluated as ineligible for nomination to the National Register due to limited research potential and lack of integrity. These evaluations are supported by test excavations completed at one of the identified archaeological sites. The remaining resources are isolate locations that have been collected for permanent curation and possible future study. The archaeological investigations support a finding of no adverse effects to historic properties and no adverse impacts to known resources of cultural significance for the New Facility Alternative Location 6.

Although direct impacts are unlikely, there is potential for undesirable indirect effects to cultural resources that are located just outside the areas of potential effect. Since project-related activity levels are projected to increase significantly during construction and the overall developed footprint of NRF would expand permanently, any archaeological resources or natural resources of potential concern to the Shoshone-Bannock Tribes or others located near the newly developed perimeter could be affected indirectly due to the increased activity in these previously undeveloped areas. In particular, artifacts may be subject to unauthorized collection or impacted by off-road vehicle use and other small ground disturbing activities that commonly occur around developed areas.

Government-to-Government Consultation

Naval Reactors Idaho Branch Office would like to hold a meeting with the Shoshone-Bannock Tribes to discuss any additional information you may have about specific Native American cultural resources and tribally important natural resources at NRF to

Honorable Nathan Small,
Shoshone Bannock Tribes

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April 30, 2013

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ensure we adequately address impacts in the EIS. I will contact the Tribes by June 3, 2013 to schedule the meeting. After assessing the information the Tribes provide at the meeting, we will determine any additional actions that are necessary to comply with the government-to-government consultation process. Please do not hesitate to contact me at 208-533-5969 if you have any questions or comments or need additional information.

Sincerely,

Christopher M. Henvit

C. M. Henvit
Naval Reactors Idaho Branch Office

Enclosure (I) INL/LTD-12-27685 dated April 2013. Cultural Resource Investigations for Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling at the Naval Reactors Facility on the Idaho National Laboratory.

Copy to:

Ms. Carolyn Smith, Heritage Tribal Office (w/o enclosure)
Ms. Susan Pengilly, Deputy State Historic Preservation Officer (w/o enclosure)
Ms. Brenda Pace, BEA Cultural Resource Management (w/o enclosure)
W. Preacher, Tribal DOE Director (w/o enclosure)
R. L. Pence, DOE-ID (w/o enclosure)



DEPARTMENT OF ENERGY

NAVAL REACTORS
IDAHO BRANCH OFFICE
POST OFFICE BOX 2469
IDAHO FALLS, IDAHO 83403-2469

NR:IBO-13/069
April 30, 2013

Ms. Carolyn Smith
Heritage Tribal Office
Shoshone-Bannock Tribes
P. O. Box 306
Fort Hall, ID 83203-0306

**SUBJECT: CULTURAL RESOURCE INVESTIGATIONS FOR THE
RECAPITALIZATION OF INFRASTRUCTURE SUPPORTING NAVAL
SPENT NUCLEAR FUEL HANDLING AT THE NAVAL REACTORS
FACILITY ON THE IDAHO NATIONAL LABORATORY**

Dear Ms. Smith,

The Department of Energy (DOE) Naval Nuclear Propulsion Program (NNPP) is seeking documented consultation with the Shoshone-Bannock federally recognized Indian Tribes ("Tribes") regarding the cultural resource investigations for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling Environmental Impact Statement (EIS).

Introduction and Project Description

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Carolyn Smith,
Heritage Tribal Office

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April 30, 2013
Page 2

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Carolyn Smith,
Heritage Tribal Office

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April 30, 2013
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Conclusions from Cultural Resource Surveys and Investigations

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Carolyn Smith,
Heritage Tribal Office

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April 30, 2013
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All of the archaeological resources identified within the New Facility Alternative Location 6 area of potential effect are evaluated as ineligible for nomination to the National Register due to limited research potential and lack of integrity. These evaluations are supported by test excavations completed at one of the identified archaeological sites. The remaining resources are isolate locations that have been collected for permanent curation and possible future study. The archaeological investigations support a finding of no adverse effects to historic properties and no adverse impacts to known resources of cultural significance for the New Facility Alternative Location 6.

Although direct impacts are unlikely, there is potential for undesirable indirect effects to cultural resources that are located just outside the areas of potential effect. Since project-related activity levels are projected to increase significantly during construction and the overall developed footprint of NRF would expand permanently, any archaeological resources or natural resources of potential concern to the Shoshone-Bannock Tribes or others located near the newly developed perimeter could be affected indirectly due to the increased activity in these previously undeveloped areas. In particular, artifacts may be subject to unauthorized collection or impacted by off-road vehicle use and other small ground disturbing activities that commonly occur around developed areas.

Government-to-Government Consultation

Naval Reactors Idaho Branch Office would like to hold a meeting with the Shoshone-Bannock Tribes to discuss any additional information you may have about specific

Carolyn Smith,
Heritage Tribal Office

NR:IBO-13/069
April 30, 2013
Page 5

Native American cultural resources and tribally important natural resources at NRF to ensure we adequately address impacts in the EIS. I will contact you by June 3, 2013 to schedule the meeting. After assessing the information you provide at the meeting, we will determine any additional actions that are necessary to comply with the government-to-government consultation process. Please do not hesitate to contact me at 208-533-5969 if you have any questions or comments or need additional information.

Sincerely,



C. M. Henvit
Naval Reactors Idaho Branch Office

Enclosure (I) INL/LTD-12-27685 dated April 2013. Cultural Resource Investigations for Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling at the Naval Reactors Facility on the Idaho National Laboratory.

Copy to:

The Honorable Nathan Small, Chairman, Fort Hall Business Council (w/o enclosure)
Ms. Susan Pengilly, Deputy State Historic Preservation Officer (w/o enclosure)
Ms. Brenda Pace, BEA Cultural Resource Management (w/o enclosure)
W. Preacher, Tribal DOE Director (w/o enclosure)
R. L. Pence, DOE-ID (w/o enclosure)



DEPARTMENT OF ENERGY

NAVAL REACTORS
IDAHO BRANCH OFFICE
POST OFFICE BOX 2469
IDAHO FALLS, IDAHO 83403-2469

NR:IBO-14/006
June 9, 2014

The Honorable Nathan Small
Chairman Fort Hall Business Council
Shoshone-Bannock Tribes
P.O. Box 306
Fort Hall, ID 83203-0306

**SUBJECT: CULTURAL RESOURCE INVESTIGATIONS FOR THE
RECAPITALIZATION OF INFRASTRUCTURE SUPPORTING NAVAL
SPENT NUCLEAR FUEL HANDLING AT THE NAVAL REACTORS
FACILITY ON THE IDAHO NATIONAL LABORATORY**

Dear Chairman Small,

On Wednesday, October 2, 2013, I met with you and other members of the Fort Hall Business Council. The purpose of the meeting was to consult with the Shoshone-Bannock federally recognized Indian Tribes regarding cultural resource investigations for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling Environmental Impact Statement (EIS). A summary of the background and discussion is provided in enclosure 1.

During technical consultation with the Shoshone-Bannock Heritage Tribal Office, the Naval Nuclear Propulsion Program (NNPP) agreed that the New Facility Alternative proposed in the EIS would have small unavoidable impacts to Native American cultural resources and committed to document the impact in the Draft EIS. The NNPP would like to obtain FHBC's endorsement of the conclusions reached by the Shoshone-Bannock Heritage Tribal Office and agreement that government-to-government consultation is complete.

As agreed to with the Fort Hall Business Council, the following NNPP actions will be tracked to completion:

1. For the New Facility Alternative, the NNPP will implement the additional protective measures, identified in Section 8.3 of the 2013 Cultural Resources Investigations Report, including conducting cultural resource sensitivity training for personnel to discourage unauthorized artifact collection, off-road vehicle use, and other activities that may affect cultural resources.

The Honorable Nathan Small,
Shoshone-Bannock Tribes

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June 9, 2014
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2. The NNPP will work with DOE-ID to reach a collaborative means to satisfy NNPP's commitment to set up a path forward or means to prepare or train successors to staff the Tribal Department of Energy Office. NNPP proposes to set a follow on meeting with the Fort Hall Business Council to discuss alternative options to do this.

Please do not hesitate to contact me at 208-533-5969 if you have any questions or comments.

Sincerely,



C. M. Henvit
Naval Reactors Idaho Branch Office

Enclosure (1) Meeting Minutes from October 2, 2013 meeting with the Fort Hall Business Council, "Cultural Resource Investigations for Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling at the Naval Reactors Facility on the Idaho National Laboratory"

Copy to:

Ms. Carolyn Smith, Heritage Tribal Office
Mr. Willie Preacher, Tribal DOE Director
Ms. Brenda Pace, BEA Cultural Resource Management
R. B. Provencher, DOE-ID
R. V. Furstenau, DOE-ID
J. R. Cooper, DOE-ID
R. L. Pence, DOE-ID

Enclosure 1 to NR:IBO-14/006

Cultural Resource Investigations for Recapitalization of Infrastructure Supporting Naval
Spent Nuclear Fuel Handling at the Naval Reactors Facility on the Idaho National
Laboratory
Shoshone-Bannock Fort Hall Business Council
Wednesday, October 2, 2013
9:00 a.m.

Purpose

To document consultation with the Shoshone-Bannock federally recognized Indian Tribes regarding cultural resource investigations for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling Environmental Impact Statement (EIS).

Background

The Naval Nuclear Propulsion Program (NNPP) is responsible for all aspects of U.S. Navy nuclear power and propulsion. These responsibilities include design, maintenance, and safe operation of nuclear propulsion systems throughout their operational life cycles. A crucial component of this mission, naval spent nuclear fuel handling, occurs at the end of a nuclear propulsion system's useful life. After the naval spent nuclear fuel has been removed from an aircraft carrier or submarine, NNPP spent fuel handling includes the subsequent transfer, preparation, and packaging required for dry storage.

Since 1957, naval spent nuclear fuel removed from naval reactors at shipyards or prototype and training sites has been transported via rail in specially designed shipping containers to the Naval Reactors Facility (NRF) at the Idaho National Laboratory (INL). The shipping containers are staged on rail sidings located inside the developed area of NRF, then transferred to the Expendable Core Facility (ECF). Access to the ECF for these large shipping containers is provided by large roll-up doors. The naval spent nuclear fuel is removed from the shipping containers and placed into a water pool at the ECF, where it is stored in temporary storage ports.

Proposed Action

The NNPP is proposing to recapitalize the current naval spent nuclear fuel handling capabilities provided by ECF. Action is needed because the ECF infrastructure as currently configured cannot support the use of the new M-290 shipping containers. M-290 shipping containers will be used instead of M-140 shipping containers for aircraft carrier fuel. The use of the new M-290 shipping containers will eliminate disassembly work at the shipyards resulting in the shipment of longer naval spent nuclear fuel to ECF. M-290 shipping containers cannot be unloaded into ECF without major infrastructure changes.

Enclosure 1 to NR:IBO-14/006

Additionally, the ECF infrastructure is reaching the end of its useful life. The maintenance and repair burden necessary to maintain ECF for long-term operation is increasing. Age-related deterioration of structures, systems, and components and outdated infrastructure designs present a challenge to the continuity of ongoing ECF spent fuel handling operations.

Safe and environmentally responsible naval spent nuclear fuel handling capabilities are required until as least 2060. Based on the life-cycle of current and new designs and planned construction of aircraft carriers and submarines, the ability to perform naval spent nuclear fuel handling will be required into the foreseeable future. For example, next-generation aircraft carriers have a ship life of approximately 50 years and the next scheduled aircraft carrier delivery is 2015.

Alternatives

The No Action Alternative would result in the continued use of the current ECF infrastructure and would include performing corrective maintenance and repairs as needed to keep the infrastructure in safe working order. Under the No Action Alternative, the NNPP would sustain the proper functioning of structures, systems, and components; however, the No Action Alternative does not provide the needed long-term capabilities for transferring, preparing, and packaging naval spent nuclear fuel.

The Overhaul Alternative would result in the recapitalization of the naval spent nuclear fuel handling capabilities of the ECF by overhauling the ECF with major infrastructure and water pool refurbishment projects. The Overhaul Alternative would provide the needed long-term capabilities for transferring, preparing, and packaging naval spent nuclear fuel.

Under the New Facility Alternative, the NNPP would construct and operate a new facility for naval spent nuclear fuel handling capabilities at one of two potential locations at NRF. Some additional areas (e.g., laydown, batch plant, craft parking, stockpile) would only be temporarily disturbed and would be revegetated with native species.

Cultural Resource Investigations

Cultural resource investigations were completed by INL's Cultural Resource Management Office. The surveys and investigations were completed between 2011 and 2013. Brenda Pace was the principal investigator and she directed the field work, analyses, and report preparation.

The Shoshone-Bannock Tribe's Heritage Tribal Office (LaRae Bill, Romelia Martinez, and Carolyn Smith) provided assistance during the field work conducted by the INL Cultural Resource Management Office. The Heritage Tribal Office was comfortable with the NNPP choice to use Brenda Pace to conduct the investigations because they are familiar with her and her team.

Enclosure 1 to NR:IBO-14/006

The 2011 Cultural Resource Survey Report was transmitted to the Fort Hall Business Council on June 22, 2011. The cultural resource surveys that were conducted at NRF in 2011 were documented in this report. The report recommendation was to conduct test excavations on the cultural resource sites that could be potentially eligible for the National Register of Historic Places to determine eligibility.

The 2013 Cultural Resource Investigations Report is based on additional survey work and test excavations that were conducted by the INL Cultural Resource Management Office. NNPP transmitted the report to the Fort Hall Business Council, the Heritage Tribal Office, and the State Historic Preservation Office on April 30, 2013.

There were no archaeological resources located in the Overhaul Alternative disturbance area. The investigations support a finding of no adverse effects to historic properties and a finding of no adverse impacts to known resources of cultural significance.

The survey area that encompasses the two potential disturbance areas of the New Facility Alternative contains 51 archaeological resources. These resources include: 21 prehistoric isolate locations; 2 historic isolate locations; 22 prehistoric sites; 2 historic sites associated with Euro American settlement; 3 historic resources associated with World War II and the post-war period; and 1 modern rock cairn. The investigations support a finding of no adverse effects to historic properties and a finding of no adverse impacts to known resources of cultural significance.

State Historic Preservation Officer (SHPO) Response

NNPP received a response to the Cultural Resource Investigations report from the Idaho State Historic Preservation Officer (SHPO) on June 4, 2013. The response from the SHPO included concurrence on the NNPP finding of no adverse effect to historic properties and no adverse impacts to any known resources of cultural significance for the No Action Alternative. The SHPO also concurred on the finding of no adverse effect to historic properties and no adverse impacts to any known resources of cultural significance for the Overhaul Alternative and the New Facility Alternative if the recommendations for additional protective measures, identified in Section 8.3 of the 2013 Cultural Resources Investigations Report are adopted. Specifics of these recommendations were discussed, including the details regarding the recommendation to minimize disturbance to plant species important to the Shoshone-Bannock Tribes by implementation of good housekeeping practices, and/or revegetation of disturbed areas with native plant species, and the possible implementation of seasonal and time of day restrictions on ground disturbance to minimize disturbance to wildlife species.

The NNPP is planning to revegetate disturbed areas with native plant species. The NNPP is also planning to implement good housekeeping practices during construction. The NNPP discussed the need for seasonal and time-of-day restrictions on ground disturbance. These restrictions would only be implemented to protect the greater sage-grouse. The NNPP considers the Candidate Conservation Agreement (CCA) being developed by DOE-ID with the USFWS to be the appropriate document to follow

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regarding the protection of the greater sage-grouse. The CCA, as currently written, would not require seasonal or time-of-day restrictions on ground disturbance for the proposed action because the disturbances are not within 1 kilometer of a breeding habitat or lek. Therefore, the NNPP does not plan to implement any seasonal or time-of-day restrictions on ground disturbance.

Heritage Tribal Office Response

The NNPP met with members of the Director, Tribal Department of Energy Program (Willie Preacher) and the Heritage Tribal Office Cultural Resources Coordinator (Carolyn Smith) on Thursday, June 13, 2013 to identify and assess Native American cultural resources and concerns. The meeting participants discussed the historical record described in the INL Cultural Resources Management Plan, which supports the conclusion that the INL site, including the proposed disturbance areas, is located within a large original territory of the Shoshone-Bannock people and archaeological and other cultural resources that reflect the importance of the area to the Tribes are located there. NNPP agreed that the proposed recapitalization of infrastructure supporting naval spent nuclear fuel handling at NRF on INL would have small unavoidable impacts to Native American cultural resources (small archaeological sites and ecological resources) identified in the survey areas for the New Facility Alternative, and agreed to document the impact in the Draft EIS. Willie Preacher and Carolyn Smith indicated their general support for the project. The discussion, agreements and actions were documented in meeting minutes signed by Chairman Small, Willie Preacher, Carolyn Smith and NNPP (Christopher Henvit).

Discussion

When discussing the current state of the ECF infrastructure and the significant maintenance that is currently required, the Fort Hall Business Council asked if the water pool at ECF was cracked and whether the water pool was leaking to the environment. NNPP responded that similar to other INL sites, NRF periodically samples groundwater to assess the affect of NRF operations on human health and the environment and provides the sample results to the Environmental Protection Agency and the Idaho Department of Environmental Quality in accordance with a Federal Facility Agreement/Consent Order. The sample results continue to demonstrate that operations at NRF are protective of human health and the environment. In addition, NRF closely compares water additions to the water pool with known evaporation rates to provide an indicator for detecting a leak to the environment between sampling events.

The concerns regarding the aging infrastructure that were discussed during the meeting highlight why the NNPP wants to recapitalize the facility. The maintenance will continue to be costly if the NNPP continues to use a facility that is over 50 years old.

During the discussion of the work that is done at ECF, it was mentioned that Carolyn Smith of the Heritage Tribal Office and Willie Preacher, Tribal DOE Program Director were able to tour the facility to gain a better understanding of the operations conducted

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in ECF. These tours were conducted on September 13, 2013. The Fort Hall Business Council also expressed interest in a tour of the facility. Naval Reactors, Idaho Branch Office will work with the Fort Hall Business Council if they would like to schedule an unclassified tour of ECF.

During the discussion of the M-290 shipping containers, the Fort Hall Business Council asked if the bigger M-290 shipping containers meant that more high level waste will be shipped into Idaho. A clarification was provided that the naval spent nuclear fuel being shipped to Idaho is only from the Navy and only from aircraft carriers and submarines, there is no commercial fuel being shipped with it. In addition, the Navy has a limit on the amount of spent fuel that can be shipped that is based on the agreements with the State of Idaho and the Shoshone-Bannock Tribes. The amounts of spent fuel planned to be shipped are consistent with these agreements.

The Fort Hall Business Council also asked if the M-290 shipping containers would have more naval spent nuclear fuel since it is a bigger container. The Fort Hall Business Council had concerns that the consequences of an accident would elevate since the M-290 shipping containers are bigger than the M-140 shipping containers. The clarification was provided that the bigger M-290 shipping containers would not contain more naval spent nuclear fuel. Rather, the shipping container would transport aircraft carrier spent nuclear fuel assemblies without prior disassembly. In addition, naval spent nuclear fuel is always sealed within the container, which prevents radioactive contamination from entering the environment. Shielding from radiation allows workers to be stationed in close proximity while performing naval spent fuel handling operations. There are controls in place to ensure that the work performed during these operations is in accordance with the procedures. The Fort Hall Business Council inquired about who handles these operations at ECF. Bechtel Marine Propulsion Corporation (BMPC), Naval Reactor's Prime Contractor handles the operations at ECF, and the BMPC workforce is highly trained and skilled for these operations.

During the discussion of the M-290 shipping containers, the Fort Hall Business Council asked why the NNPP is using the M-290 shipping containers and inquired about the timeframe of a geological repository. The NNPP plans to use the M-290 for two purposes. The first purpose is to transport naval spent nuclear fuel from aircraft carriers without prior disassembly of the non-fuel structural components from the naval spent nuclear fuel assemblies. Elimination of this disassembly operation at the shipyard results in more efficient shipyard defueling and refueling operations, which are necessary to meet the current refueling schedules for the fleet in support of national defense. M-290 shipping containers would also be used to ship canisters of processed naval spent nuclear fuel to an interim storage facility or a geological repository. The current timeframe projected for a repository to be available if Yucca Mountain is not licensed is 2048.

The Fort Hall Business Council asked where the M-290 shipping containers would go if the No Action Alternative was selected. The No Action Alternative does not meet NNPP's need because it would not provide the infrastructure necessary to support the

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naval nuclear reactor defueling and refueling schedules required to meet the operational needs of the U.S. Navy. Additionally, the No Action Alternative does not meet the NNPP's need because the ECF infrastructure as currently configured cannot support use of the new M-290 shipping containers and the ECF infrastructure is reaching the end of its useful life. For added clarity, the National Environment Policy Act which governs the preparation of environmental impact statements requires the government to define and analyze a No Action Alternative to look at the impacts of doing nothing. The real choice here is building a new up-to-date facility or refurbishing and maintaining the existing facility.

During the discussion, the Fort Hall Business Council questioned what the "CSRF" was. CSRF stands for the Cask Shipping and Receiving Facility and it will support the use of the new, longer M-290 shipping containers. The CSRF will unload canisters of unprocessed fuel from the M-290 shipping containers, load canisters of processed naval spent nuclear fuel into the M-290 shipping containers, and prepare the M-290 shipping containers for return empty to a shipyard or for shipment to an interim storage facility or a geologic repository. The CSRF is currently being constructed to the east of ECF. CSRF construction was covered in the Addendum to the Environmental Assessment for the Use of a More Efficient Shipping Container System for Spent Nuclear Fuel from Naval Aircraft Carriers, dated October 2009. The Addendum to the Environmental Assessment was sent to the Shoshone-Bannock Tribes.

During discussion of the New Facility Alternative, the Fort Hall Business Council asked who will decide where the proposed facility would go. The Environmental Impact Statement (EIS) is a detailed environmental analysis for the proposed action that will assist in decision-making and will describe the positive and negative environmental effects of the proposed action and alternatives. The EIS shows the NNPP what the impacts will be. The NNPP ultimately decides where the facility will go. The EIS process allows all the affected parties the opportunity to provide input for NNPP consideration before that decision is made.

The Fort Hall Business Council asked what would happen to the proposed facility if there were an earthquake. Several accident scenarios are analyzed in the EIS, including a beyond design basis event, like an extremely large earthquake. The proposed facility water pool would be designed to high seismic standards to retain water in the event of a design basis earthquake.

During the discussion of the cultural resource investigations, the Fort Hall Business Council asked what happens to the sites that are not in the proposed disturbance areas. If the sites would not be disturbed, the INL Cultural Resources Management team did not dig in these areas during the investigations. The Business Council also asked if there are possible campsites. The INL Cultural Resources Management representative clarified that most of the sites in the survey area are very small and are representative of hunting activities; the campsites that have been found on INL are closer to the river.

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The Fort Hall Business Council inquired if the NNPP consults with the neighboring communities regarding the proposed facility. In addition to the public meetings already held to receive input on the scope of the EIS, the NNPP plans to hold public meetings to allow the public to submit comments on the Draft EIS. In addition, the Draft EIS will be sent to state and local stakeholders and will be made available for the public to give them the opportunity to provide feedback.

The Fort Hall Business Council expressed their concern regarding cultural sites at the INL. The Business Council would like for the NRF employees and the construction workforce to receive training on the importance of the cultural history at INL. There are limited cultural resources at INL because many have been collected previously or destroyed.

Action: The NNPP will include cultural resource sensitivity training for NRF personnel as part of an all hands annual environmental training to discourage unauthorized artifact collection, off-road vehicle use, and other activities that may impact cultural resources.

In addition, if cultural resources were identified during construction, the construction contractor would implement a Stop Work Procedure to guide the assessment and protection of any unanticipated discoveries of cultural materials during ground disturbing activities in accordance with the INL Cultural Resources Management Plan. Upon discovery of a resource, the following steps would be taken: 1) Stop work in the area the resource is found; 2) Immediately Call the INL Cultural Resources Management Archaeologist and Naval Reactors; 3) Maintain a 30 to 50 meter buffer around the artifact discovered (work can continue outside of the buffer); 4) Cultural Resources Management office will evaluate the significance of the resource and provide a protection plan or initiate the Native American Graves Protection and Repatriation Act within 2 working days of discovery (the Cultural Resource Management office's current practice is to evaluate the resource within 24 hours); 5) Naval Reactors would notify interested parties (to include the SHPO and the Shoshone-Bannock Tribes) and invite these interested parties to participate in the activities associated with the discovery.

The Fort Hall Business Council made a suggestion that a "kiosk" may be displayed at NRF to reinforce the cultural importance and history of the INL. Employees at NRF as well as construction workers for the proposed facility would be able to access the kiosk to learn about the cultural history of the area. The NNPP believes that including cultural resource sensitivity training for NRF personnel as part of annual environmental training to reinforce the cultural importance and of the INL would be more effective than a kiosk that not all employees may look at. Construction workers for the proposed new facility would receive cultural resource sensitivity training that would include the Stop Work Procedure that is discussed above.

The Fort Hall Business Council expressed that they rely heavily on the expertise of their staff, to include the Heritage Tribal Office and the Director of the Tribal Department of Energy Program. The Business Council recognized that the staff provided the NNPP

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with valuable information and guidance in this process. The Business Council discussed their concerns about filling these positions in the future and would like the NNPP to provide two scholarships in the amount of \$2000 each to members of the Shoshone-Bannock Tribes. The Business Council expressed that these scholarships would help fill positions and ensure that the staff is fully committed to the interest of the Shoshone-Bannock Tribes.

The NNPP notes the United States Department of Energy funds the Tribal Department of Energy Office through a cooperative agreement with the Shoshone-Bannock Tribes. The NNPP has discussed the Business Council request to provide scholarships to train replacement staff with the Department of Energy Idaho Operations Office (DOE-ID) who agreed to work with the NNPP to assist the Tribes in developing a succession planning program within existing budget constraints.

Action: NNPP proposes to set a follow on meeting with the Fort Hall Business Council to discuss alternative options to train replacement staff for the Tribal Department of Energy Office.

Final Meeting Minutes

Cultural Resource Investigations for Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling at the Naval Reactors Facility on the Idaho National Laboratory
Shoshone-Bannock Heritage Tribal Office
Thursday, June 13, 2013
9:30 a.m.

Participants:

Naval Reactors, Idaho Branch Office

Mr. Christopher Henvit
Mr. Steve Mathis

Battelle Energy Alliance / INL Cultural Resources Management

Ms. Brenda Pace, Principal Investigator

Bechtel Marine Propulsion Corporation

Ms. Laura Iannacci, Environmental Impact Statement (EIS) Manager
Ms. Christina Yakunich, Cultural Resources Lead

Tribal DOE / Heritage Tribal Office

Mr. Willie Preacher
Ms. Carolyn Smith
Ms. Romelia Martinez

Purpose:

Discuss cultural resource investigations performed to support the Draft EIS being prepared for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling at the Naval Reactors Facility on the Idaho National Laboratory. Determine the significance of the resources to the Shoshone-Bannock Tribes and obtain the Tribes support for the recapitalization project.

During the meeting, a set of powerpoint slides were reviewed. These powerpoint slides are provided in Enclosure 1. A summary of the background, discussion, agreements, and actions is provided below.

Background

The Naval Nuclear Propulsion Program (NNPP) is responsible for all aspects of U.S. Navy nuclear power and propulsion. These responsibilities include design, maintenance, and safe operation of nuclear propulsion systems throughout their operational life cycles. A crucial component of this mission, naval spent nuclear fuel handling, occurs at the end of a nuclear propulsion system's useful life. After the naval spent nuclear fuel has been removed from an aircraft carrier or submarine, NNPP spent fuel handling includes the subsequent transfer, preparation, and packaging required for dry storage.

Since 1957, naval spent nuclear fuel removed from naval reactors at shipyards or prototype and training sites has been transferred from ships or prototype sites in specially designed shipping containers and transported to the Naval Reactors Facility (NRF) at the Idaho National Laboratory (INL) via rail. The shipping containers are staged on rail sidings located inside the developed area of NRF, then transferred to Expended Core Facility (ECF). Access to ECF for these large shipping containers is provided by large roll-up doors. The naval spent nuclear fuel is removed from the shipping containers and placed into a water pool at the ECF, where it is stored in temporary storage ports.



Figure 1: Current ECF and Major Spent Fuel Handling Support Facilities at NRF

Proposed Action

The NNPP is proposing to recapitalize the current naval spent nuclear fuel handling capabilities provided by ECF. The proposed action is needed because the ECF infrastructure as currently configured cannot support the use of the new M-290 shipping containers. M-290 shipping containers will be used instead of M-140 shipping containers for aircraft carrier fuel. The use of the new M-290 shipping containers will eliminate disassembly work at the shipyards resulting in the shipment of longer naval spent nuclear fuel. ECF cannot currently unload the M-290 shipping containers without major infrastructure changes.

The ECF infrastructure is reaching the end of its useful life without significant upgrades. The NNPP has identified that the maintenance and repair burden necessary to sustain ECF as a viable resource for long-term operation is increasing. Age-related deterioration of structures, systems, and components and outdated infrastructure designs present a challenge to the continuity of ongoing ECF spent fuel handling operations.

Safe and environmentally responsible naval spent nuclear fuel handling capabilities are required until at least 2060. Based on the life-cycle of current and new designs and planned construction of aircraft carriers and submarines, the ability to perform naval spent nuclear fuel handling will be required into the foreseeable future. For example, next-generation aircraft carriers have a ship life of approximately 50 years and the next scheduled aircraft carrier is 2015.

Alternatives

The No Action Alternative would maintain the naval spent nuclear fuel handling capabilities of ECF by continuing to use the current ECF infrastructure and performing corrective maintenance and repairs necessary to keep the infrastructure in safe working order. Under the No Action Alternative, the NNPP would sustain the proper functioning of structures, systems, and components; however, the No Action Alternative does not provide the needed long-term capabilities for transferring, preparing, and packaging naval spent nuclear fuel. There would be no land disturbance under the No Action Alternative due to no new construction areas; therefore, there would be no impact to cultural resources.

The Overhaul Alternative would recapitalize the naval spent nuclear fuel handling capabilities of the ECF by overhauling the ECF with major refurbishment projects for the ECF infrastructure and the ECF water pool. The Overhaul Alternative provides the needed long-term capabilities for transferring, preparing, and packaging naval spent nuclear fuel.

Under the New Facility Alternative, the NNPP would construct and operate a new facility for naval spent nuclear fuel handling capabilities at one of two potential locations at NRF on the INL. Location 3/4 is the preferred location because it is in closer proximity to existing facilities. Slide 10 shows the proposed disturbance areas for the New Facility Alternative at Location 3/4. Some areas (e.g., laydown, batch plant, craft parking, stockpile) would only be temporarily disturbed and would be revegetated with native species. Location 6 does not have existing facility assets available for incorporation into the new facility. Slide 11 shows the proposed disturbance areas for the New Facility Alternative at Location 6. Some areas (e.g., laydown, batch plant, craft parking, stockpile) would only be temporarily disturbed and would be revegetated with native species.

Cultural Resource Investigations

Cultural resource investigations were completed by INL's Cultural Resource Management Office. The surveys and investigations were completed between 2011 and 2013. Brenda Pace was the principal investigator and she directed field work, analyses, and report preparation.

The Shoshone-Bannock Tribe's Heritage Tribal Office (LaRae Bill, Romelia Martinez, and Carolyn Smith) provided important assistance during field work conducted by the INL Cultural Resource Management Office. The Heritage Tribal Office was comfortable with the NNPP choice to use Brenda Pace to conduct the investigations because they are familiar with her and her team.

The 2011 Cultural Resource Survey Report was transmitted to the Fort Hall Business Council on June 22, 2011. Cultural resource surveys were conducted at NRF in 2011 and were documented in this report. The report recommendation was to conduct test excavations on the cultural resource sites that could be potentially eligible for the National Register of Historic Places to determine eligibility.

The 2013 Cultural Resource Investigations Report is based on additional survey work and test excavations that were conducted by the INL Cultural Resource Management Office. The report was transmitted to the Shoshone-Bannock Fort Hall Business Council and the Heritage Tribal Office on April 30, 2013.

The survey area (see Slide 14) that encompasses the potential disturbance areas of the proposed action contains 51 archaeological resources (see Slides 16 and 17). These resources include: 21 prehistoric isolate locations; 2 historic isolate locations; 22 prehistoric sites; 2 historic sites associated with Euro American settlement; 3 historic resources associated with World War II and the post-war period; and 1 modern rock cairn.

A cultural resource site is an area of human activity represented by material evidence; evidence of cultural features or more than 10 artifacts within 100 square meters. An isolate location is an area of short-term human activity represented by material evidence; less than 10 artifacts within 100 square meters.

Cultural Resource Investigation Results

Overhaul Alternative

There were no archaeological resources located in the Overhaul Alternative disturbance area. The investigations support a finding of no adverse effects to historic properties and a finding of no adverse impacts to known resources of cultural significance.

New Facility Alternative Location 3/4

There were 18 cultural resources identified at Location 3/4 (see Slide 21), 10 are isolate locations, seven are archaeological sites, and one is a segment of West Monument Road. Test excavations were completed at six of the seven archaeological sites. The seventh site was not visible on the current landscape during recent surveys. The archaeological sites and isolate locations are evaluated as ineligible for nomination to the National Register of Historic Places due to the limited research potential and lack of integrity. The segment of West Monument Road in Location 3/4 was evaluated as ineligible for nomination to the National Register because the segment that passes through the disturbance area is highly modified. The investigations support a finding of no adverse effects to historic properties and a finding of no adverse impacts to known resources of cultural significance.

New Facility Alternative Location 6

There were four cultural resources identified at Location 6 (see Slide 23), three are isolate locations and one is an archaeological site. Test excavations were completed at the archaeological site. All resources are evaluated as ineligible for nomination to the National Register due to limited research potential and lack of integrity. The investigations support a finding of no adverse effects to historic properties and a finding of no adverse impacts to known resources of cultural significance.

Discussion:

When discussing shipments of naval spent nuclear fuel to NRF, the Heritage Tribal Office asked if reactor compartments were also shipped to NRF. A clarification was provided that the naval spent nuclear fuel shipments do not include reactor compartments. Reactor compartments are shipped by barge to Hanford. There is no connection between reactor compartment shipments and naval spent nuclear fuel shipments.

During the discussion of the M-290 shipping containers, the Heritage Tribal Office asked why the NNPP is using the M-290 shipping containers and inquired about the timeframe of a geological repository. The NNPP plans to use the M-290 for two purposes. The first purpose is to transport naval spent nuclear fuel from aircraft carriers without prior disassembly of the non-fuel structural components from the naval spent nuclear fuel assemblies. Elimination of this disassembly operation at the shipyard results in more efficient defueling and refueling operations, which are necessary to meet the current refueling schedules for the fleet in support of national defense. M-290 shipping containers would also be used to ship canisters of processed naval spent nuclear fuel to an interim storage facility or a geological repository. 2048 is the earliest date advertised for availability of a geological repository.

While discussing the new M-290 shipping containers that will be used to ship naval spent nuclear fuel, the Heritage Tribal Office asked for pictures of the M-290 shipping container and the M-140 shipping container.

Action: NNPP will provide pictures of M-140 and M-290 shipping containers. Figure 2 shows M-140 shipping container, Figure 3 shows M-290 shipping container.



Figure 2: M-140 Shipping Container



Figure 3: M-290 Shipping Container

During the discussion of what work is done at ECF, Carolyn Smith of the Heritage Tribal Office expressed interest in taking a tour of ECF. She explained that it would be beneficial for the Shoshone-Bannock Tribes to have a better understanding of the operations conducted in ECF.

Action: Naval Reactors, Idaho Branch Office will work with the Shoshone-Bannock Heritage Tribal Office to schedule an unclassified tour of ECF.

During the discussion of Slide 24, the Heritage Tribal Office could not agree with the statements that no Native American cultural resources were identified within the survey area and there are no impacts to tribal heritage and ongoing cultural traditions. The NNPP acknowledged that the cultural resource report did not address the significance of the resources found to the Tribes. The NNPP solicited information from the Tribes about the significance of the resources. The Tribes noted that all of the resources have information to give. Isolates are indicative of previous land use. The Heritage Tribal Office acknowledged that isolates can move over time; however, they stated isolates could be indicative of a site larger than what was recorded during the cultural resource investigations. The current location of the INL site was a major corridor used for subsistence purposes by the Shoshone-Bannock people moving across Idaho. The entire area was also used by the Shoshone-Bannock Tribes for hunting. The Tribes consider objects that are of religious, traditional, or historic importance to include traditional plants, wildlife, and landscapes. The Shoshone-Bannock Tribes recognize the INL lies within their original territory, which contains cultural resources important to the Tribes.

Action: Based on the information provided from the Tribes, the NNPP proposed to acknowledge small impacts to Native American cultural resources identified in the survey areas for Location 3/4 and Location 6 in the Draft EIS. The Draft EIS will also note that even though the small archaeological sites that have been identified within the proposed disturbance areas are not eligible for the National Register, the historical record described in the INL Cultural Resources Management Plan supports the conclusion that the INL site, including the proposed disturbance areas, is located within a large original territory of the Shoshone-Bannock people and archaeological and other cultural resources that reflect the importance of the area to the Tribes are located there.

The Heritage Tribal Office noted that they preferred that the artifacts not be collected and stored in a curation facility; they would rather see the resources left on the INL, near their original place on the ground.

Action: The NNPP will consider the request to leave resources on the INL near their original location.

The Heritage Tribal Office asked where the NNPP is in the National Environmental Policy Act (NEPA) process for the proposed action. The Draft EIS is currently being prepared and should be available to the public in mid-June, 2014. When the Draft EIS is available for public comment, a copy will be forwarded to the Shoshone-Bannock Tribes by letter. The NNPP will hold public meetings in Idaho in the Summer of 2014.

Naval Reactors Idaho Branch Office received a response for the Cultural Resource Investigations for Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling at NRF on INL from the Idaho State Historic Preservation Officer (SHPO) on June 4, 2013. The response included concurrence on no adverse effect for the No Action Alternative as well as concurrence on no adverse effect for the Overhaul Alternative and the New Facility Alternative if the recommendations for additional protective measures, identified in Section 8.3 of the cultural resources report are adopted. Slide 26 of the presentation provides the Section 8.3 recommendation summary from the cultural resources report.

Specifics of these recommendations were discussed, including the details regarding the recommendation to minimize disturbance to plant and wildlife species important to the Shoshone-Bannock Tribes by possible implementation of seasonal and time of day restrictions on ground disturbance, good housekeeping, and/or revegetation of disturbed areas with native plant species. The NNPP is planning to revegetate disturbed areas with native plant species. The NNPP is also

planning to implement good housekeeping practices during construction. The NNPP discussed the need for seasonal and time of day restrictions on ground disturbance. These restrictions would be to protect the greater sage-grouse. The NNPP considers the Candidate Conservation Agreement (CCA) being developed by DOE-ID with the USFWS to be the appropriate document to follow regarding the protection of the greater sage-grouse. The CCA, as currently written, would not require any seasonal or time-of-day restrictions on ground disturbance for the proposed action because the disturbances are not within 1 kilometer of a lek. Therefore, the NNPP does not plan to implement any seasonal or time-of-day restrictions on ground disturbance.

The Tribes asked what actions the construction contractor would take if cultural resources were identified during construction. The NNPP stated that the construction contractor would implement a Stop Work Procedure to guide the assessment and protection of any unanticipated discoveries of cultural materials during ground disturbing activities in accordance with the INL Cultural Resources Management Plan. Upon discovery of a resource, the following steps would be taken: 1) Stop work in the area the resource is found; 2) Immediately Call the INL Cultural Resources Management Archaeologist and Naval Reactors; 3) Maintain a 30 to 50 meter buffer around the artifact discovered (work can continue outside of the buffer); 4) Cultural Resources Management office will evaluate the significance of the resource and provide a protection plan or initiate the Native American Graves Protection and Repatriation Act within 2 working days of discovery (the Cultural Resource Management office's current practice is to evaluate the resource within 24 hours); 5) Naval Reactors would notify interested parties (to include the SHPO and the Shoshone-Bannock Tribes) and invite these interested parties to participate in the activities associated with the discovery.

During this discussion, the Heritage Tribal Office suggested that Shoshone-Bannock tribal monitors could assist with monitoring on site during ground disturbance activities of the proposed action.

Action: Consistent with the INL Cultural Resources Management Plan, the NNPP will provide the Shoshone-Bannock Tribes Heritage Tribal Office the opportunity to monitor key ground disturbance activities that may occur at NRF in support of recapitalization activities.

Agreement

The NNPP noted that the purpose of the meeting was to identify and assess Native American cultural resources and concerns and obtain the Shoshone-Bannock Tribe's support for the recapitalization of infrastructure supporting naval spent nuclear fuel handling at NRF.

The Director, Tribal Department of Energy Program (Willie Preacher) and Cultural Resources Coordinator (Carolyn Smith) iterated the Shoshone-Bannock Tribe's view that any land disturbance activity on Tribal ancestral lands would have some negative impact to the Shoshone-Bannock Tribe's cultural heritage due to the historic use of the land as a major corridor for the Shoshone-Bannock Tribes. Willie Preacher and Carolyn Smith agreed that the proposed recapitalization of infrastructure supporting naval spent nuclear fuel handling at NRF on INL would have small impacts to Native American cultural resources identified in the survey areas for Location 3/4 and Location 6 and indicated their general support for the proposed action. The Draft EIS will note that even though the small archaeological sites that have been identified within the proposed disturbance areas are not eligible for the National Register, the historical record described in the INL Cultural Resources Management Plan supports the conclusion that the INL site, including the proposed disturbance areas, is located within a large original territory of the Shoshone-Bannock people and archaeological and other cultural resources that reflect the importance of the area to the Tribes are located there.

The NNPP conducted a meeting with the Fort Hall Business Council on Wednesday, October 2, 2013. The meeting included participants from the Fort Hall Business Council, Naval Reactors Idaho Branch Office, Tribal DOE Program Director, Heritage Tribal Office, Bechtel Marine Propulsion Corporation, and INL Cultural Resources Management. The purpose of the meeting was to document consultation with the Shoshone-Bannock federally recognized Indian Tribes regarding cultural resource

investigations for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling Environmental Impact Statement (EIS). The NNPP agreed to provide a letter to the Fort Hall Business Council to document the consultation.

Summary of Actions

NNPP actions:

1. Provide pictures of M-140 and M-290 shipping containers. (Complete – See Figures 2 and 3)
2. The NNPP will coordinate with the Heritage Tribal Office to arrange an unclassified tour of ECF. (Complete)
3. Include the general importance of the archaeological sites on INL to the Tribes and the details that the INL was a major corridor for Shoshone-Bannock Tribes moving across Idaho in the EIS. (ECD – Summer 2014)
4. Consider the request to leave resources on the INL near their original location. (Complete. Upon further evaluation, the NNPP concluded they cannot comply with the request because it is in conflict with 36 CFR 79 since the artifacts that are collected would no longer be 'protected' or in a secure place).
5. Send presentation to Heritage Tribal Office with Official Use Only maps removed. (Complete)
6. Consistent with the INL Cultural Resources Management Plan, NNPP will provide the Shoshone-Bannock Tribes Heritage Tribal Office the opportunity to monitor key ground disturbance activities that may occur at NRF in support of recapitalization activities. (ECD – 2016)
7. Provide draft meeting minutes to the Heritage Tribal Office by June 28, 2013. (Complete)

Heritage Tribal Office actions:

1. Provide comments on the draft meeting minutes to NNPP (Complete)
2. Discuss this technical consultation with the Fort Hall Business Council and determine if additional action is necessary to complete government-to-government consultation. (Complete)

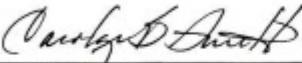
Signatures:


The Honorable Nathan Small
Chairman Fort Hall Business Council
Shoshone-Bannock Tribes

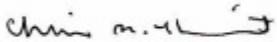
6/6/14
Date


Mr. Willie Preacher
Director, Tribal Department of Energy Program
Shoshone-Bannock Tribes

6-6-14
Date


Ms. Carolyn Smith
Heritage Tribal Office
Shoshone-Bannock Tribes

6-10/14
Date


Mr. Christopher Henvit
Idaho Branch Office
Naval Reactors

6/10/14
Date

B.4 Other Coordination



Department of Energy

NAVAL REACTORS
IDAHO BRANCH OFFICE
POST OFFICE BOX 2469
IDAHO FALLS, IDAHO 83403-2469

NR:IBO-13/054
April 04, 2013

Susan Burke
INL Oversight Coordinator
DEQ State Office
Boise, Idaho 83706

**SUBJECT: NON-RADIOLOGICAL AIR QUALITY MODELING FOR
RECAPITALIZATION OF INFRASTRUCTURE SUPPORTING NAVAL
NUCLEAR FUEL HANDLING DRAFT ENVIRONMENTAL IMPACT
STATEMENT**

Dear Ms. Burke:

The U.S. Department of Energy (DOE) Office of Naval Reactors is seeking coordination with your office on three air quality modeling reports that describe protocols and results for pollutant impacts at Idaho National Laboratory (INL) public receptor locations and Federal Class I Areas. The Naval Nuclear Propulsion Program (NNPP) is preparing an Environmental Impact Statement (EIS) for recapitalizing the naval spent nuclear fuel handling capabilities of the Expended Core Facility (ECF) at the INL. The EIS will contain an analysis of impacts on air quality at INL public receptor locations and Federal Class I Areas in the vicinity of the INL. The EIS analysis will be based on the three air quality modeling reports which were generated to support the National Environmental Policy Act (NEPA) process.

The NNPP proposes to recapitalize the infrastructure for preparing, examining, and packaging naval spent nuclear fuel and other irradiated materials, to ensure these capabilities are maintained for the vital NNPP mission of supporting the naval nuclear-powered fleet. The recapitalization is expected to be carried out as two parts. The first part would be the recapitalization of infrastructure supporting naval spent nuclear fuel handling, which includes the Spent Fuel Handling Recapitalization Project; the second part would be the recapitalization of infrastructure supporting naval spent nuclear fuel examinations.

This coordination was first initiated in October, 2011 following publication of a Notice of Intent (NOI) for the project in 2010. Due to changes in EIS scope and overall ECF

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INL Oversight Coordinator

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Recapitalization project funding and timeline, coordination was postponed until an amended NOI was published in the Federal Register.

An amended NOI was published in the Federal Register on May 10, 2012. The purpose of the amended NOI was to announce the NNPP's intent to reduce the scope of the EIS to include only the recapitalization of naval spent nuclear fuel handling capabilities. Interfaces and exchanges between recapitalization of naval spent nuclear fuel handling and examination capabilities will be factored into designs, to ensure that both parts can be carried out in an environmentally responsible and cost effective manner. The recapitalization of examination capabilities will be considered as a reasonably foreseeable future action in the cumulative impacts of the EIS for the recapitalization of naval spent nuclear fuel handling capabilities. Therefore, the recapitalization of examinations capabilities was retained in air quality modeling reports. Three alternatives will be analyzed in the EIS:

1. Maintain ECF without a change to the present course of action or management of the facility. Spent fuel handling capabilities of ECF would continue to use the current ECF infrastructure while performing corrective maintenance and repairs necessary to keep the infrastructure in good working order (i.e., actions sufficient to sustain the proper functioning of structures, systems, and components). (No Action Alternative)
2. Overhaul ECF by implementing major refurbishment projects for the ECF infrastructure and water pools to provide the needed long-term capabilities for transferring, preparing, and packaging naval spent nuclear fuel. (Overhaul Alternative)
3. Site a new Spent Fuel Handling Recapitalization Project facility at NRF. (New Facility Alternative)

The NNPP would like to re-initiate this coordination based on non-radiological air quality modeling that was completed in January 2013.

Three modeling reports including protocols, inputs, and results are provided in enclosures 1, 2, and 3. Estimated new source emissions based on best available information and existing INL emission sources were used. Enclosure 1 contains an evaluation of impacts from criteria, toxic, and prevention of significant deterioration (PSD) air pollutants at INL public receptor locations along with an evaluation of criteria and PSD air pollutant impacts at near field (less than or equal to 50 kilometers from the source) Craters of the Moon receptor locations. Enclosure 2 contains an evaluation of impacts on visibility at near field Craters of the Moon receptor locations and a screening assessment for PSD and visibility impacts at far field (greater than 50 kilometers from the source) Federal Class I Areas. Near field visibility impacts were modeled using VISCREEN. Enclosure 3 contains an evaluation of PSD air pollutant impacts at far field Federal Class I Areas using CALPUFF. Methods outlined in FLAG 2010 were followed for impacts at Federal

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Class I Areas. Additionally, the National Park Service was consulted on methods used for modeling air quality at Federal Class I Areas.

The AERMOD (EPA 2004a) model with meteorological data processed through the AERMET (EPA 2004b) preprocessor was used for criteria, toxic, and PSD air pollutants at INL receptor locations and near field Craters of the Moon. In general, NNPP used:

- AERMOD Version 11103,
- Meteorological data for 2000-2004 provided to Battelle Energy Alliance (BEA) by Idaho Department of Environmental Quality (IDEQ) with substitution of on-site INL surface data,
- AERMET Version 06341,
- INL public receptor locations provided by IDEQ in a memo dated May 23, 2011.

AERMOD version 12060 was released in 2012 after modeling with AERMOD version 11103 was completed. A benchmark between the two versions was run, and the predicted concentrations between the two versions were identical. Therefore, the 11103 version was retained for the EIS analysis.

Impacts of criteria pollutants and fugitive dust were modeled for construction. On-road vehicle emission factors (e.g., construction worker commuting and material deliveries) were estimated using the EPA model MOBILE6.2. In 2011, EPA recommended MOVES2010a for assessing the criteria air pollutant impacts of vehicle emissions in NEPA documents, with a 2 year grace period for implementation, ending in December 2012. The Draft EIS for this project has been in preparation and review during the 2 year grace period. EPA recommended that if a model other than MOVES2010a (e.g., MOBILE6.2) is used in a Draft EIS that is released during the grace period, it is acceptable to carry that model through to the Final EIS. While the Draft EIS will be published for public comment in 2014 after the 2 year grace period ends, the NNPP is proposing that the use of MOBILE6.2 in the EIS be carried through the final document. On-road emissions estimated for the construction time-frame are small and use of a different model should not impact concentrations at public receptor locations (see Enclosure 1 for emissions).

Note that the modeling is not intended for permitting purposes. Permit evaluations will be performed once the project has developed further and a Record of Decision has been published. Review of the modeling reports at this time is requested to ensure that IDEQ's expectations with respect to NEPA analysis are met to mitigate the risk of receiving significant comments on the Draft EIS that could delay the publication of the Final EIS if additional modeling is required. The NNPP requests feedback from IDEQ by May 24, 2013.

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Please don't hesitate to contact me at 208-533-5363 or by e-mail at robert.ramsey@nrp.doe.gov if you have any questions or comments or need additional information. I will follow-up with you by May 10, 2013 to discuss:

- The use of AERMOD version 11103
- The use of AERMOD version 11103 with a version of AERMET that is compatible with the meteorological data for 2000 to 2004 provided to BEA by IDEQ.
- The use of MOBILE6.2 to estimate on-road vehicle emissions during construction
- Other concerns that IDEQ might have regarding the modeling reports.

Thank you for your assistance.



R. E. Ramsey
Idaho Branch Office

References: FLAG 2010. U.S. Forest Service, National Park Service, and U.S. Fish and Wildlife Service. Federal Land Managers' Air Quality Related Values Work Group (FLAG): Phase I Report – Revised (2010). Natural Resource Report NPS/NRPC/NRR-2010/232. National Park Service, Denver, Colorado.

Enclosure 1 INL/LTD-12-26728. Evaluation of Criteria Toxic and Prevention of Significant Deterioration Air Pollutant Emissions for the Expended Core Facility Recapitalization Environmental Impact Statement. January 2013. (Official Use Only)

Enclosure 2 INL/LTD-12-26766. Evaluation of Visibility Impacts for the Expended Core Facility (ECF) Recapitalization Environmental Impact Statement. January 2013. (Official Use Only)

Enclosure 3 INL/LTD-12-26741. Evaluation of Prevention of Significant Deterioration (PSD) Increment Levels In Class I Areas for the Expended Core Facility (ECF) Recapitalization Environmental Impact Statement. January 2013. (Official Use Only)

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STATE OF IDAHO
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C. L. "BUTCH" OTTER, GOVERNOR
CURT FRANSEN, DIRECTOR

August 2, 2013

VIA EMAIL

Mr. R.E. Ramsey, Idaho Branch Office
U.S. Department of Energy, Naval Reactors
P.O. Box 2469
Idaho Falls, Idaho 83403-2469

RE: Naval Nuclear Propulsion Program (NNPP) EIS for Recapitalizing Naval Spent Nuclear Fuel Handling Capabilities of the Expended Core Facility (ECF) at the INL:
DEQ Review of Non-Radiological Air Quality Modeling (AERMOD only)

Dear Mr. Ramsey:

On April 4, 2013 the Department of Environmental Quality (DEQ) received a request for DEQ to review three modeling reports supporting the Draft EIS: 1) AERMOD dispersion modeling evaluating near-field impacts from criteria pollutants, state-regulated air toxics, and prevention of significant deterioration (PSD) air pollutants at public receptor locations on the INL and at nearby Craters of the Moon National Monument, 2) a screening assessment for PSD and visibility impacts at Federal Class I areas greater than 50 kilometers (km) away, with near-field visibility impacts modeled using VISCREEN, and 3) CALPUFF modeling for PSD impacts at Federal Class I areas more than 50 km away. On June 3, 2012, DEQ received electronic copies of the modeling files and emissions inventories.

DEQ's review was limited to an overview of the modeling approaches used for the near-field analyses, i.e., the AERMOD dispersion modeling described in item (1) above, in light of Idaho's approved State Implementation Plans (SIPs) applicable to stationary sources and regional haze. Requirements and guidance for Idaho's program are found in the regulations contained in IDAPA 58.01.01 (Idaho Air Rules),¹ policies described in Idaho's Air Quality Modeling Guideline,² and EPA user guides and guidance documents for AERMOD and its suite of supporting programs.³ The acceptability of ambient impact analyses for federal Class I areas (items 2 and 3) are determined by federal land managers (FLMs), typically with the National Park Service (NPS) serving in a lead role.

The modeling protocols and analyses have been reviewed and DEQ has the following comments:

Summary: Concerns were identified with regard to the modeling approach for roadways, reduction in plume concentrations through deposition for PM₁₀ and PM_{2.5}, and using outdated versions of AERMET for meteorological data processing. The analyses, however, appear to have substantially overestimated the total emissions of criteria pollutants that would be subject to evaluation under Idaho's approved SIPs, especially if new boilers and emergency diesel generators are purchased for the new construction alternatives rather than relocating existing older units.

¹ IDAPA 58.01.01, Rules for the Control of Air Pollution in Idaho, effective April 4, 2013, accessible at <http://adminrules.idaho.gov/rules/current/58/0101.pdf>

² State of Idaho, Guideline for Performing Air Quality Impact Analyses, Doc. ID AQ-011, rev. 2, July 2011, accessible at <http://www.deq.idaho.gov/media/355037-modeling-guideline.pdf>

³ U.S. Environmental Protection Agency, Technology Transfer Network, Support Center for Regulatory Atmospheric Modeling, <http://www.epa.gov/scram001/>

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In addition, all existing emergency generators at the INL were presumed to operate every day between the hours of 8 a.m. and 4 p.m. This is a very conservative approach for evaluating compliance with the 1-hr NO₂ NAAQS for these intermittent sources.

DEQ recommends reprocessing the meteorological data set used to model Scenario 6 (cumulative impacts) NO_x emissions using the most current version of AERMET and its supporting programs, adjust diesel engine generator emissions for the SFHP and EP new facility alternatives to reflect installing EPA-certified engines, and rerun Scenario 6 to confirm that the design value (8th high) 1-hr NO₂ ambient impacts are less than 188 µg/m³. The background ozone concentration should be set to at least 41.8 ppb (see Comment 9(e)). A cumulative analysis typically includes adding a background concentration to account for naturally-occurring emissions of pollutants (e.g., arid soils in sagebrush-steppe ecosystems are believed to be important sources of NO emissions⁴) as well as long-range transport from sources not explicitly modeled. Given the very conservative approach to modeling the intermittent sources, however, adding a “rural” 1-hr NO₂ background concentration of a few ppb does not seem reasonable.

Comment 1. Compliance with Idaho's approved SIP for Stationary Sources. The proposed project is located in an area that is unclassifiable or in attainment for all criteria pollutants and averaging times. Idaho does not require dispersion modeling of fugitive dusts from roadways unless the facility is located in a PM₁₀ or PM_{2.5} nonattainment area, is a designated facility per section 008 of the Idaho Air Rules, or the roadway dust is likely to be a large contributor to facility emissions during normal operations (e.g., at a mine site). Nor does Idaho require dispersion modeling of mobile source emissions for construction or operation of a stationary source.

In addition, Idaho's program does not require dispersion modeling for temporary emissions associated with construction activities (see Comment 10, Regional Haze SIP). Portable emissions sources used in construction, e.g., a concrete batch plant, hot-mix asphalt plant, or crusher, would be required to comply with enforceable limits contained in their own air quality permits, or in the case of a crusher, with Idaho's permit by rule (PBR) for nonmetallic mineral processing units. (Note that the PBR for crushing plants has not yet been approved as part of Idaho's SIP).

Comment 2. State-regulated Toxic Air Pollutants (TAPs). Idaho's allowable increments specified in sections 585 and 586 of the Idaho Air Rules for emissions of state-regulated TAPs apply only to *new emissions* of TAPs not previously emitted from a stationary source as a result of constructing or modifying a stationary source, and to the *increase in TAPs* emissions associated with a particular modification. There are no requirements to address facility-wide TAPs emissions for existing sources, nor are there requirements to include the impacts of TAPs from co-contributing sources. As noted in the next two comments, demonstration of compliance with Idaho TAPs increments is no longer required for TAPs emitted from boilers or engine generators located at the INL.

Comment 3. State-regulated Toxic Air Pollutants (TAPs) emitted from engine generators. Except for “existing” emergency generators in service at residential, commercial, or institutional facilities, DEQ has determined that all state-regulated toxic air pollutants (TAPs) emitted from diesel engine generators are regulated by a federal New Source Performance Standard (NSPS) and/or National Emission Standard for Hazardous Air Pollutants (NESHAP), because these engines are subject to 40 CFR 60, Subpart IIII (NSPS for new diesel engines) and/or 40 CFR 63, Subpart ZZZZ (area source MACT for pre-2006 engines). In accordance

⁴ Smart, David R., et al, Resource limitations to nitric oxide emissions from a sagebrush-steppe ecosystem, *Biogeochemistry* 47: 63-86, 1999, <https://www.biology.usu.edu/files/uploads/Faculty/Stark-J/Smart1999-Resource%20limitation%20to%20NO%20prod.pdf>

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with Section 210.20 of the Idaho Air Rules, no further demonstration of preconstruction compliance is required for these TAPs emissions.

Comment 4. State-regulated Toxic Air Pollutants (TAPs) emitted from boilers. DEQ has determined that all state-regulated toxic air pollutants (TAPs) emitted from boilers at area sources of HAPs are regulated by a federal New Source Performance Standard (NSPS) and/or National Emission Standard for Hazardous Air Pollutants (NESHAP), because these boilers are subject to emission limits and/or work practice standards contained in 40 CFR 63, Subpart JJJJJ (6J). In accordance with Section 210.20 of the Idaho Air Rules, no further demonstration of preconstruction compliance is required for these TAPs emissions.

Comment 5. Emissions Increase.

- a. The increase in emissions for this project was calculated using baseline actual emissions based on the maximum yearly operational times and emissions during the years 2005-2009. This is a quite conservative approach. Baseline actual emissions, as defined in section 007 of the Idaho Air Rules, are typically calculated based on a consecutive 24-month period.
- b. For a new emissions unit (e.g., new boilers and generators installed if “new SFHP” and/or “new EP” are the alternatives selected), the baseline actual emissions for purposes of determining the emissions increase that will result from the initial construction and operation of such unit shall equal zero (0); and, thereafter, for all other purposes, shall equal the unit’s potential to emit (PTE). DEQ was unable to determine whether the scaling factors used to estimate projected actual boiler and diesel generator emissions were based on the ratings of the “new” boilers or generators.
- c. Based on EPA guidance⁵, PTE for emergency generators should be set to 500 hours per year, which includes routine testing and maintenance (limited to a maximum of 100 hours per year for engines subject to NSPS IIII or JJJJJ and/or NESHAP ZZZZ), as well as emergency operations.
- d. Existing and new diesel emergency engine generators subject to NSPS IIII and/or NESHAP ZZZZ are restricted to using ultra-low sulfur diesel (ULSD) fuel containing a maximum 0.0015% S. The AP-42 value used for sulfur emissions of small diesel engines (0.29 lb/MMBtu) should be multiplied by a factor of $(0.0015\%)/(0.5\%) = 0.003$ to reflect this fuel standard.
- e. New diesel emergency engine generators will be subject to NSPS IIII and will be required to be EPA certified. These generators can be expected to have much lower criteria pollutant emissions compared to the pre-1990 diesel generators currently installed at NRF (e.g., 90% or greater reduction in PM₁₀ /PM_{2.5} emissions).
- f. Concrete batch plant emissions for this project presumed no controls for silo-filling or truck loading of cement (emission factors of 0.47 lb PM₁₀ and 0.31 lb PM₁₀ per ton loaded, respectively). In practice, emissions from vents on cement and cement supplement (e.g., flyash, lime) silos are controlled by cartridge filters on the vents or emissions are routed to a baghouse (emission factor of 0.00034 lb PM₁₀ per ton of cement, 0.0089 lb PM₁₀ per ton of supplement), and truck loading typically includes the use of a boot or similar enclosure to reduce loss of fine materials (approximately 75% control).

For the ratio of cement to cement supplement presumed in AP-42 (1865 lbs coarse aggregate, 1428 lbs sand, 491 lbs cement, 73 lbs supplement, and 20 gallons of water =

⁵ U.S. EPA, Calculating Potential to Emit (PTE) for Emergency Generators, John S. Seitz, September 6, 1995, <http://www.epa.gov/region07/air/title5/t5memos/emgen.pdf> and Steven C. Riva (EPA) to William O’Sullivan (NJ DEP), February 14, 2006, <http://www.epa.gov/region07/air/nsr/nsrmemos/generator.pdf>.

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total 4024 lbs per cubic yard of concrete, the emission factor for cement and supplement silo filling can be estimated as:

$$\text{Silo: } 0.00034 \times 491/(491+73) + 0.0089 \times 73/(491+73) = 0.0015 \text{ lb PM}_{10} \text{ per ton loaded}$$

The controlled emission factor for truck loadout can be estimated as:

$$\text{Truck Loadout: } 0.31 \times (1-0.75) = 0.08 \text{ lb PM}_{10} \text{ per ton loaded}$$

Applying these more realistic assumptions reduces PM emissions from silo filling and truck loadout as follows:

	<u>PM₁₀ (tons/yr)</u>	<u>PM_{2.5} (tons/yr)</u>
Uncontrolled emissions (modeled for this project)		
Silo Filling	33.6	6.7
Truck loading	22.2	4.4
	55.8	11.1
Controlled emissions		
Silo Filling	0.11	0.02
Truck/Mixer loading	5.7	1.15
	5.8	1.2

- g. MOBILE 6.2 used for mobile source emissions. As noted in the transmittal letter for the non-radiological air quality modeling reports,⁶ EPA recommended in 2011 that MOVES2010a should be used for criteria pollutant impacts from vehicle emissions in NEPA documents, with a two-year grace period for implementation ending in December 2012. NNPP is proposing to carry the MOBILE 6.2 emissions through for this project, although the Draft EIS is not expected to be issued for public comment until 2014, stating that the “[o]n-road emissions estimated for the construction time-frame are small and use of a different model should not impact concentrations at public receptor locations.” Additional discussion should be provided to support this assertion.

EPA’s comparison of MOVES2010a and MOBILE 6.2 emission estimates⁷ suggests that MOVES2010a emissions of NO_x from both light-duty and heavy duty trucks are higher, PM_{2.5} emission estimates are significantly higher for both light- and heavy-duty vehicles, and PM emission rates for heavy duty trucks are higher due to including deterioration effects and additional information regarding emissions for stop-and-go conditions.

- Comment 6. Increases in emissions that would be subject to requirements under Idaho’s SIP-approved Stationary Source program for normal operation of the three SFHP alternatives plus either overhauling or constructing a new EP are shown in Table 1. Crusher emissions have also been included in the table because the PBR for such plants is not yet part of Idaho’s approved SIP.

⁶ R.E. Ramsey to Susan Burke, Non-Radiological Air Quality Modeling for Recapitalization of Infrastructure Supporting Naval Nuclear Fuel Handling Draft Environmental Impact Statement, NR:IBO-13/054, April 4, 2013

⁷ How do MOVES2010 or MOVES2010a emission estimates compare to those of MOBILE 6.2?, accessible at <http://moves.supportportal.com/link/portal/23002/23024/Article/32001/How-do-MOVES2010-or-MOVES2010a-emission-estimates-compare-to-those-of-MOBILE6-2>

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Table 1. EMISSIONS INCREASE IN CRITERIA POLLUTANTS^a						
Alternatives:	No Action	Overhaul SFHP & Overhaul EP	New SFHP & Overhaul EP	New SFHP & New EP	Crusher, Total (Years 2016-2018)	"Below Regulatory Concern"
	Pollutant:	Emissions Increase (Ton/yr)	Emissions Increase (Ton/yr)	Emissions Increase (Ton/yr)	Emissions Increase (Ton/yr)	Emissions Increase (Ton/yr)
SO ₂ , presumed = SO _x	- 0 -	- 0 -	0.053	0.056	---	4
NO ₂ , presumed = NO _x	- 0 -	- 0 -	6.3	6.7	---	4
CO	- 0 -	- 0 -	1.6	1.7	---	10
PM ₁₀	- 0 -	- 0 -	0.58	0.62	2.06	1.5
PM _{2.5}	- 0 -	- 0 -	0.40	0.43	0.32	1.0
Lead	- 0 -	- 0 -	3.2E-04	3.4E-04	---	6.0E-02
Sulfuric acid mist	- 0 -	- 0 -	9.3E-04	9.9E-04	---	0.7

^a Increases in emissions taken from Fuel Combustion Emissions_NNPP_EIS.xlsx and crushing emissions are from Construction Emissions_SFHP_NRF Area 6 (06-13-2011).xlsx. For the purposes of Table 1, crushing emissions for the three-year period 2012-2018 are presumed to occur during a single year.

As shown in the table, the increased emissions of criteria pollutants for the alternatives considered are well below ten percent of the significant emissions rate for all criteria pollutants except for NO₂, and with the inclusion of crushing emissions, PM₁₀.

Significant Impact Levels (SILs)/Significant Contribution Levels (SCLs). The PM_{2.5} 24-hour and annual significant impact levels SILs were vacated and remanded by the D.C. Circuit U.S. Court of Appeals in a decision issued on January 22, 2013. This decision most directly affects "major" projects subject to the Prevention of Significant Deterioration (PSD) program. For minor source permitting, DEQ has determined the vacated SILs will still be used as a screening tool to evaluate when a cumulative impact analysis must be performed, but a SIL will not be used exclusively as a level below which impacts of a new source or modification can be considered as not causing or significantly contributing to a PM_{2.5} NAAQS violation.

Additional considerations used to evaluate the need for a cumulative impact analysis will include the following: 1) other potentially co-contributing sources in the area; 2) background concentrations for the area impacted; 3) results of the SIL analysis in relation to other sources and background concentrations; 4) presence of sensitive receptors in the area such as residences, schools, hospitals, parks, etc.

DEQ has determined that there are no large sources of emissions located near the NRF, background concentrations at the INL are well below the applicable NAAQS, and there are no sensitive human receptors in the immediate vicinity of the NRF. If the high 1st high ambient impact for a pollutant and averaging time is less than the SIL (called the significant contribution level, or SCL, in the Idaho Air Rules), a cumulative impact/full-impact analysis would not be required for that pollutant and averaging time.

Comment 7. Use of AERMOD version 11103. DEQ requires that dispersion modeling analyses be conducted with the most current version of AERMOD (see section 6.2 of Idaho's modeling guideline). The near-field modeling analyses for this project used AERMOD version 11103, which was released on April 13, 2011. Three more versions of AERMOD were released before the dispersion modeling was completed in January 2013:

- Version 11353, released December 19, 2011, incorporated bug fixes to the MAXDCONT option for urban applications, modified subroutine OUTQA to correct erroneous error message if PLOTFILE was the only relevant option used with the FILEFORM keyword, modified subroutine O3VALS to correct the test for the number

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of parameters to allow for the ANNUAL option, modified subroutine METEXT to increment the hour index and year index if the MAXDCONT option is used, and modified subroutine PRTO3VALS to use the O3FLAG variable that identifies the user-specified option for defining temporally-varying background ozone concentrations.

- Version 12060, released February 29, 2012, incorporated bug fixes to the MAXDCONT_LOOP and O3READ subroutines, and to subroutine LTOPG (determines the stability-dependent distance for transitioning to a virtual point source approximation for area sources under the FASTAREA or FASTALL options). Enhancements included modifying subroutines to allow defining all sources as urban, and to allow the user to specify the number of years of met data being processed for a particular run (reduces memory storage requirements), eliminated the arrays of profile met data by hour-of-year, level, and year for use with the MAXDCONT option (reduces memory storage requirements), and modified subroutine OUMAXD_CONT to include checks that ensure the range of ranks specified is at least equal to the design value rank plus four for the specified pollutant.
- Version 12345, released December 10, 2012, incorporated bug fixes to wind speed adjustments based on the assumption that input wind speeds that are vector (or resultant) mean winds have been removed, as scalar mean wind speeds are preferred for use in steady-state Gaussian dispersion models. Winds collected at National Weather Service (NWS) and Federal Aviation Administration (FAA) ASOS sites represent scalar mean wind speeds. An option was added to allow the user to specify that input winds are vector mean wind speeds. Subroutine HRLOOP was modified to correct a problem with missing hourly ozone data during MAXDCONT post-processing.

Modified subroutines DAYRNG, METEXT, and SET_DATES to correct a bug associated with use of the DA YRANGE keyword for multiple years of met data, where the YR/MN/DY conversion to Julian may be incorrect. Modified subroutine HRQREAD to check for large negative hourly emissions (< -90), which may be used as missing indicators. Since AERMOD allows inputs of negative emissions for use in emission credit calculations, negative values used as missing indicators in the HOUREMIS file result in negative hourly concentrations in previous AERMOD versions. Warning messages are generated and the emission rate is set to zero (0) for these cases.

Modified subroutine EVALFL to address a potential problem with URBAN applications where the L_MorningTrans logical variable was not defined. Modified MAIN program and subroutine PRESET to check for duplicated STARTING keywords on the SO or RE pathways, since that would reset the array limits for setup arrays to zero during the PRESET phase, resulting in array subscript out-of-bounds runtime errors.

Enhancements included incorporating two new BETA (non-Default) options to address concerns regarding model performance under low wind speed conditions.

Date stamps in the AERMOD files for this project indicate that these analyses were completed on various dates during the period between August 2011 and January 2013. The modeling report confirms that there were no differences in modeled design concentrations produced by AERMOD versions 11103 and 12060 for emissions of PM₁₀, PM_{2.5}, CO, 1-hr NO_x, NOxSOx (annual), and lead from the NRF boilers. The analyses for this project used met data based on scalar mean wind speeds, rural rather than urban default values, and did not make use of hourly emissions input files or the MAXDCONT option, i.e., the analyses did not use some of the AERMOD subroutines that were modified over the course of this project. The analyses did, however, make use of the FASTALL/FASTAREA option as well.

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as inputting a background ozone value for PVMRM analyses for 1-hr NO₂ for some sources. Additional discussion should be provided to discuss whether AERMOD v. 12060 would have produced the same results as AERMOD v. 11059 when using these two options.

Comment 8. Use of meteorological data processed using AERMET v. 06341. A newer version of AERMET was available prior to commencement of modeling for this project in August 2011:

- AERMET version 11059 was released on February 28, 2011, which incorporated bug fixes to calculate hourly averages using the “hour-ending” instead of the “hour-beginning” convention, corrected the procedure for calculating hourly averages from subhourly values for sigma-theta, corrected processing of subhourly wind data to properly code hours as calm when more than half of the samples for the hour are non-missing but below the wind threshold, corrected several issues associated with the extraction of ONSITE data that could result in erroneous values being assigned to ONSITE variables, improved error handling and reporting for the processing of ONSITE data, corrected problems associated with processing ONSITE precipitation data, including the fact that subhourly precipitation values were averaged rather than summed to determine the hourly value, and that negative values were also included in the summed value (before averaging) if the missing data code was not properly specified, corrected a problem with the SUBNWS option to avoid using the BULKRN (bulk Richardson Number) option using ONSITE delta-T data when the ONSITE winds are missing and the reference winds are based on SURFACE data. Vertical profiles of ONSITE temperatures, sigma-theta, and sigma-w are also skipped if the reference winds are based on SURFACE data. These changes are intended to avoid internal inconsistencies in the characterization of the boundary layer that may occur with some combinations of SURFACE and ONSITE data.

The modeling report states that met processing was restricted to AERMET v. 06341 because the Idaho Falls Regional Airport data for 2000-2004 provided by DEQ were in SAMSON format (which is not compatible with AERMET v. 11059). This is not a valid reason for using an outdated version of AERMET, as National Weather Service (NWS) surface data collected at the Idaho Falls Airport could easily have been downloaded in the appropriate format (TD-3505) from the Integrated Surface Database ftp site⁸ or ordered from the National Climatic Data Center (NCDC).

The modeling report should discuss whether hourly or subhourly data was obtained for the four INL met towers (GRID3, LOFT, EBR, and RWMC) used as “onsite” met for project dispersion modeling, and identify whether these data meet minimum 90% completeness requirements. If subhourly data were obtained, the report should discuss how these data were handled, and whether/how the bugs identified in AERMET v. 06341 for processing subhourly ONSITE data may have affected the dispersion modeling results.

The description of the upper air data collected at the Boise Airport (KBOI) should include whether the available data were downloaded for “all levels,” or “mandatory and significant” levels, to ensure adequate resolution of the vertical profile. The use of upper air data based on “mandatory levels only” is not acceptable for AERMOD modeling applications.

Comment 9. Modeling approach.

- a. The “chi-over-Q” approach used in the modeling analyses provides quite conservative estimates of the maximum ambient air impacts. Using this approach, the maximum

⁸ National Climatic Data Center, NOAA Satellite and Information Service, Integrated Surface Database (ISD), accessible at <ftp://ftp.ncdc.noaa.gov/pub/data/noaa/>, Idaho Falls Regional Airport (KIDA) = 725785 24145

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modeled ambient impacts (design values) from any source are added to the maximum modeled impacts from all other sources at each receptor without regard to when those maxima occurred.

- b. Dispersion modeling for PM₁₀ and PM_{2.5} included reductions in the plume concentrations due to deposition. DEQ's understanding is that this approach was discussed in advance and approved by John Notar at the National Park Service. While this is a reasonable approach for estimating potential impacts to soils and vegetation, deposition should not be included in modeling for comparison with National Ambient Air Quality Standards (NAAQS) or state-regulated TAPs standards.
- c. Polygonal area source (AREAPOLY) used to model roadway emissions. Roadway emissions were modeled as a single thin polygon comprising Highway 20 from the eastern boundary of the INL to the intersection with Main Street (about 7.1 miles/11.4 km), then north on Main Street to Lincoln Boulevard, extending northward along Lincoln Boulevard to the NRF (about 9.2 miles/14.8 km).

For the AREAPOLY option, EPA guidance⁹ notes "the numerical integration algorithm can handle elongated areas with aspect ratios of up to 10 to 1." Although the width of the polygon source varies, the polygon is about 400 meters wide along most of the roadway lengths. If the east-west and north-south areas had been split into two polygons, the aspect ratio for the Hwy 20 area source would be about 29:1 and the north-south polygon aspect ratio about 37:1. The modeling report should explain in some detail whether the integration algorithm is adequate or appropriate for approximating emissions from these roadways as a single AREAPOLY source.

- d. NO₂ emissions from diesel generators were modeled as occurring every day for all hours between 8 a.m. to 4 p.m. This is a very conservative approach for demonstrating compliance with the 1-hr NO₂ NAAQS for these intermittent sources. For example, the operational time for current emissions from the NRF diesel engines is shown in the spreadsheet at 66.1 hours with total NOx emissions of 3.85 g/sec (30.6 lb/hr). This appears to be consistent with routine testing on a weekly or less frequent basis, with few or no cases of operation due to loss of offsite power.
- e. The ozone background value used for Level 3 (PVMRM) modeling for 1-hr NO₂ ambient impacts was set to 30 ppb based on a study conducted in the Treasure Valley during the 2007 ozone season. Year-round ozone monitoring at Craters of the Moon, however, suggests that background ozone levels near the INL may be considerably higher than in the Treasure Valley. The 3-year average of the 98th percentile ozone value for the years 2009–2011 is 65.7 $\mu\text{g}/\text{m}^3$ ¹⁰. The 3-year average of the mean ozone values for the same period is 41.8 ppb.

Comment 10. Compliance with Idaho's Regional Haze SIP. The Idaho Air Rules incorporate only sections 301, Definitions; 304(a), Identification of integral vistas by FLMs; 307, New Source Review for major sources and major modifications; and 308, Regional haze program requirements, of 40 CFR 51, Protection of Visibility. Idaho's Regional Haze SIP¹¹ details baseline visibility, pollutants of particular concern, source apportionment, and long-term strategies to improve visibility in mandatory Class I areas.

⁹ U.S. EPA, User's Guide for the AMS/EPA Regulatory Model – AERMOD, EPA-454/B-03-001, September 2004, aermod_userguide_under-revision.pdf, contained in the User's Guide Addendum zipped file accessible at http://www.epa.gov/ttn/scram/dispersion_prefec.htm

¹⁰ EPA, Technology Transfer Network (TTN) Air Quality System (AQS), zipped files for 2009–2011, Parameter: Ozone (44201) – hourly, extracted data for Monitor No. 16-023-0101 (Craters of the Moon), accessible at <http://www.epa.gov/ttn/airs/airsaqs/detaildata/downloadaqsdata.htm>

¹¹ State of Idaho, Department of Environmental Quality, Regional Haze Plan, October 8, 2010, accessible at <http://www.deq.idaho.gov/air-quality/air-pollutants/haze.aspx>

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Facilities located within the INL are not subject to Prevention of Significant Deterioration (PSD) requirements for any criteria pollutant. Analyses for impacts to visibility at mandatory Class I areas, including nearby Craters of the Moon National Monument, are therefore not required for this project under Idaho's approved program for stationary sources.

Long-term strategies for reducing visibility impacts are described in Idaho's Regional Haze Plan, and include measures to mitigate the impacts of construction activities. These measures are codified in sections 650 and 651 of the Idaho Air Rules, which require all reasonable precautions be taken to prevent particulate matter from becoming airborne. In determining what is reasonable, the rules specifically identify activities and "the proximity to mandatory Class I Federal Areas" as factors to be considered. "Reasonable" measures to control fugitive dust from the proposed project must in particular consider the close proximity to nearby Craters of the Moon National Monument and the Sawtooth Wilderness Area.

Crushing and screening activities are subject to section Idaho Air Rules section 795, Permit by Rule Requirements for nonmetallic mineral processing plants, which include fuel sulfur and opacity limits for engine generators (note these limits are superseded by more stringent requirements for engines subject to 40 CFR 60, Subpart IIII or JJJJ and/or 40 CFR 63, Subpart ZZZZ), and fugitive dust best management practices contained in Idaho Air Rules section 799.

As noted in the Regional Haze Plan, nitrates and sulfates appear to have a greater impact than coarse particulate matter on visibility at Craters of the Moon. Nitrate and sulfate aerosols are also PM_{2.5} precursors, although PM_{2.5} was not specifically addressed in the 2010 plan. Small reductions in sulfate and nitrate are expected to have a greater impact on visibility improvement at Craters than similar reductions in PM₁₀. Efforts to reduce the production of nitrates and sulfates during construction activities should be considered, e.g., use ultra-low sulfur diesel (ULSD), limit engine idling, provide line power for temporary offices and site lighting wherever possible, and limit the use of non-EPA certified engines for powering construction equipment and lighting.

If you have any questions regarding these comments, please don't hesitate to contact me.

Sincerely,

Cheryl Robinson

Cheryl A. Robinson, P.E.
NSR Modeling Analyst, Air Quality Division

cc: Robert E. Ramsey, robert.ramsey@unnpp.gov
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Bruce Louks, Manager, MMEI, bruce.louks@deq.idaho.gov
Kevin Schilling, MMEI/NSR Modeling Coordinator, kevin.schilling@deq.idaho.gov



DEPARTMENT OF ENERGY

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NR:IBO-14/049
March 11, 2014

Cheryl A. Robinson, P.E.
NSR Modeling Analyst, Air Quality Division
State of Idaho Department of Environmental Quality
1410 North Hilton
Boise, ID 83706

SUBJECT: DOCUMENTATION OF CHANGES TO NON-RADIOLOGICAL AIR
QUALITY MODELING IN THE FINAL ENVIRONMENTAL IMPACT
STATEMENT FOR THE RECAPITALIZATION OF
INFRASTRUCTURE SUPPORTING NAVAL SPENT NUCLEAR
FUEL HANDLING

- REFERENCES:
- (a) INL/LTD-12-26728. Rood, A.S. "Evaluation of Criteria, Toxic, and Prevention of Significant Deterioration (PSD) Air Pollutant Emissions for the Expended Core Facility Recapitalization Environmental Impact Statement." Idaho National Laboratory, Idaho Falls, Idaho. January 2013.
 - (b) State of Idaho Department of Environmental Quality. Naval Nuclear Propulsion Program (NNPP) EIS for Recapitalizing Naval Spent Nuclear Fuel Handling Capabilities of the Expended Core Facility (ECF) at the INL: DEQ Review of Non-Radiological Air Quality Modeling (AERMOD only). Letter from C. A. Robinson, P.E. (DEQ) to R.E. Ramsey (IBO), dated August 2, 2013.

Dear Ms. Robinson:

This letter documents our discussion on February 6, 2014, regarding comments that were made by the Idaho Department of Environmental Quality (IDEQ) on the Naval Nuclear Propulsion Program (NNPP) non-radiological air quality modeling report (Reference (a)). Reference (a) was prepared to support the assessment of impacts to non-radiological air quality in an Environmental Impact Statement (EIS) that is being drafted by the NNPP. The Draft EIS addresses recapitalizing the spent fuel handling capabilities of the Expended Core Facility at the Idaho National Laboratory (INL). IDEQ comments on reference (a) were received in reference (b).

Based on the NNPP review of IDEQ comments and discussion with you, we concluded that several of the comments were applicable to future actions to obtain appropriate air

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permits once it has been decided whether a new facility will be constructed and after any such facility has been designed. Some comments were concluded to be directed at the EIS; however, the Draft EIS is expected to go to printing soon. The NNPP will address those comments in the Final EIS rather than delay publication of the Draft EIS.

During the teleconference on February 6, 2014, we discussed which comments were applicable to the EIS and which would apply to future air permitting actions. In addition, we discussed the NNPP plan to address those comments directed at the EIS in the Final EIS. This letter documents the agreements that were made during the teleconference. Note that reference (b) and this letter will be included in Appendix B of the Draft EIS to document the NNPP consultations with IDEQ.

Background and Discussion

Reference (a) contains an evaluation of impacts from criteria, toxic, and prevention of significant deterioration (PSD) air pollutants at INL public receptor locations, along with an evaluation of criteria and PSD air pollutant impacts at near field (less than or equal to 50 kilometers from the source) receptor locations for Craters of the Moon National Monument. AERMOD, Version 11103, with meteorological data processed through the AERMET preprocessor, Version 06341, was used to model pollutant concentrations at receptor locations. For the project construction period, on-road vehicle (e.g., commuting and material deliveries) emissions were estimated using MOBILE 6.2.

Comments Requiring No Changes to the EIS

During the teleconference, it was agreed that IDEQ comments 1-5f, 6, 9a, 9c-e, and 10 in reference (b) were directed towards future air permitting actions if a new facility were to be designed and constructed. These comments included IDEQ recommendations for reducing the conservatisms in emissions estimates and in the modeling protocol that would be used in any future air permitting evaluations. IDEQ agreed that the conservative methods and modeling protocol that were used in reference (a) were appropriate for bounding impacts for the EIS.

Comments Requiring Changes to the EIS

IDEQ comments 7 and 8 in reference (b) regarded the use of outdated versions of AERMOD and AERMET in reference (a). IDEQ acknowledged the NNPP concern that model versions change frequently, and re-running complicated models each time there is a change is not necessary for an EIS which is comparing the relative impacts of different alternatives and is being developed over a multi-year time period. IDEQ agreed that it would be sufficient for the EIS to provide acknowledgement of the version updates to AERMOD and AERMET and provide a sensitivity analysis between the versions used and version 12345 to show if there would be significant differences in the

C. A. Robinson, P. E.
Idaho Department of Environmental Quality

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modeled pollutant concentrations at receptor locations. IDEQ pointed out that the latest version (13350) of AERMOD and AERMET should not be used due to issues that have been identified by the Environmental Protection Agency (EPA) with the updates. The NNPP proposed doing this sensitivity analysis for Scenario 6 (cumulative impacts) from reference (a) for 1-hour NO₂ ambient impacts. This represents the worst-case scenario for air quality impacts in the EIS. IDEQ agreed to this approach. A statement on meteorological data completeness will also be added to the Final EIS to address comment 8. The sensitivity analysis and statement on data completeness will be added to Appendix E in the Final EIS.

IDEQ comment 5g in reference (b) regarded the use of MOBILE 6.2 instead of MOVES2010a to estimate on-road vehicle emissions. MOVES2010a is the current model required for use by the EPA. IDEQ pointed out that the emissions estimates for on-road vehicles would be greater using MOVES2010a compared to MOBILE 6.2. However, the modeling of pollutant concentrations from on-road vehicle emissions during the construction period used conservative assumptions and these emissions are not subject to IDEQ permitting. IDEQ agreed that it would be sufficient for the EIS to use the analysis in reference (a), but include a sensitivity analysis between use of MOBILE 6.2 and MOVES2010a to show that the differences would not be significant, rather than re-running the entire analysis for the construction scenario. This sensitivity analysis will be included in Appendix E in the Final EIS.

IDEQ Comment 9b in reference (b) concerned the use of PM_{2.5} and PM₁₀ deposition in dispersion modeling. IDEQ stated that PM_{2.5} and PM₁₀ deposition should not be used in air permit application modeling calculations. IDEQ recommended that a note be included in the EIS that the PM_{2.5} and PM₁₀ concentrations would be higher assuming no deposition, however, the concentrations would still be below the standards. A sensitivity analysis will be performed for Scenario 6 (cumulative impacts) from reference (a) for PM_{2.5} and PM₁₀ without deposition to show that concentrations would be below the standards. This will be provided in Appendix E in the Final EIS.

In summary, IDEQ agreed that comments 1-5f, 6, 9a, 9c-e, and 10 in reference (b) did not require any change to the EIS, and that comments 7, 8, 5g, and 9b would be addressed (as described above) in the Final EIS.

Thank you for your comments and please do not hesitate to contact me at (208) 533-5363 if you have any questions or comments regarding the air quality modeling in the EIS.



R. E. Ramsey
Idaho Branch Office

C. A. Robinson, P. E.
Idaho Department of Environmental Quality

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March 11, 2014
Page 4

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NRLFO:IBO-16/031
February 18, 2016

Kevin Shilling
Air Quality Division
Department of Environmental Quality
1410 North Hilton
Boise, Idaho 83706

**SUBJECT: REVISED CONSTRUCTION EMISSIONS AND AIR QUALITY
MODELING PROTOCOLS FOR FINAL ENVIRONMENTAL IMPACT
STATEMENT, DOE/EIS-0453-F**

Dear Mr. Schilling:

1. The Naval Nuclear Propulsion Program (NNPP) prepared a Draft Environmental Impact Statement (Draft EIS) for recapitalizing the Expended Core Facility (ECF) spent fuel handling capabilities at the Naval Reactors Facility (NRF) (DOE 2015). The Draft EIS contained evaluations of non-radiological air emissions to determine impacts to air quality. Subsequent to publishing the Draft EIS, the New Facility Alternative construction parameters changed appreciably based on updated design and construction information; the changes affected inputs to the air quality models. As a result, the NNPP determined the air quality impacts for construction would need to be remodeled using updated emissions.
2. Bechtel Marine Propulsion Corporation (BMPC) briefed the Idaho Department of Environmental Quality (IDEQ) on the changes to construction emissions and the modeling protocols in a teleconference with you on November 5, 2015. During the call, the following agreements were made:

- a. The air quality model (AERMOD) meteorological data set would be the same as used in the modeling for the Idaho National Laboratory (INL) site wide Permit to Construct with Facility Emission Cap, but the data would be processed using the latest version of AERMET.
- b. The same road and boundary receptors that were used in the Draft EIS would be used for the revised construction modeling.
- c. The list of toxic emissions evaluated for construction in the Draft EIS would be acceptable for the revised analysis (e.g., hexavalent chromium as a component of fly ash would not be needed because it is a trivial source).

K. Shilling, IDEQ

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- d. The use of standard AP-42 emission factors was an acceptable approach for estimating emissions.
 - e. The revised model would include controls on batch plant operations, which will significantly reduce emissions.
 - f. The latest versions of AERMOD and AERMET would be used to model construction air quality impacts.
 - g. MOVES2014 would be used to estimate on- and off-road vehicle emissions.
 - h. Construction phases would be used to eliminate overlap in time of emission estimates and model runs where appropriate
3. During the teleconference, BMPC agreed to provide IDEQ the revised construction emissions and the revised AERMOD modeling protocol for review prior to publishing the Final EIS.
4. The sensitivity analyses requested by IDEQ based on their review of the Draft EIS modelling reports were also discussed during the teleconference. A description of the expectation for these analyses was included in Appendix B of the Draft EIS and included:
- a. Use of the recent version of the AERMOD/AERMET model compared to the older version used in the Draft EIS analysis for 1-hour NO₂ ambient impacts for cumulative operations to evaluate if there would be significant differences in the modeled pollutant concentrations at receptor locations
 - b. Development of a statement on meteorological data completeness
 - c. A comparison of MOVES2010a compared to MOBILE6.2 for on-road vehicle emissions during construction to demonstrate the differences would not be significant
 - d. A comparison of particulate matter (PM) concentrations at receptor locations, with and without deposition for cumulative operations, to show that concentrations would be below the standards
5. Based on the use of MOVES2014 in the revised construction analysis, the teleconference participants agreed that the sensitivity analysis between MOBILE 6.2 and MOVES2010, documented in Appendix B of the Draft EIS, would not be required for the Final EIS. The remaining two sensitivity analyses for operations (comparison of 1-hour NO₂ concentrations with different versions of AERMOD, and PM10 and PM2.5 with and without deposition) and the statement on meteorological data completeness documented in Appendix B of the Draft EIS will be included in Appendix E of the Final EIS. During the teleconference, BMPC agreed to provide the results of the two

K. Shilling, IDEQ

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sensitivity analyses to IDEQ along with the revised construction emissions and revised AERMOD modeling protocol.

6. The revised construction emissions and modeling protocols for AERMOD, CALPUFF, and VISCREEN are provided in Enclosure (1). The sensitivity analyses report is provided in Enclosure (2). Additionally, the Microsoft Excel® files with the emission calculations are transmitted with this letter as follows:

- a. SFHP Construction Air Emissions – Activity on Exposed Soil (01-19-2016).xlsx
- b. SFHP Construction Air Emissions – Fuel Combustion (12-17-2015).xlsx
- c. SFHP Construction Air Emissions – Concrete Batch Plant (12-08-2015).xlsx
- d. SFHP Construction Air Emissions – Wind Erosion (12-14-2015).xlsx
- e. RoadSourceSummary_01-19-16.xlsx

Please do not hesitate to contact me if you have any questions, comments, or need additional information at (208) 533-5759. I will follow-up with you the first week in March to discuss any concerns you might have regarding the revised construction emissions, modeling protocols, and sensitivity analyses.



James S. Mathus
Compliance Program Manager
Naval Reactors, Idaho Branch Office

Enclosures: As stated

Copy to:

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D. Bray, EPA – Region 10 (cover letter only)
S. Burke, IDEQ
T. L. Perkins, DOE-ID
T. J. Safford, DOE-ID

K. Shilling, IDEQ

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February 18, 2016
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From: Kevin.Schilling@deq.idaho.gov [mailto:Kevin.Schilling@deq.idaho.gov]
Sent: Wednesday, April 27, 2016 3:02 PM
To: Mathus, James <James.Mathus@nrp.doe.gov>
Cc: Bruce.Louks@deq.idaho.gov; Susan.Burke@deq.idaho.gov
Subject: Review of the Draft EIS for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling at INL

Mr. Mathus,

The DEQ Stationary Source Air Modeling Group at Idaho DEQ appreciated the opportunity to review and comment on the Draft EIS for the Recapitalization of Infrastructure Supporting Naval Spent Fuel Handling at INL. We also appreciate the response to our comments as stated in your February 18, 2016 letter to me, including the attached Technical Memorandum: Air Emissions and Modeling Protocols for Evaluation of Construction Impacts to Air Quality for the Final Environmental Impact Statement for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling.

The DEQ Stationary Source Air Modeling Group's comments have been adequately addressed and we have no further comments regarding air quality impacts of the project as described in the EIS.

Best Regards,

Kevin Schilling

Stationary Source Air Modeling Coordinator
Idaho Department of Environmental Quality
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Department of Energy

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NR:IBO-13/055
April 04, 2013

Andrea Stacy
NPS Air Resources Division
Permitting and NEPA
PO Box 25287
Denver, Colorado 80225-0287

**SUBJECT: NON-RADIOLOGICAL AIR QUALITY MODELING FOR
RECAPITALIZATION OF INFRASTRUCTURE SUPPORTING NAVAL
NUCLEAR FUEL HANDLING DRAFT ENVIRONMENTAL IMPACT
STATEMENT**

Dear Ms. Stacy:

The U. S. Department of Energy (DOE) Office of Naval Reactors is seeking coordination with your office on three air quality modeling reports that describe protocols and results for Prevention of Significant Deterioration (PSD) pollutant and visibility impacts at Federal Class I Areas. The Naval Nuclear Propulsion Program (NNPP) is preparing an Environmental Impact Statement (EIS) for recapitalizing the naval spent nuclear fuel handling capabilities of the Expended Core Facility (ECF) at the Idaho National Laboratory (INL). The EIS will contain an analysis of impacts on air quality at Federal Class I Areas in the vicinity of the INL. The EIS analysis will be based on the three air quality modeling reports, which were generated to support the National Environmental Policy Act (NEPA) process.

The NNPP proposes to recapitalize the infrastructure for preparing, examining, and packaging naval spent nuclear fuel and other irradiated materials, to ensure these capabilities are maintained for the vital NNPP mission of supporting the naval nuclear-powered fleet. The recapitalization is expected to be carried out as two parts. The first part would be the recapitalization of infrastructure supporting naval spent nuclear fuel handling, which includes the Spent Fuel Handling Recapitalization Project; the second part would be the recapitalization of infrastructure supporting naval spent nuclear fuel examinations.

Andrea Stacy,
NPS Air Resources Division

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Page 2

This coordination was first initiated in October 2011 following publication of a Notice of Intent (NOI) for the project in 2010. Since then, personnel from Naval Reactors Facility (NRF) and Battelle Energy Alliance (BEA) have been in contact with John Notar who was identified as the National Park Service (NPS) contact for technical modeling questions. Mr. Notar provided information and NPS expectations for air quality analysis at Federal Class I Areas.

Due to changes in EIS scope and overall ECF Recapitalization Project funding and timeline, coordination was postponed until an amended NOI was published in the Federal Register.

An amended NOI was published in the Federal Register on May 10, 2012. The purpose of the amended NOI was to announce the NNPP's intent to reduce the scope of the EIS to include only the recapitalization of naval spent nuclear fuel handling capabilities. Interfaces and exchanges between recapitalization of naval spent nuclear fuel handling and examination capabilities will be factored into designs, to ensure that both parts can be carried out in an environmentally responsible and cost effective manner. The recapitalization of examination capabilities will be considered as a reasonably foreseeable future action in the cumulative impacts of the EIS for the recapitalization of naval spent nuclear fuel handling capabilities. Therefore, the recapitalization of examinations capabilities was retained in air quality modeling reports. Three alternatives will be analyzed in the EIS:

1. Maintain ECF without a change to the present course of action or management of the facility. Spent fuel handling capabilities of ECF would continue to use the current ECF infrastructure while performing corrective maintenance and repairs necessary to keep the infrastructure in good working order (i.e., actions sufficient to sustain the proper functioning of structures, systems, and components). (No Action Alternative)
2. Overhaul ECF by implementing major refurbishment projects for the ECF infrastructure and water pools to provide the needed long-term capabilities for transferring, preparing, and packaging naval spent nuclear fuel. (Overhaul Alternative)
3. Site a new Spent Fuel Handling Recapitalization Project facility at NRF. (New Facility Alternative)

The NNPP would like to re-initiate this coordination based on non-radiological air quality modeling that was completed in January 2013.

NNPP has addressed impacts on air quality at Federal Class I Areas using the tiered approach described in FLAG 2010. First, a screening assessment using emissions over distance (Q/D) for Federal Class I Areas greater than 50 kilometers from the source was used to evaluate whether visibility, deposition, or ozone impacts would need to be modeled. This assessment showed that Q/D was less than 10 for the alternatives, even when combined with emissions from

Andrea Stacy,
NPS Air Resources Division

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other INL facilities. After confirmation from Mr. Notar that no further assessment of visibility, deposition, or ozone impacts would be needed for Federal Class I Areas greater than 50 kilometers from the source, PSD pollutant concentrations were modeled for these areas using CALPUFF. For Federal Class I Areas less than 50 kilometers from the source, visibility impacts were modeled using VISCREEN, and impacts of criteria and PSD pollutants were modeled using AERMOD. Because the VISCREEN screening thresholds were met, further visibility analysis was unnecessary for Federal Class I Areas less than 50 kilometers from the source. The modeling reports (Enclosures 1, 2, and 3) describe the modeling protocols, inputs, and results for AERMOD, VISCREEN, and CALPUFF, respectively, used for Federal Class I areas. The Q/D assessment is included in both the VISCREEN and CALPUFF reports as they are intended to be stand alone reports. Note that the AERMOD report also includes the model for INL public receptors, which may not be of interest to the NPS.

Note that the modeling is not intended for permitting purposes. Permit evaluations will be performed once the project has developed further and a Record of Decision has been published. Review of the modeling reports at this time is requested to ensure that the NPS's expectations with respect to NEPA analysis are met to mitigate the risk of receiving significant comments on the Draft EIS that could delay the publication of the Final EIS if additional modeling is required. The NNPP requests feedback from the NPS by May 24, 2013.

Please don't hesitate to contact me at 208-533-5363 or by e-mail at robert.ramsey@nrp.doe.gov if you have any questions or comments or need additional information. I will follow-up with you by May 10, 2013, to discuss whether the NPS has any concerns with the modeling approach.

Sincerely,



R. E. Ramsey
Idaho Branch Office

References: FLAG 2010. U.S. Forest Service, National Park Service, and U.S. Fish and Wildlife Service. Federal Land Managers' Air Quality Related Values Work Group (FLAG): Phase I Report – Revised (2010). Natural Resource Report NPS/NRPC/NRR-2010/232. National Park Service, Denver, Colorado.

Andrea Stacy,
NPS Air Resources Division

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- Enclosure 1 INL/LTD-12-26728. Evaluation of Criteria Toxic and Prevention of Significant Deterioration Air Pollutant Emissions for the Expended Core Facility Recapitalization Environmental Impact Statement. January 2013. (Official Use Only)
- Enclosure 2 INL/LTD-12-26766. Evaluation of Visibility Impacts for the Expended Core Facility (ECF) Recapitalization Environmental Impact Statement. January 2013. (Official Use Only)
- Enclosure 3 INL/LTD-12-26741. Evaluation of Prevention of Significant Deterioration (PSD) Increment Levels In Class I Areas for the Expended Core Facility (ECF) Recapitalization Environmental Impact Statement. January 2013. (Official Use Only)

Andrea Stacy,
NPS Air Resources Division

NR:IBO-13/055
April 04, 2013
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Copy to:

John Notar,	NPS
Arthur Rood,	K-Spar, Inc.
Tim Carlson,	BEA
Joanna Stenzel,	BEA
Scott Lee,	BEA
Mark Verdoorn,	BEA
Robert Podgorney,	BEA
Teresa Perkins,	DOE-ID
Timothy Safford,	DOE-ID
Susan Burke,	INL Oversight Coordinator
T. Mbabaliye,	EPA – Region 10



United States Department of the Interior

NATIONAL PARK SERVICE

Air Resources Division

P.O. Box 25287

Denver, CO 80225-0287

IN REPLY REFER TO:

Mr. Robert Ramsey
Naval Reactors
Idaho Branch Office
PO Box 2469
Idaho Falls Idaho 83403-2469

Dear Mr. Ramsey,

We appreciate this opportunity to comment upon Idaho National Laboratory's (INL) "Evaluation of Visibility Impacts for the Expended Core Facility (ECF) Recapitalization Environmental Impact Statement" and the "Evaluation of Prevention of Significant Deterioration (PSD) Increment Levels in Class I Areas for the Expended Core Facility (ECF) Recapitalization Environmental Impact Statement".

The National Park Service (NPS) administers three Class I areas which are located within 110 kilometers (km) of the proposed INL Spent Fuel Handling Recapitalization (SFHP) facility at the INL's Navel Reactors Facility (NRF). The NPS Class I units are Craters of the Moon National Monument (NM), Yellowstone National Park (NP) and Grand Tetons National Park (NP). A large portion of Craters of the Moon NM lies less than 50 km from the proposed INL SFHP facility. INL addressed the impacts to the National Ambient Air Quality Standards (NAAQS) and the Class I increments from the proposed action of construction of the SFHP using the Environmental Protection Agency's (EPA) guideline model AERMOD for areas less than 50 km in Craters of the Moon NM and applied the EPA Long Range Transport model CALPUFF to address the impacts to the NAAQS and PSD increments for the area in Craters of the Moon NM farther than 50 km from the SFHP and all of Yellowstone NP and Grand Tetons NP.

INL followed the recommendations in the Federal Land Managers 2010 (FLAG) guidance document to determine if the proposed action of construction of the SFHP would trigger the need for a visibility air quality related values analysis (AQRV). The FLAG guidance states that the sum of emissions (Q) of visibility impairing pollutants of SO₂, NO_x, PM₁₀, PM_{2.5}, H₂SO₄, elemental carbon, and organic carbon, based on the permitted 24 hour emission rates converted to annual tons per year emission rate divided by the distance in kilometers (D), which is Q/D. The Class I area with the largest Q/D is Craters of the Moon NM with a value of 2.70 for scenario 8b. Therefore, a regional haze analysis for Craters of the Moon NM, Yellowstone NP, and Grand Tetons NP is not required. The Q/D calculation is only to determine if an AQRV analysis is required for receptors greater than 50 km from the source. It does not release a source from the obligation to address Class I AQRV impacts (i.e., deposition of total nitrogen and total sulfur), and an increment analysis for receptors that are located less than 50 km from the source (i.e., a near-field assessment).

We concur with the methodology and the results of the AERMOD air quality impact analyses for the 18 scenarios that indicate that impacts of the criteria pollutants at Craters of the Moon NM are far below the NAAQS for all averaging periods with, with exception of the 1-hour NO₂ impacts from 2 of the possible SFHP scenarios which are slightly greater than one half of the NAAQS which is 190 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The AERMOD air quality analysis indicates that the impacts from any of the SFHP scenarios are far below the Class I increments for all criteria pollutants and averaging periods.

We also concur with the methodology and the results for the CALPUFF air quality impact analyses for the 18 scenarios that indicate that impacts of the criteria pollutants for the applicable areas in Craters of the Moon NM and for all areas in Yellowstone NP and Grand Tetons NP. The long range transport analysis with CALPUFF indicates that the impacts to the NAAQS for the criteria pollutants are well below the standards for all pollutants and averaging periods. The CALPUFF analysis to address impacts to the PSD Class I increments are well below the limits for all pollutants and averaging periods.

Air Quality Related Values (AQRV) Impacts

Visibility

A regional haze analysis for the three NPS Class one areas was not required because the Q/D values are less than 10.0 following the recommendations from the FLM's FLAG 2010 guidance document. FLAG 2010 does require a coherent plume analysis for sources locating at distances less than 50 km from Class I areas. Most of Craters of the Moon NM is less than 50 km from the proposed SFHP facility. Therefore INL performed a coherent visibility analysis with the EPA VISCREEN model. INL ran the VISCREEN model using the background visual range of 253.5 km annual average from Table 10 in the FLAG 2010 document. The initial VISCREEN run was the default Level 1 analysis using the default meteorological condition of "F" stability and wind speed of 1.0 meters per second (m/sec). The SFHP facility failed the Level 1 analysis with an impact of a delta E and a contrast of C.

INL then performed a Level 2 VISCREEN analysis using a worst case 1% meteorological condition of "E" stability and 2.0 m/sec wind speed. The maximum \delta "E" / change in color is 1.275 against a "terrain" background for scenario 8b which is below visibility impact threshold of 2.0. The maximum absolute |C| contrast impact was for several of the proposed scenarios (2, 5, 6, and & 7) all with a maximum contrast of -0.011 which is below the visibility impact threshold of 0.05. Therefore, the NPS is satisfied the construction of the proposed SFHP will not cause a coherent plume impact at Craters of the Moon NM.

Acid Deposition

The NPS is waiving the need for an acid deposition analysis of total nitrogen and total sulfur due to the very low emission of NO_x and SO₂ and H₂SO₄ and the very low annual concentration impacts at Craters of the Moon NM.

For further information regarding National Park Service's comments please contact me at (303) 969-2079.

Sincerely,



John Notar
Meteorologist, NPS Resources Division



DEPARTMENT OF ENERGY
NAVAL REACTORS LABORATORY FIELD OFFICE
POST OFFICE BOX 2469
IDAHO FALLS, IDAHO 83403-2469

NRLFO:IBO-16/032
February 18, 2016

Andrea Stacy
Environmental Protection Specialist
National Park Service
Permitting and NEPA
PO Box 25287
Denver, Colorado 80225-0287

**SUBJECT: REVISED CONSTRUCTION EMISSIONS AND AIR QUALITY
MODELING PROTOCOLS FOR FINAL ENVIRONMENTAL IMPACT
STATEMENT, DOE/EIS-0453-F**

Dear Ms. Stacy:

1. The Naval Nuclear Propulsion Program (NNPP) prepared a Draft Environmental Impact Statement (Draft EIS) for recapitalizing the Expended Core Facility (ECF) spent fuel handling capabilities at the Naval Reactors Facility (NRF) (DOE 2015). The Draft EIS contained evaluations of non-radiological air emissions to determine impacts to air quality. Subsequent to publishing the Draft EIS, the New Facility Alternative construction parameters changed appreciably based on updated design and construction information; the changes affected inputs to the air quality models. As a result, the NNPP determined the air quality impacts for construction would need to be remodeled using updated emissions.
2. Bechtel Marine Propulsion Corporation (BMPC) briefed the National Park Service (NPS) on the changes to construction emissions and the modeling protocols in a teleconference with you and John Notar on November 3, 2015. During the call, the following agreements were made:
 - a. The latest versions of AERMOD and AERMET would be used to model construction air quality impacts (near field receptors at Craters of the Moon)
 - b. MOVES2014 would be used to estimate on- and off-road vehicle emissions
 - c. Construction phases would be used to eliminate overlap in time of emission estimates and model runs where appropriate

A. Stacy, NPS

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February 18, 2016

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- d. As performed for the Draft EIS, VISCREEN Level 1 and Level 2 would be used to evaluate visibility impacts. If VISCREEN Level 2 exceeds thresholds, BMPC would re-engage with NPS to discuss options
- e. Use of propane or electrical power for the two batch plants would be preferred over diesel generators. The current plans are to use electrical power, but the model will include diesel generators to cover impacts in case of delays in accessibility to electricity
- f. The revised model would include emission controls on operations of the two batch plants, which will significantly reduce emissions

3. NPS requested the revised construction emissions and the revised modeling protocols for AERMOD, CALPUFF, and VISCREEN for review prior to publishing the Final EIS. As requested, the information is provided in Enclosure (1). Additionally, the Microsoft Excel® files with the emission calculations are transmitted with this letter as follows:

- a. SFHP Construction Air Emissions – Activity on Exposed Soil (01-19-2016).xlsx
- b. SFHP Construction Air Emissions – Fuel Combustion (12-17-2015).xlsx
- c. SFHP Construction Air Emissions – Concrete Batch Plant (12-08-2015).xlsx
- d. SFHP Construction Air Emissions – Wind Erosion (12-14-2015).xlsx
- e. RoadSourceSummary_01-19-16.xlsx

Please do not hesitate to contact me if you have any questions, comments, or need additional information at (208) 533-5759. I will follow-up with you the first week in March to discuss any concerns you might have regarding the revised construction emissions, modeling protocols, and sensitivity analyses.



James S. Mathus
Compliance Program Manager
Naval Reactors, Idaho Branch Office

Enclosure: As stated

Copy to: See next page

A. Stacy, NPS

NRLFO:IBO-16/032

February 18, 2016

Page 3

Copy to:

J. Notar, National Park Service
T. Mbabaliye, EPA – Region 10 (cover letter only)
D. Bray, EPA – Region 10 (cover letter only)
S. Burke, IDEQ
T. L. Perkins, DOE-ID
T. J. Safford, DOE-ID



DEPARTMENT OF ENERGY

NAVAL REACTORS LABORATORY FIELD OFFICE
POST OFFICE BOX 2469
IDAHO FALLS, IDAHO 83403-2469

NRLFO:IBO-16/055
March 25, 2016

Andrea Stacy
Environmental Protection Specialist
National Park Service
Permitting and NEPA
PO Box 25287
Denver, Colorado 80225-0287

SUBJECT: REVISED CONSTRUCTION AIR QUALITY ANALYSES FOR THE FINAL ENVIRONMENTAL IMPACT STATEMENT, DOE/EIS-0453-F

Reference: (a) DOE/EIS-0453-D, Draft Environmental Impact Statement for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling, U.S. Department of Energy Naval Nuclear Propulsion Program, June 2015.

Dear Ms. Stacy:

1. The Naval Nuclear Propulsion Program (NNPP) prepared reference (a) for recapitalizing the Expended Core Facility (ECF) spent fuel handling capabilities at the Naval Reactors Facility (NRF). Reference (a) contains evaluations of non-radiological air emissions to determine impacts to air quality. Subsequent to publishing reference (a), the New Facility Alternative construction parameters changed based on updated design and construction information; the changes affect inputs to the air quality models. As a result, the NNPP determined the air quality impacts for construction would need to be remodeled using updated emissions.
2. Revised construction emissions and modeling protocols were provided to the National Park Service (NPS) for review on February 18, 2016. The NNPP held a follow-up teleconference with you on March 10, 2016, to determine if there were any questions or concerns regarding the provided information. During the teleconference, NPS requested the Q/D (emissions/distance) analysis be provided to facilitate the evaluation of impacts to Federal Class I areas. Additionally, the discussion identified the VISCREEN and CALPUFF input/output files could assist NPS in performing the evaluation of impacts, but the request was deferred to Mr. John Notar. Mr. Notar was not available for the teleconference.

3. To facilitate the NPS evaluation of impacts to air quality in Federal Class I areas and preclude the need for a second request for information from Mr. Notar, the Q/D, VISCREEN, and CALPUFF input/output files are transmitted with this letter as follows:

- a. QD_Analysis-12-16-15_NPS.xlsx (contains inputs and calculations for Q/D for modeling Scenarios 1- 4 for construction only and cumulative analyses)
- b. CALPUFF_Source_Term&Results-02-26-2016.xlsx (contains release rates in grams/per second and CALPUFF results for Scenario 4 cumulative analysis)
- c. CALPUFF modeling files for Scenario 4 cumulative analysis (worst case):
 - (1) CALPUFF2004.LST
 - (2) calpuff2004.inp
 - (3) CALPUFF2005.LST
 - (4) calpuff2005.inp
 - (5) CALPUFF2006a.LST
 - (6) calpuff2006a.inp
 - (7) CALPUFF2006b.LST
 - (8) calpuff2006b.inp
- d. VISCREEN_ST&Results-01-25-16.xls (contains VISCREEN inputs and results for modeling scenarios 1- 4 for construction only and cumulative analyses)
- e. VISCREEN modeling files for scenario 2 construction only and cumulative analyses (worst case):
 - (1) VIS_Scen2cum.SUM
 - (2) VIS_Scen2cum.LST
 - (3) VIS_Scen2cum.out
 - (4) VIS_Scen2cum.par
 - (5) VIS_Scen2.SUM
 - (6) VIS_Scen2.LST

(7) VIS_Scen2.out

(8) VIS_Scen2.PAR

4. Please use the emissions and modeling protocol report provided in the February 18, 2016, submittal for the methodology used to generate the emissions and results in the attached files. The CALPUFF and VISCREEN modeling files are preliminary and all final results will be incorporated into a report that will support the Final EIS.

Please do not hesitate to contact me if you have any questions, comments, or need additional information at (208) 533-5759. I will follow-up with you the week of April 11, 2016, to discuss any concerns you might have regarding the revised construction emissions, modeling protocols, and sensitivity analyses.



James S. Mathus
Compliance Program Manager
Naval Reactors, Idaho Branch Office

Enclosures: As stated

Copy to:

J. Notar, National Park Service
T. Mbabaliye, EPA – Region 10 (cover letter only)
K. Pepple, EPA – Region 10 (cover letter only)
S. Burke, IDEQ
T. L. Perkins, DOE-ID
T. J. Safford, DOE-ID

Blind copy to:

T. J. Mueller, NR-08R
J. M. McKenzie, NR-08U
A. L. Fry, NR-08R
J. A. Mauller, NR-08R
W. G. Sopkowicz, NR-08G
E. E. Anderson, NR-08U
M. K. Welsh, NRF
J. C. Kent, NRF
L. A. Iannacci, Bettis
ADSARS

United States Department of the Interior

NATIONAL PARK SERVICE
Air Resources Division
P.O. Box 25287
Denver, CO 80225-0287

TRANSMITTED VIA ELECTRONIC MAIL - NO HARDCOPY TO FOLLOW

N3615 (2350)

April 20, 2016

Memorandum

To: Mr. James S. Mathus, Compliance Program Manager, Naval Reactors Laboratory Field Office

From: Andrea Stacy, Environmental Protection Specialist Air Resources Division, National Park Service

Subject: National Park Service Comments on the Revised Construction Air Quality Analysis, DOE/EIS-0453-F, Draft Environmental Impact Statement for the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling, U.S. Department of Energy Naval Nuclear Propulsion Program, June 2015.

We appreciate the DOE's efforts to address potential impacts to units of the National Park System from the Idaho National Laboratory's (INL) recapitalization construction project and the recent modifications to the proposed on-site batch plant. We also appreciate the opportunity to provide early input to the revised air quality impact analysis. The air quality modeling analysis calculated the impacts from the construction project (in several phases) to the Class I increments at Craters of the Moon National Monument (NM), Yellowstone National Park (NP), and Grand Tetons NP. The air quality analysis also calculated the potential near-field visibility impacts by assessing the likelihood of a visible coherent plume at Craters of the Moon NM under worst-case meteorological conditions.

Our review of the long range CALPUFF modeling indicates that the impacts to the Prevention of Significant Deterioration Class I increments are far below the allowable increments for sulfur dioxide, nitrogen dioxide, and PM₁₀ and PM_{2.5} for all averaging periods at Craters of the Moon National Monument (NM), Yellowstone National Park (NP), and Grand Tetons NP. The Level 2 visible plume analysis with the EPA VISCREEN model indicates that there should be no visible plume impacts at Craters of the Moon NM. Accordingly, the NPS does not believe that this project will result in significant impacts to air quality or any AQARVs in the nearby parks.

The NPS review of the revised modeling assessment and has confirmed that:

1. The analysis followed modeling recommendations in the FLAG document;
2. The distribution of emissions into individual non-concurrent project phases is appropriate for modeling purposes;
3. The modeled impacts are below NPS thresholds of concern, and therefore, the project is unlikely to significantly impact air quality or Air Quality Related Values (AQRVs) in the nearby NPS units;
4. Additional air quality modeling for the remaining project phases is not necessary in the revised EIS assuming the phases previously modeled represent worst-case emissions.
5. NPS conclusion are contingent on assurances that air emission assumptions used in the modeling analysis will be incorporated into the Record of Decision as mitigation requirements (i.e., Tier 4 engines for diesel generators at the concrete batch plants).

Thank you again for the opportunity to comment on the Recapitalization of Infrastructure Supporting Naval Spent Nuclear Fuel Handling construction project. Unless the project design or analysis parameters change significantly, we do not believe further NPS involvement in the air analysis component of this project is necessary. If you have any questions or would like to discuss these comments, please feel free to contact Andrea Stacy at 303-969-2816, or John Notar at 303-969-2079.

cc:

John Notar, ARD NPS
Susan Johnson, ARD NPS



DEPARTMENT OF ENERGY
NAVAL REACTORS LABORATORY FIELD OFFICE
POST OFFICE BOX 2469
IDAHO FALLS, IDAHO 83403-2469

NRLFO:IBO-16/083
June 17, 2016

TO: FILE

SUBJECT: MEETING WITH THE ENVIRONMENTAL PROTECTION AGENCY ON
THE FINAL ENVIRONMENTAL IMPACT STATEMENT FOR
RECAPITALIZATION OF INFRASTRUCTURE SUPPORTING NAVAL
SPENT NUCLEAR FUEL HANDLING

ATTENDEES:

IBO	BMPC	EPA
B. Haynes	G. Henning	C. Littleton*
C. Henvit	L. Iannacci	T. Mbabaliye
J. Mathus	K. Rasmussen	K. Pepple
	D. Vergona	M. Marthea**
		M. Vakoc

* Part-time attendee

** Per telecon

On April 27, 2016, representatives of the Naval Nuclear Propulsion Program (NNPP) met with representatives from Region 10 of the Environmental Protection Agency (EPA) in the EPA office located in Seattle, Washington.

The objectives of the meeting were to:

- Review the planned project changes being included in the Final Environmental Impact Statement (EIS).
- Obtain concurrence that the NRF site does not require a National Pollutant Discharge Elimination System (NPDES) permit for storm water discharges.
- Ensure the EPA concerns with the Draft EIS are resolved in the Final EIS by reviewing the proposed resolutions of EPA comments provided on the Draft EIS.

Prior to the meeting, proposed responses to the EPA comments and additional technical information about storm water discharges at NRF were provided to the EPA (Enclosures (1) and (2), respectively).

Ms. Littleton welcomed the NNPP representatives and was much appreciative of the face-to face meeting to work through the stated objectives. Mr. Haynes and Mr. Mathus proceeded to present a high-level overview of the NNPP, summary of project changes, and why the NNPP does not believe a NPDES construction general permit is required.

To File

NRLFO:IBO-16/083

June 17, 2016

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Enclosure (3) contains the presentation used during the meeting. Some of the EPA comments and proposed NNPP resolutions were discussed. The agreements and commitments resulting from the exchange are provided below.

1. Mr. Mbabaliye requested NNPP coordinate with the U.S. General Services Administration seismic subject matter expert, W. Hirano, to review the high-level seismic approach being pursued on the preferred alternative. Since NNPP responses to the seismic comments are considered adequate, this action will be pursued separate from the EIS. [Complete. On May 9, 2016, Naval Reactors (Hertzberg) spoke with William Hirano, as Mr. Mbabaliye suggested. Based on Mr. Hirano's expertise working on seismic designs for office buildings using the International Building Code, he was not familiar with the seismic standards for nuclear facilities, and had no additional perspective to provide.]

2. Based on the technical evaluation provided in Enclosure (2), the EPA does not object to the NNPP determination that a NPDES permit for storm water discharge from construction activities is not required for the proposed action. The NNPP will coordinate with the Department of Energy – Idaho Operations Office (DOE-ID) to request written concurrence that industrial and construction activities at the Naval Reactors Facility (NRF) site (including the NRF Administration Area, NRF Industrial Complex, and the Expendid Core Facility Recapitalization Project locations) do not have a reasonable potential to discharge to the Big Lost River; therefore, such activities do not require NPDES permits for storm water discharges.

3. The NNPP will provide References D and E cited in the technical paper (Enclosure (2)) to Ms. Vakoc of the EPA. [Complete. References transmitted on April 29, 2016.]

4. The NNPP agreed to add a clarifying statement in the response to EPA comment 31.20 that personnel monitoring as required by 29 CFR 1926, or other regulatory requirements, will be conducted as appropriate. The revised response to EPA comment 31.20 in the Final EIS will be:

Item #31.20:

The NNPP performs quarterly on-site inspections and semi-annual reporting of visible stationary source emissions and fugitive dust per the INL Tier I (Title V) Operating Permit requirements and Idaho Air Rules. Fugitive dust monitoring would be performed during construction according to permit requirements. This was added to the EIS. The additional monitoring recommended in the comment is not required. Personnel monitoring as required by DOE Order 440.1B, or other regulatory requirements will be conducted as appropriate.

As described in Section 3.6.2.1, the Title V permit is issued by IDEQ and its purpose is to ensure adequate control of emissions to protect public health and safety. The INL has applied to IDEQ for a synthetic minor, site wide, air quality permit to construct with a facility emission cap component. The NNPP will

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June 17, 2016

Page 3

continue to comply with applicable air quality permits and Idaho Air Rules throughout the life of the project.

5. Mr. Pepple will engage Mr. Mathus if any additional information related to air quality modeling is needed in the Final EIS to respond to EPA comment 31.16. [Complete. In an email dated April 29, 2016, Mr. Pepple indicated that no additional information is needed in the Final EIS to address the EPA comments on air quality.]

6. Since the results are now available, the NNPP agreed to add the FY2015 Green House Gas emission results to Tables 3.6-14 and 3.6-21 in the Final EIS.

Table 3.6-14: INL GHG Emissions

	Scope 1 and 2 Emissions		Scope 3 Emissions		Total Emissions	
	MT CO ₂ e	U.S. Tons	MT CO ₂ e	U.S. Tons	MT CO ₂ e	U.S. Tons
FY 2008 Baseline	140,950	155,369	35,206	38,808	176,156	194,177
FY 2010	90,811	100,101	23,082	25,443	113,893	125,544
FY 2011	112,398	123,896	28,460	31,372	140,858	155,268
FY 2012	112,484	123,991	26,761	29,499	139,245	153,490
FY 2013	97,746	107,745	22,287	24,567	120,033	132,312
FY 2014	104,304	114,974	23,190	25,562	127,494	140,537
FY 2015	93,761	103,353	24,868	27,412	118,629	130,765

Note: The totals do not include NRF GHG emissions. Table 3.6-21 provides NRF GHG emissions.
 Sources: INL 2011a, DOE 2012a, DOE 2012d, DOE 2013c, DOE 2014c, DOE 2015

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Table 3.6-21: NRF GHG Emissions

	Scope 1 and 2 Emissions		Scope 3 Emissions		Total Emissions	
	MT CO ₂ e	U.S. Tons	MT CO ₂ e	U.S. Tons	MT CO ₂ e	U.S. Tons
FY 2008 Baseline	15,572	17,165	3220	3549	18,792	20,714
FY 2010	14,003	15,436	3190	3516	17,193	18,952
FY 2011	13,248	14,603	2443	2693	15,691	17,296
FY 2012	11,428	12,597	2440	2690	13,868	15,287
FY 2013	11,982	13,208	3313	3652	15,295	16,860
FY 2014	12,307	13,566	3281	3617	15,588	17,183
FY 2015	10,298	11,351	2897	3193	13,195	14,545

J. S. Mathus
 Naval Reactors Laboratory Field Office
 Idaho Branch Office

Enclosures: As Stated

Copy to:

T. Mbabaliye, EPA
 L. Iannacci, BMPC
 C. Pierce, BMPC
 D. Vergona, BMPC
 G. Henning, BMPC
 K. Rasmussen, BMPC

APPENDIX C

APPLICABLE LAWS, REGULATIONS, AND REQUIREMENTS

This Appendix describes the laws, regulations, and other requirements that could potentially apply to the proposed action. Federal laws and regulations are summarized in Section C.2; Executive Orders (EOs) in Section C.3; United States (U.S.) Department of Energy (DOE) regulations and orders in Section C.4; and state environmental laws, regulations, and agreements in Section C.5. Emergency management and response laws, regulations, and EOs are discussed in Section C.6. Potentially applicable permitting and approval requirements are discussed in Section C.7.

C.1 Introduction

There are a number of federal environmental laws, EOs, and DOE Directives that affect environmental protection, health, safety, compliance, and consultation at the Idaho National Laboratory (INL). In some cases, the Naval Nuclear Propulsion Program (NNPP), as a semi-autonomous organization within the DOE, has sole authority to take action (e.g., under the Atomic Energy Act (AEA)). In other cases, the U.S. Environmental Protection Agency (EPA) has authority to regulate; in others, EPA has delegated its authority to regulate to the state of Idaho (e.g., under the Resource Conservation and Recovery Act (RCRA)). In still other cases, state law applies. The major federal and state laws and regulations, EOs, and other requirements that currently apply or may apply in the future to the actions evaluated in this Environmental Impact Statement (EIS) are briefly discussed in the following sections.

C.2 Applicable Federal Laws and Regulations

Federal environmental, safety, and health laws and regulations that could apply to the proposed action are discussed in this section.

National Environmental Policy Act of 1969, as amended (42 U.S.C. § 4321 *et seq.*). The National Environmental Policy Act (NEPA) establishes a national policy promoting awareness of the environmental consequences of human activity on the environment and consideration of environmental impacts during the planning and decision-making stages of a project. It requires federal agencies to prepare an EIS for major federal actions with potentially significant environmental impacts on the human environment. This EIS has been prepared in accordance with NEPA requirements, Council on Environmental Quality (CEQ) regulations (40 C.F.R. § 1500 *et seq.*), and DOE provisions for implementing the procedural requirements of NEPA (10 C.F.R. § 1021, DOE Order 451.1B). Reasonable alternatives and their potential environmental impacts are discussed.

Clean Air Act of 1970, as amended (42 U.S.C. § 7401 *et seq.*). The Clean Air Act (CAA) is intended to “protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.” Section 118 of the CAA (42 U.S.C. § 7418) requires that each federal agency with jurisdiction over any property or facility engaged in any activity that might result in the discharge of air pollutants comply with “all federal, state, interstate, and local requirements with regard to the control and abatement of air pollution.”

The CAA requires: (1) EPA to establish National Ambient Air Quality Standards (NAAQS) as necessary to protect the public health, with an adequate margin of safety, from any known or anticipated adverse effects of a regulated pollutant (42 U.S.C. § 7409 *et seq.*); (2) establishment of national standards of performance for new or modified stationary sources of atmospheric pollutants (42 U.S.C. § 7411); (3) specific emission increases to be evaluated so as to prevent a significant

deterioration in air quality (42 U.S.C. § 7470 *et seq.*); and (4) specific standards for releases of hazardous air pollutants (including radionuclides) (42 U.S.C. § 7412). In Idaho, these standards are implemented through regulations and plans developed by the state with EPA approval. The CAA requires sources to meet standards and obtain permits to satisfy those standards.

Emissions of air pollutants are regulated by EPA under 40 C.F.R. § 50 through 99. Radionuclide emissions from DOE facilities are regulated under the National Emission Standards for Hazardous Air Pollutants (NESHAP) Program under 40 C.F.R. § 61.

Safe Drinking Water Act of 1974, as amended (42 U.S.C. § 300(f) *et seq.*). The primary objective of the Safe Drinking Water Act (SDWA) is to protect the quality of public drinking water supplies and sources of drinking water. The implementing regulations, delegated to the state of Idaho by EPA, establish standards applicable to public water systems. These regulations include maximum contaminant levels (including those for radioactivity) in public water systems, which are defined as water systems that have at least 15 service connections used by year-round residents or regularly serve at least 25 year-round residents. The EPA regulations implementing the SDWA are found in 40 C.F.R. § 100 through 149.

Wild and Scenic Rivers Act of 1968 (16 U.S.C § 1271 - 1287). The Wild and Scenic Rivers Act establishes a National Wild and Scenic Rivers System and prescribes the method and standards through which additional rivers may be identified and added to the system. The list of rivers in the system are identified in 16 U.S.C § 1274.

Atomic Energy Act of 1954 (42 U.S.C. § 2011 *et seq.*). Under the AEA, DOE is authorized to establish standards to protect health or minimize dangers to life or property for activities under DOE's jurisdiction. Through a series of DOE Orders, a system of standards and requirements has been established to ensure safe design and operation of DOE facilities. For activities at the Naval Reactors Facility (NRF), this authority within DOE is assigned to the NNPP by the National Nuclear Security Administration Act (50 USC § 2401 *et seq.*).

Low-Level Radioactive Waste Policy Act of 1980, as amended (42 U.S.C. § 2021 *et seq.*). The Low-Level Radioactive Waste Policy Act amended the AEA to specify that the federal government is responsible for disposal of low-level radioactive waste generated by its activities.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 U.S.C. § 9601 *et seq.*). The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is designed to promote the cleanup of hazardous waste sites. Among other things, CERCLA requires that federal agencies investigate and clean up contamination at their facilities. Federal facilities that are significantly contaminated may be placed on the CERCLA National Priorities List (NPL). For such facilities, CERCLA requires that EPA and the federal facility enter into an interagency agreement to cover the cleanup. States are often included as signatories to those agreements.

Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. § 6901 *et seq.*). The Solid Waste Disposal Act of 1965, as amended, governs the transportation, treatment, storage, and disposal of hazardous and non-hazardous waste. Under RCRA of 1976 that amended the Solid Waste Disposal Act of 1965, EPA defines and identifies hazardous waste; establishes standards for its transportation, treatment, storage, and disposal; and requires permits for persons engaged in hazardous waste activities. Section 3006 of RCRA (42 U.S.C. § 6926) allows states to establish and administer these permit programs with EPA approval. The EPA regulations implementing RCRA are found in 40 C.F.R. § 260 through 283. Regulations imposed on a generator or on a treatment, storage, and/or disposal facility vary according to the type and quantity of material or waste

generated, treated, stored, and/or disposed. The method of treatment, storage, and/or disposal also impacts the extent and complexity of the requirements.

Federal Facility Compliance Act of 1992 (42 U.S.C. § 6961 *et seq.*). This act requires DOE to prepare treatment plans for sites which generate or store mixed wastes; mixed wastes contain chemically hazardous and radioactive constituents. The Federal Facility Compliance Act (FFCA) requires Site Treatment Plans to be submitted to the regulatory state or EPA for approval.

Hazardous Material Transportation Act of 1975 (49 U.S.C. § 5105 *et seq.*). Transportation of hazardous and radioactive materials and substances is governed by the Department of Transportation (DOT). The Hazardous Material Transportation Act requires DOT to prescribe uniform national regulations for transportation of hazardous materials (including radioactive materials). Most state and local regulations regarding such transportation that are not substantively the same as DOT regulations are preempted (i.e., rendered void) (49 U.S.C. § 5125). In effect, this allows state and local governments to enforce the federal regulations, not to change or expand upon them.

This program is administered by the DOT Research and Special Programs Administration, which coordinates its regulations with those of the Nuclear Regulatory Commission (NRC) (under the AEA) and EPA (under RCRA) when covering the same activities.

DOT regulations (found in 49 C.F.R. § 171 through 178, and 49 C.F.R. § 383 through 397) contain requirements for identifying a material as hazardous or radioactive. These regulations interface with the NRC regulations for identifying material, but DOT hazardous material regulations govern the hazard communication (e.g., marking, hazard labeling, vehicle placarding, and emergency response telephone number) and shipping requirements.

The NRC regulations applicable to radioactive materials transportation are found in 10 C.F.R. § 71. These regulations include detailed packaging design certification testing requirements. Complete documentation of design and safety analysis and the results of the required testing are submitted to NRC to certify the packaging for use. This certification testing involves the following components: heat, free drop onto an unyielding surface, immersion in water, puncture by dropping the package onto a steel bar, and gas tightness. EPA regulations governing off-site transportation of hazardous waste are found at 40 C.F.R. § 262.

Pollution Prevention Act of 1990 (42 U.S.C. § 13101 *et seq.*). The Pollution Prevention Act establishes a national policy for waste management and pollution control. Source reduction is given first preference, followed by environmentally safe recycling, with disposal or releases to the environment as a last resort. Oil pollution prevention regulations (40 C.F.R. § 112) establish procedures to prevent the discharge of oil and require preparation and implementation of spill prevention, control, and countermeasures plans.

Toxic Substances Control Act of 1976 (15 U.S.C. § 2601 *et seq.*). The Toxic Substances Control Act (TSCA) provides EPA with the authority to require testing of chemical substances entering the environment and to regulate them as necessary. EPA is also authorized to impose limitations on the use and disposal of polychlorinated biphenyls (PCBs) which are found at 40 C.F.R. § 761.

National Historic Preservation Act of 1966, as amended (16 U.S.C. § 470 et seq.). The National Historic Preservation Act (NHPA) provides that sites with significant national historic value be placed on the National Register of Historic Places (NRHP). This register is maintained by the Secretary of the Interior. The major provisions of the NHPA for DOE consideration are Sections 106 and 110. Both sections aim to ensure that historic properties are appropriately considered in planning federal initiatives and actions. Section 106 is a specific, issue-related mandate to which federal agencies must adhere. It is a reactive mechanism driven by a federal action. Section 110, in contrast, sets out broad federal agency responsibilities with respect to historic properties. It is a proactive mechanism with emphasis on ongoing management of historic preservation sites and activities at federal facilities. No permits or certifications are required under the NHPA.

Section 106 requires the head of any federal agency having direct or indirect jurisdiction over a proposed federal or federally assisted undertaking to ensure compliance with the provisions of the NHPA. It compels federal agencies to “take into account” the effect of their projects on historical and archaeological resources and to give the Advisory Council on Historic Preservation the opportunity to comment on such effects. Section 106 mandates consultation during federal actions if the undertaking has the potential to affect a historic property. This consultation normally involves State and/or Tribal Historic Preservation Officers and may include other organizations and individuals such as local governments, Native American tribes, and Native Hawaiian organizations. If an adverse effect is found, the consultation often ends with the execution of a memorandum of agreement that states how the adverse effect will be resolved.

The regulations implementing Section 106 are found at 30 C.F.R. § 800.

Antiquities Act of 1906, as amended (16 U.S.C. § 431 to 433). This act protects historic and prehistoric ruins, monuments, and antiquities, including paleontological resources, on federally controlled lands from appropriation, excavation, injury, and destruction without permission.

Historic Site Act of 1935 (16 U.S.C. § 461 to 467). This act establishes national policy to preserve for public use historic sites, buildings, and objects of national significance for the inspiration and benefit of the people of the U.S.

Archaeological and Historic Preservation Act of 1960, as amended (16 U.S.C. § 469 to 469c). This act protects sites that have historic or prehistoric importance that might otherwise be lost or destroyed as a result of federal actions.

Archaeological and Resources Protection Act of 1979, as amended (16 U.S.C. § 470 et seq.). This act requires a permit for any excavation or removal of archaeological resources from federal or Native American lands. Excavations must be undertaken for the purpose of furthering archaeological knowledge in the public interest, and resources removed remain the property of the U.S. The law requires that whenever any federal agency finds that its activities may cause irreparable loss or destruction of significant scientific, prehistoric, or archaeological data, the agency must notify the U.S. Department of the Interior (DOI) and may request that the Department undertake the recovery, protection, and preservation of such data. Consent must be obtained from the Native American tribe or the federal agency having authority over the land on which a resource is located before issuance of a permit; the permit must contain the terms and conditions requested by the tribe or federal agency.

Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 et seq.). The Endangered Species Act (ESA) is intended to prevent the further decline of endangered and threatened species and to restore those species and their critical habitats. Section 7 of the ESA requires federal agencies having reason to believe that a prospective action may affect an endangered or threatened species or its critical habitat to consult with the U.S. Fish and Wildlife Service (USFWS) or the

National Marine Fisheries Service to ensure that the action does not jeopardize the species or destroy its habitat (50 C.F.R. § 17). Despite reasonable and prudent measures to avoid or minimize such impacts, if the species or its habitat would be jeopardized by the action, a formal review process is specified.

Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. § 703 et seq.). The Migratory Bird Treaty Act, as amended, is intended to protect birds that have common migration patterns between the U.S. and Canada, Mexico, Japan, and Russia. Under this act, taking, killing, or possessing migratory birds is unlawful unless and except as permitted by regulation.

Bald and Golden Eagle Protection Act of 1973, as amended (16 U.S.C. § 668 through 668d). The Bald and Golden Eagle Protection Act, as amended, makes it unlawful to take, pursue, molest, or disturb bald (American) and golden eagles, their nests, or their eggs anywhere in the U.S. A permit must be obtained from the DOI to relocate a nest that interferes with resource development or recovery operations.

Federal Noxious Weed Act of 1974, as amended (7 U.S.C. § 2801 through 2814). This act provides for control and management of non-indigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or the public health. Federal agencies are required to develop management programs to control undesirable plants on federal lands under the agency's jurisdiction.

American Indian Religious Freedom Act of 1978 (42 U.S.C. 1996). This act reaffirms American Indian religious freedom under the First Amendment and sets U.S. policy to protect and preserve the inherent and constitutional right of American Indians to believe, express, and exercise their traditional religions. This act requires that federal actions avoid interfering with access to sacred locations and traditional resources that are integral to the practice of tribal religions.

Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. § 3001). This act establishes a means for Native Americans to request the return or repatriation of human remains and other cultural items presently held by federal agencies or federally assisted museums or institutions. This act also contains provisions regarding the intentional excavation and removal of, inadvertent discovery of, and illegal trafficking in Native American human remains and cultural items. Major actions under this law include: (a) establishing a review committee with monitoring and policymaking responsibilities; (b) developing regulations for repatriation, including procedures for identifying lineal descent or cultural affiliation needed for claims; (c) providing oversight of museum programs designed to meet the inventory requirements and deadlines of this law; and (d) developing procedures to handle unexpected discoveries of graves or grave goods during activities on federal or tribal lands. All federal agencies that manage land and/or are responsible for archaeological collections obtained from their lands or generated by their activities must comply with this act.

Occupational Safety and Health Act of 1970 (29 U.S.C. § 651 et seq.). The Occupational Safety and Health Act establishes standards for safe and healthful working conditions in places of employment throughout the U.S. This act is administered and enforced by the Occupational Safety and Health Administration (OSHA), a U.S. Department of Labor agency. Section 4(b)(1) of this act exempts DOE and its contractors from the occupational safety requirements of OSHA. However, the DOE and NNPP have established their own occupational safety and health programs for facilities and activities authorized pursuant the AEA as provided in 42 U.S.C. § 2201. The standards under these programs are generally consistent with those prescribed by OSHA.

Noise Control Act of 1972, as amended (42 U.S.C. § 4901 et seq.). Section 4 of the Noise Control Act of 1972, as amended, directs all federal agencies to carry out "to the fullest extent within their

authority” programs within their jurisdictions in a manner that furthers a national policy of promoting an environment free from noise that jeopardizes health and welfare.

Energy Independence and Security Act of 2007 (42 U.S.C. § 17001 et seq.). This act sets federal energy management requirements in several areas including: energy reduction goals for federal buildings; facility management/benchmarking; performance and standards for new buildings, major renovations, and high-performance buildings; energy savings performance contracts; metering; energy-efficient product procurement; Office of Management and Budget reporting; and reductions in petroleum use/increases in alternative fuel uses.

C.3 Applicable Executive Orders

Executive Order 11514 (Protection and Enhancement of Environmental Quality, March 5, 1970, as amended by Executive Order 11991, May 24, 1977). This Order requires federal agencies to continually monitor and control their activities to: (1) protect and enhance the quality of the environment, and (2) develop procedures to ensure the fullest practicable provision of timely public information and understanding of the federal plans and programs that may have potential environmental impacts so that the views of interested parties can be obtained.

Executive Order 11593 (National Historic Preservation, May 13, 1971). This Order directs federal agencies to locate, inventory, and nominate qualified properties under their jurisdiction or control to the NRHP. This process requires DOE to provide the Advisory Council on Historic Preservation the opportunity to comment on the possible impacts of the proposed activity on any potential eligible or listed resources.

Executive Order 11988 (Floodplain Management, May 24, 1977). This Order (implemented by DOE in 10 C.F.R. § 1022) requires federal agencies to establish procedures to ensure that the potential effects of flood hazards and floodplain management are considered for any action undertaken in a floodplain, and that floodplain impacts be avoided to the extent practicable.

Executive Order 11990 (Protection of Wetlands, May 24, 1977). This Order (implemented by DOE in 10 C.F.R. § 1022) requires federal agencies to avoid any short-term or long-term adverse impacts on wetlands wherever there is a practicable alternative. Each agency must also provide opportunity for early public review of any plans or proposals for new construction in wetlands.

Executive Order 12088 (Federal Compliance with Pollution Control Standards, October 13, 1978, as amended by Executive Order 12580, Superfund Implementation, January 23, 1987). This Order directs federal agencies to comply with applicable administrative and procedural pollution control standards established by, but not limited to, the CAA, Noise Control Act, Clean Water Act, SDWA, TSCA, and RCRA.

Executive Order 12344 (Naval Nuclear Propulsion Program, February 1, 1982) (codified under 50 U.S.C. § 2406 and 2511). This Order sets forth the authorities and responsibilities of the NNPP as an integrated program of the U.S. Department of Navy and the DOE.

Executive Order 12699 (Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction, January 5, 1990, as amended by Executive Order 13289, February 28, 2003). This Order requires federal agencies to reduce risks to occupants of buildings owned, leased, or purchased by the federal government or buildings constructed with federal assistance and to persons who would be affected by failures of federal buildings in earthquakes; to improve the capability of existing federal buildings to function during or after an earthquake; and to reduce earthquake losses of public buildings, all in a cost-effective manner. Each federal agency responsible

for the design and construction of a federal building shall ensure that the building is designed and constructed in accordance with appropriate seismic design and construction standards.

Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 11, 1994, as amended by Executive Order 12948, January 30, 1995). This Order requires each federal agency to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

Executive Order 13007 (Indian Sacred Sites, May 24, 1996). To the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, this Order requires federal agencies with statutory or administrative responsibility for the management of federal lands to (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners, and (2) avoid adversely affecting the physical integrity of such sacred sites. Where appropriate, agencies are also required to maintain the confidentiality of sacred sites.

Executive Order 13045 (Protection of Children from Environmental Health Risks and Safety Risks, April 21, 1997, as amended by Executive Order 13296, April 18, 2003). This Order requires each federal agency to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and to ensure that its policies, programs, activities, and standards address disproportionate environmental health or safety risks to children.

Executive Order 13112 (Invasive Species, February 3, 1999). This Order directs federal agency action to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause.

Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments, November 6, 2000). This Order directs federal agency action to establish regular and meaningful consultation and collaboration with Indian tribal governments in the development of regulatory practices that significantly affect their communities; strengthen the U.S. government-to-government relationship with Indian tribes, and reduce the imposition of unfunded mandates upon Indian tribes.

Executive Order 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds, January 10, 2001). This Order imposes requirements on federal agencies for those activities that have or are likely to have a measurable negative effect on migratory bird populations.

Executive Order 13693 (Planning for Federal Sustainability in the Next Decade, March 19, 2015). This Order continues the U.S. policy that agencies shall increase energy efficiency and improve their environmental performance. The strategy for the next decade calls for expanded and updated Federal environmental performance goals with a clear overarching objective of reducing greenhouse gas emissions. It directs each agency to propose percentage reduction targets for agency-wide reduction of greenhouse gas emission in absolute terms by the end of fiscal year 2025 relative to a fiscal year 2008 baseline and to support preparations for the impacts of climate change. Federal environmental performance goals are established to promote building energy conservation, efficiency, and management; improve agency water use efficiency and management; improve agency fleet and vehicle efficiency and management; promote sustainable acquisition and procurement; advance waste prevention and pollution prevention; and promote electronics stewardship.

Executive Order 13728 (Wildland-Urban Interface Federal Risk Mitigation, May 18, 2016). This Order directs agencies to take proactive steps to enhance the resilience of buildings that are owned by the Federal Government and are located on Federal land. The order directs agencies to ensure

that every new Federal building above 5,000 gross square feet on Federal land within the wildland-urban interface at moderate or greater wildfire risk for which the agency has not completed design is in compliance with the 2015 edition of the International Wildland-Urban Interface Code promulgated by the International Code Council, or an equivalent code.

C.4 Potentially Applicable DOE Regulations and Orders

The AEA of 1954, as amended, authorizes DOE to prescribe such regulations and orders as it deems necessary to govern any activity authorized pursuant to the AEA, including standards and restrictions governing the design, location, and operation of facilities used in the conduct of such activities in order to protect health and to minimize the dangers to life or property.

DOE regulations are found in 10 C.F.R. For the purpose of this EIS, relevant regulations include “Nuclear Safety Management” (10 C.F.R. § 830), “Occupational Radiation Protection” (10 C.F.R. § 835), “Compliance with the National Environmental Policy Act” (10 C.F.R. § 1021), and “Compliance with Floodplains/Wetlands Environmental Review Requirements” (10 C.F.R. § 1022).

DOE Orders are a part of a system of departmental directives which establish, communicate, and institutionalize policies, requirements, and procedures across the DOE and its contractors. The DOE Orders potentially applicable to the proposed action are listed in Table C-1.

Table C-1: DOE Orders and Directives Potentially Applicable to the Proposed Action

DOE Order/Number	Subject	Date
O 413.3B	Program and Project Management for the Acquisition of Capital Assets	Change 2 - May 12, 2016
O 420.1C	Facility Safety	December 4, 2012
O 433.1B	Maintenance Management Program for DOE Nuclear Facilities	April 21, 2010
O 435.1	Radioactive Waste Management	Change 1 - August 28, 2001
O 436.1	Departmental Sustainability	May 2, 2011
O 440.1B	Worker Protection Management for DOE (Including the National Nuclear Security Administration) Federal Employees	Change 1 - August 21, 2012
O 450.1A	Environmental Protection Program	June 4, 2008
O 450.2	Integrated Safety Management	April 15, 2011
O 451.1B	National Environmental Policy Act Compliance Program	Change 2 - June 25, 2010
O 458.1	Radiation Protection of the Public and the Environment	Change 2 – June 6, 2011
O 460.1C	Packaging and Transportation Safety	May 14, 2010
O 460.2A	Departmental Materials Transportation and Packaging Management	December 22, 2004
O 144.1	Department of Energy American Indian Tribal Government Interaction and Policy	November 6, 2009
O 410.2	Management of Nuclear Materials	August 17, 2009
O 151.1C	Comprehensive Emergency Management	November 11, 2005
O 225.1B	Accident Investigations	March 4, 2011
O 231.1B	Environment, Safety, and Health Reporting	June 27, 2011
O 243.1A	Records Management Program	November 7, 2011
O 414.1D	Quality Assurance	April 25, 2011

C.5 State Environmental Laws, Regulations, and Agreements

Certain environmental requirements, including some discussed in Section C.3, have been delegated to state authorities for implementation and enforcement. A list of potentially applicable Idaho state environmental laws, regulations, and tribal agreements is provided in Table C-2.

Table C-2: Potentially Applicable State Environmental Laws, Regulations, and Tribal Agreements

Law/Regulation/Agreement	Citation	Requirements
Idaho Environmental Protection and Health Act	Idaho Code (IC), Title 22, Agriculture and Horticulture, Chapter 24, Noxious Weeds	Noxious weed monitoring plan is required.
Idaho Environmental Protection and Health Act	IC, Title 39, Health and Safety, Chapter 1, Department of Health and Welfare, Sections 39-105	Provides for development of air pollution control permitting regulations.
Rules for the Control of Air Pollution in Idaho	Idaho Administrative Procedure Act (IDAPA) 58, Department of Environmental Quality, Title 1, Chapter 1 (58.01.01)	Provides rules and permitting programs to control the emissions of air pollutants in Idaho.
Idaho Water Pollution Control Act	IC, Title 39, Chapter 36, Water Quality	Establishes a program to enhance and preserve the quality and value of water resources.
Water Quality Standards and Wastewater Treatment Requirements	IDAPA 58.01	Establishes water quality standards and wastewater treatment requirements.
Transportation of Hazardous Waste	IC, Title 18, Crimes and Punishment, Chapter 39, Highways and Bridges, Section 18-3905; IC, Title 49, Motor Vehicles, Chapter 22, Hazardous Materials/Hazardous Waste Transportation Enforcement	Regulates transportation of hazardous materials/hazardous waste on highways.
Idaho Hazardous Waste Management Act	IC, Title 39, Chapter 44, Hazardous Waste Management	Requires proper controls for the management of solid and hazardous waste.
Rules and Standards for Hazardous Waste	IDAPA 58.01.05	Requires proper controls for the management of solid and hazardous waste.
Various Acts Regarding Fish and Game	IC, Title 36, Fish and Game, Chapters 9, Protection of Fish, 11, Protection of Animals and Birds, and 24, Species Conservation	Establishes protection of wildlife from certain methods of take. Establishes species management plan requirements.
Endangered Species Act	IC, Title 67, State Government and State Affairs, Chapter 8, Executive and Administrative Officers, Section 67-818	Establishes state responsibility and coordination of policy and programs related to threatened and endangered species.
Rules for Classification and Protection of Wildlife	IDAPA 13, Department of Fish and Game, 13.01.06	Establishes authority for the Idaho Fish and Game Commission to adopt rules concerning the taking of wildlife species and classification of wildlife species.

Table C-2: Potentially Applicable State Environmental Laws, Regulations, and Tribal Agreements (cont.)

Law/Regulation/Agreement	Citation	Requirements
Idaho Historic Preservation Act	IC, Title 67, Chapter 46, Preservation of Historic Sites	Requires consultation with responsible local governing body.
Agreement in Principle Between the Shoshone-Bannock Tribes and DOE	December 3, 2007	Establishes understanding and commitment between the Tribes and DOE.
Settlement Agreement Among the State of Idaho, the DOE, and the Navy	October 17, 1995, amended 2008	Allows Idaho National Engineering and Environmental Laboratory (INEEL) (now INL) to receive spent nuclear fuel and mixed waste from off-site and establishes schedules for the treatment of existing high-level radioactive waste, transuranic waste, and mixed waste, and the removal of spent nuclear fuel from the State.
Federal Facility Agreement and Consent Order	December 9, 1991	Establishes a procedural framework for developing, prioritizing, implementing, and monitoring appropriate response actions at the INL in accordance with CERCLA, RCRA, and the Idaho Hazardous Waste Management Act.
Idaho Site Treatment Plan and Consent Order for Federal Facility Compliance Plan	November 1, 1995 - issued to INEEL (now INL) and Argonne National Laboratory-West (now Materials and Fuels Complex (MFC))	Addresses compliance with the FFCA and mixed waste treatment issues by implementing the INL Site Treatment Plan.

C.6 Emergency Management and Response Laws, Regulations, and Executive Orders

This section discusses the laws, regulations, and EOs that address the protection of public health and worker safety and require the establishment of emergency plans. These laws, regulations, and EOs relate to the operation of facilities (including NNPP facilities) that engage directly or indirectly in the production of special nuclear material.

C.6.1 Federal Emergency Management and Response Laws

Emergency Planning and Community Right-to-Know Act of 1986 (U.S.C. § 11001 et seq.) (also known as “SARA Title III”). Emergency Planning and Community Right-to-Know Act requires emergency planning and notice to communities and government agencies concerning the presence and release of specific chemicals. EPA implements this act under regulations found in 40 C.F.R. § 355, 370, and 372. Under Subtitle A of this act, federal facilities are required to provide various information (such as inventories of specific chemicals used or stored and releases that occur

from these sites) to the state emergency response commission and to the local emergency planning committee to ensure that emergency plans are sufficient to respond to unplanned releases of hazardous substances. Implementation of the provisions of this act began voluntarily in 1987, and inventory and annual emissions reporting began in 1988. DOE requires compliance with Title III as a matter of DOE policy at its contractor-operated facilities

Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (42 U.S.C. § 5121).

This act, as amended, provides an orderly, continuing means of providing federal government assistance to state and local governments in managing their responsibilities to alleviate suffering and damage resulting from disasters. The President, in response to a state governor's request, may declare an "emergency" or "major disaster" to provide federal assistance under this act. This act provides for the appointment of a federal coordinating officer who will operate in the designated area with a state coordinating officer for the purpose of coordinating state and local disaster assistance efforts with those of the federal government.

C.6.2 Federal Emergency Management and Response Regulations

Quantities of Radioactive Materials Requiring Consideration of the Need for an Emergency Plan for Responding to a Release (10 C.F.R. § 30.72, Schedule C). This section of the regulations provides a list that is the basis for both the public and private sector to determine whether the radiological materials they handle must have an emergency response plan for unscheduled releases, and is one of the threshold criteria documents for DOE hazards assessments required by DOE Order 151.1, "Comprehensive Emergency Management System."

Executive Order 12656 (Assignment of Emergency Preparedness Responsibilities, November 18, 1988). This Order assigns emergency preparedness responsibilities to federal departments and agencies. For DOE nuclear facilities, these responsibilities are assigned to the DOE.

C.7 Applicable Permitting and Approval Requirements

The New Facility Alternative is the only alternative that would require new permits, permit modifications, or approvals. Permits that have been identified as necessary for the New Facility Alternative are listed in Table C-3.

Table C-3: New Permits, Permit Modifications, or Approvals for the New Facility Alternative

Permit, Modification or Approval	Responsible Agency	Regulation or Sources
Permit to Construct a Non-Radionuclide Air Emissions Source	Idaho Department of Environmental Quality (IDEQ)	IDAPA 58.01.01 - Rules for the Control of Air Pollution in Idaho
Amendment to Tier I Operating Permit ¹	IDEQ	IDAPA 58.01.01 - Rules for the Control of Air Pollution in Idaho
Major Modification to Reuse Permit for Industrial Wastewater Facility ²	IDEQ	IDAPA 58.01.17 - Recycled Water Rules
Approval of Material Modification to Municipal Wastewater Treatment Facility ³	IDEQ	IDAPA 58.01.16 - Wastewater Rules
Approval of Simple Water Main Extension to Public Drinking Water System and/or Service Line Connection ^{4,5}	IDEQ/IPB	IDAPA 58.01.08 - Idaho Rules for Public Drinking Water Systems/Memorandum of Understanding between the IPB and IDEQ.
Construction Permits: Electrical, Plumbing, and Heating, Ventilation, and Air-Conditioning (HVAC)	Idaho Division of Building Safety	IDAPA 07.01.01 IDAPA 07.02.04 IDAPA 07.07.01

¹ Only required for the New Facility Alternative if the contractors selected to provide concrete batch plant operations operate under Permit By Rule or a general Permit to Construct.

² Required for the New Facility Alternative from infrastructure changes necessary to get wastewater to the Industrial Waste Ditch

³ A new municipal wastewater force main and additional service connections are required for the New Facility Alternative (Section 4.11). The new force main is considered a “material modification” to the NRF sewage system.

⁴ A water main extension would be necessary to connect the existing drinking water system to the new facility. The required connection would be considered a “simple water main extension” because it does not require the addition of system components designed to control quantity or pressure, including booster stations, new sources, pressure reducing stations, or reservoirs.

⁵ Service line connection (from main to building) falls under the jurisdiction of the Idaho Division of Building Safety – Plumbing Bureau (IPB).

APPENDIX D

SUMMARY OF CULTURAL RESOURCE INVESTIGATIONS

D.1 Introduction

This Appendix documents a summary of the cultural resource investigations conducted to support the evaluation of impacts from the proposed action. This information was provided to the Idaho State Historic Preservation Office (SHPO) and the Shoshone-Bannock Tribes as documented in Appendix B along with their responses.

D.2 Background and Objectives

The National Environmental Policy Act (NEPA) requires consideration of whether an action could potentially violate federal, state, or local laws or requirements (40 C.F.R § 1508.27) or require a federal permit, license, or other entitlements (40 C.F.R. § 1502.25). Protection and conservation of cultural and historic resources is achieved through Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended; its implementing regulations (36 C.F.R. § 800) require that federal agencies consider the effects of their undertakings on historic properties (e.g., cultural resources that have been included in or that have been determined to be eligible for inclusion in the National Register of Historic Places (NRHP, or National Register)).

Battelle Energy Alliance (BEA), Cultural Resource Management Office, performed archival investigations for Naval Reactors Facility (NRF) areas being considered for the proposed action. With the archival investigations, BEA assessed overall cultural resource sensitivity in the vicinity of NRF.

Follow-on field investigations were limited to the temporary disturbance areas for the New Facility Alternative (Location 3/4 and Location 6) and for the Overhaul Alternative. The general purpose of the field investigations was to provide site-specific information from which the Naval Nuclear Propulsion Program (NNPP) could draw conclusions regarding potential impacts to cultural resources. Specific objectives were to:

- Identify cultural resources within the temporary disturbance areas associated with the proposed action.
- Conduct a preliminary assessment of the potential effects of land disturbance on any identified cultural resources, particularly those listed on or eligible for listing on the NRHP.
- Develop specific recommendations for strategies to complete National Register assessments of identified resources and general recommendations to avoid or reduce unavoidable adverse effects.

Two reports were prepared during the evaluation of potential impacts. The first report was prepared based on surveys conducted in 2011 (INL 2011b). A second report was prepared documenting some additional survey work and additional investigations (INL 2013d). To the extent feasible, temporary disturbance areas would be located to minimize impacts to cultural resources. These reports describe methods and results of the archival search and field investigations. The full reports were provided to the Idaho SHPO and the Shoshone-Bannock Tribes. Table D-1 provides a summary of the resources found during cultural resource investigations.

It was determined through the evaluation in Section 4.8, information in the cultural resource survey report, information in the cultural resource investigations report, and consultation with the Idaho SHPO and the Shoshone-Bannock Tribes that there would be no adverse effect to historic properties eligible for listing on the NRHP impacted by the proposed action. Even though the small archaeological sites that have been identified are not eligible for the NRHP, the historical record described in the Idaho National Laboratory (INL) Cultural Resources Management Plan supports the conclusion that INL, including the proposed disturbance areas, is located within a large original territory of the Shoshone-Bannock people and archaeological and other cultural resources that reflect the importance of the area to the Tribes are located there. The Shoshone-Bannock Tribes agreed that the construction of the new facility at NRF would have small unavoidable impacts to Native American cultural resources (small archaeological sites and ecological resources) identified in the survey areas for Location 3/4 and Location 6 of the New Facility Alternative.

Table D-1: Summary of Cultural Resource Surveys and Investigations

Site Number	Description	Status	National Register Evaluation	Recommendation
10-BT-944	General Prehistoric (12,000 - 150 BP) Lithic Scatter South of NRF	Originally recorded in 1985 as a dense scatter of 200 flakes and expedient flake tools (Reed & Ringe 1985). Test excavations completed in 2012: seventy 30 x 30 centimeter shovel probes and two 1 x 1 meter test pits; no cultural features or strata identified (INL 2012, INL 2013d). The resource is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work
10-BT-945	Middle Prehistoric (7,500 - 1,300 BP) Campsite East of NRF	Originally recorded in 1985 as a scatter of 40 flakes and dart point fragments (Reed & Ringe 1985). Test excavations completed in 2011 (due to the location of the resource in the temporary disturbance area): fifteen 30 x 30 centimeter shovel probes and one 1 x 1 meter test pit; no cultural features or strata identified (INL 2013d).	Ineligible	No further work
10-BT-947	Late Prehistoric (1,300 - 150 BP) Campsite East of NRF	Originally recorded in 1985 as a scatter of six flakes and two arrow point fragments (Reed & Ringe 1985). Test excavations completed in 2011 (due to the location of the resource in the temporary disturbance area): fifteen 30 x 30 centimeter shovel probes and one 1 x 1 meter test pit; no cultural features or strata identified (INL 2013d).	Ineligible	No further work

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
10-BT-948	General Prehistoric (12,000 - 150 BP) Lithic Scatter East of NRF	Originally recorded in 1985 as a scatter of 10 flakes (Reed & Ringe 1985). Test excavations completed in 2011 (due to the location of the resource in the temporary disturbance area): twenty 30 x 30 centimeter shovel probes and one 1 x 1 meter test pit; no cultural features or strata identified (INL 2013d).	Ineligible	No further work
10-BT-1038	Middle Prehistoric III (3,500 - 1,300 BP) Lithic Scatter East of NRF	Originally recorded in 1985 as a scatter of 29 flakes and an Elko Corner-notched point fragment (Reed et al. 1987). Test excavations completed in 2011: fifty 30 x 30 centimeter shovel probes and one 1 x 1 meter test pit; no cultural features or strata identified (INL 2013d). The resource is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work
INL-09-04-01	General Prehistoric (12,000 - 150 BP) Lithic Scatter West of NRF	Originally recorded in 2009 as a scatter of 25 flakes (INL 2011b). Test excavations completed in 2011 (due to the location of the resource in the temporary disturbance area): twelve 30 x 30 centimeter shovel probes and one 1 x 1 meter test pit; no cultural features or strata identified (INL 2013d).	Ineligible	No further work

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
INL-91-12-01	General Prehistoric (12,000 - 150 BP) Campsite East of NRF	Originally recorded in 1991 as a scatter of 20 flakes and expedient scraping tools with two concentrations of fire-cracked rock indicating possible fire hearths (Ringe 1995). Test excavations completed in 2012 (due to the location of the resource in the temporary disturbance area): twenty-two 30 x 30 centimeter shovel probes and one 1 x 1 meter test pit; no cultural features or strata identified (INL 2013d).	Ineligible	No further work
INL-91-12-02	General Prehistoric (12,000 - 150 BP) Campsite East of NRF	Originally recorded in 1991 as a scatter of ten flakes and a few fragments of fire-cracked rock that may represent a fire hearth (Ringe 1995). Test excavations completed in 2012 (due to the location of the resource in the temporary disturbance area): five 30 x 30 centimeter shovel probes, one 1 x 1 meter test pit, with no subsurface artifacts found and no cultural features or strata identified (INL 2013d).	Ineligible	No further work

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
10-BT-949	General Prehistoric (12,000 - 150 BP) Lithic Scatter East of NRF	Originally recorded in 1985 as a scatter of approximately 20 flakes and a nondiagnostic biface fragment (Reed & Ringe 1985). Surface conditions in this area have changed since this site was originally recorded. Thin scatter of artifacts could not be re-identified in 2010, 2011, or 2012 (INL 2011b, INL 2013d) in the temporary disturbance areas for the proposed action.	Ineligible	No further work
INL-91-12-05	General Prehistoric (12,000 - 150 BP) Campsites Southeast of NRF	Originally recorded in 1991 as a dispersed scatter of three flakes and one fire-cracked cobble possibly indicating a fire hearth (Ringe 1995). Surface conditions in this area have changed since this site was originally recorded. Sparse scatter of artifacts could not be re-identified in 2012 (INL 2013d). The resource is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
10-BT-933	General Prehistoric (12,000 - 150 BP) Lithic Scatter North of NRF	<p>Originally recorded in 1985 as a scatter of 45 flakes and one utilized flake (Reed & Ringe 1985). Re-identified in 2011 and 2012 as a small scatter of flakes (INL 2011b, INL 2013d).</p> <p>The resource is potentially eligible for nomination to the NRHP; however, it is located outside the temporary disturbance areas for the proposed action.</p>	Potentially eligible	Avoidance is feasible
10-BT-934	Late Prehistoric II (750 - 150 BP) Campsite North of NRF	<p>Originally recorded in 1985 as three activity areas including dense flake concentrations, formal and expedient scraping tools, a knife, biface fragments, two Desert Side-notched arrow point fragments, and an arrow perform (Reed & Ringe 1985). Re-identified in 2012 as a dense artifact scatter (INL 2013d).</p> <p>The resource is potentially eligible for nomination to the NRHP; however, it is located outside the temporary disturbance areas for the proposed action.</p>	Potentially eligible	Avoidance is feasible

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
10-BT-937	General Prehistoric (12,000 - 150 BP) Campsite North of NRF	Originally recorded in 1985 as a scatter of 40 flakes, two nondiagnostic biface fragments, an exhausted lithic core, and fire-cracked rock fragments suggesting that a fire hearth may be present (Reed & Ringe 1985). Re-identified in 2012 as a small scatter of artifacts (INL 2013d). The resource is potentially eligible for nomination to the NRHP; however, it is located outside the temporary disturbance areas for the proposed action.	Potentially eligible	Avoidance is feasible
10-BT-940	Middle Prehistoric (7500 - 1300 BP) Lithic Scatter Northwest of NRF	Originally recorded in 1985 as a thin scatter of 17 flakes, a large notched dart point fragment, and an expedient flake tool (Reed & Ringe 1985). Re-identified in 2012 as a sparse scatter of flakes (INL 2013d). The resource is potentially eligible for nomination to the NRHP; however, the site is unlikely to yield additional information and is located outside the temporary disturbance areas for the proposed action.	Potentially eligible	Avoidance is feasible

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
10-BT-941	General Prehistoric (12,000 - 150 BP) Campsite Northwest of NRF	Originally recorded in 1985 as a dispersed scatter of 20 flakes and utilized flakes (Reed & Ringe 1985). Re-identified in 2012 as a small scatter of artifacts (INL 2013d). The resource is potentially eligible for nomination to the NRHP; however, it is located outside the temporary disturbance areas for the proposed action.	Potentially eligible	Avoidance is feasible
10-BT-950	General Prehistoric (12,000 - 150 BP) Lithic Scatter Northwest of NRF	Originally recorded in 1985 as a scatter of 14 flakes (Reed & Ringe 1985). Re-identified in 2012 as a sparse scatter of flakes (INL 2013d). The resource is potentially eligible for nomination to the NRHP; however, the site is unlikely to yield additional information and is located outside the temporary disturbance areas for the proposed action.	Potentially eligible	Avoidance is feasible

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
10-BT-951	Historic (circa 1908) Canal construction camp Northwest of NRF	Originally recorded in 1985 as a canal construction camp with a rock feature, a dense scatter of domestic debris, and other cultural features (Reed & Ringe 1985). Re-identified in 2012 as a dense scatter of artifacts and cultural features (INL 2013d). The resource is potentially eligible for nomination to the NRHP; however, it is located outside the temporary disturbance areas for the proposed action.	Potentially eligible	Avoidance is feasible
10-BT-1037	Historic (circa 1909) Homestead Northeast of NRF	Originally recorded in 1985 as a homestead with a probable root cellar, corral, and a dense scatter of domestic artifacts (Reed et al. 1987, Ringe & Holmer 1988). Re-identified in 2011 and 2012 as a dense scatter of historic artifacts and cultural features (INL 2011b, INL 2013d). The resource is potentially eligible for nomination to the NRHP; however, it is located outside the temporary disturbance areas for the proposed action.	Potentially eligible	Avoidance is feasible

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
INL-95-52-08	General Prehistoric (12,000 - 150 BP) Lithic Scatter Southwest of NRF	<p>Originally recorded in 1995 as a dispersed scatter of five flakes and a nondiagnostic biface fragment (Ringe 1995). Re-identified as a sparse scatter of flakes in 2012 (INL 2013d).</p> <p>The resource is potentially eligible for nomination to the NRHP; however, the site is unlikely to yield additional information and is located outside the temporary disturbance areas for the proposed action.</p>	Potentially eligible	Avoidance is feasible
INL-95-52-09	Late Prehistoric I (1300 - 750 BP) Campsite Southwest of NRF	<p>Originally recorded in 1995 as a campsite with ten flakes, two Rosegate Corner-notched arrow points, and a possible fire hearth (Ringe 1995). Re-identified in 2011 and 2012 as a sparse scatter of flakes (INL 2011b, INL 2013d).</p> <p>The resource is potentially eligible for nomination to the NRHP; however, it is located outside the temporary disturbance areas for the proposed action.</p>	Potentially eligible	Avoidance is feasible

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
INL-95-52-10	General Prehistoric (12,000 - 150 BP) Campsite Southwest of NRF	Originally recorded in 1995 as a dispersed scatter of 20 flakes, burned bone, and fire-cracked rock fragments indicating a possible fire hearth (Ringe 1995). Re-identified in 2011 and 2012 as a small scatter of artifacts (INL 2011b, INL 2013d). The resource is potentially eligible for nomination to the NRHP; however, it is located outside the temporary disturbance areas for the proposed action.	Potentially eligible	Avoidance is feasible
INL-11-01-01	General Prehistoric (12,000 - 150 BP) Campsite East of NRF	Originally recorded in 2011 as a scatter of 12 flakes and a piece of fire-cracked rock indicating a possible fire hearth (INL 2011b). Re-identified in 2012 as a sparse scatter of artifacts (INL 2013d). The resource is potentially eligible for nomination to the NRHP; however, it is located outside the temporary disturbance areas for the proposed action.	Potentially eligible	Avoidance is feasible

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
INL-12-04-10	General Prehistoric (12,000 - 150 BP) Campsite Northwest of NRF	<p>Sparse and dispersed scatter of five flakes and a fire-cracked rock fragment indicating a possible fire hearth identified during intensive surveys in 2012 (INL 2013d). Due to potentially datable subsurface deposits, limited test excavations were conducted. The resource is potentially eligible for nomination to the NRHP; however, the test excavations resulted in no substantial cultural deposits that would merit NRHP listing. The resource is located outside the temporary disturbance areas for the proposed action.</p>	Potentially eligible	Avoidance is feasible
INL-12-04-11	General Prehistoric (12,000 - 150 BP) Campsite Northwest of NRF	<p>Sparse scatter of four flakes and a fire-cracked rock fragment indicating a possible fire hearth identified in intensive surveys in 2012 (INL 2013d). Due to potentially datable subsurface deposits, limited test excavations were conducted. The resource is potentially eligible for nomination to the NRHP; however, the test excavations resulted in no substantial cultural deposits that would merit NRHP listing. The resource is located outside the temporary disturbance areas for the proposed action.</p>	Potentially eligible	Avoidance is feasible

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
INL-12-04-12	Historic (circa 1942-1949) Road	West Monument Road, a development associated with the Arco Naval Proving Ground, recorded during intensive surveys in 2012 (INL 2013d). The resource is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work
10-BT-935	Late Prehistoric (1300 - 150 BP) Isolate Location	Small notched arrow point was collected in 1985 (Reed & Ringe 1985). No new artifacts were identified in this area in 2012. Location is unlikely to yield additional information and is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work
10-BT-936	General Prehistoric (12,000 - 150 BP) Isolate Location	Retouched flake was collected in 1985 (Reed & Ringe 1985). No new artifacts were identified in this area in 2012. Location is unlikely to yield additional information and is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
10-BT-938	Middle Prehistoric (7500 - 1300 BP) Isolate Location	Large notched dart point fragment was collected in 1985 (Reed & Ringe 1985). No new artifacts were identified in this area in 2012. Location is unlikely to yield additional information and is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work
10-BT-939	General Prehistoric (12,000 - 150 BP) Isolate Location	Nondiagnostic biface midsection was collected in 1985 (Reed & Ringe 1985). No new artifacts were identified in this area in 2012. Location is unlikely to yield additional information and is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work
10-BT-942	Middle Prehistoric II (5000 - 3500 BP) Isolate Location	Stemmed-indented base dart point collected in 1985 (Reed & Ringe 1985). No new artifacts were identified in this area in 2010 or 2011 (INL 2011b). Location is unlikely to yield additional information despite being located in the temporary disturbance areas for the proposed action.	Ineligible	No further work

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
10-BT-943	General Prehistoric (12,000 - 150 BP) Isolate Location	Retouched flake collected in 1985 (Reed & Ringe 1985). No artifacts were identified in this area in 2010 or 2011 (INL 2011b). Location is unlikely to yield additional information despite being located in the temporary disturbance areas for the proposed action.	Ineligible	No further work
10-BT-946	General Prehistoric (12,000 - 150 BP) Isolate Location	Nondiagnostic biface tip collected in 1985 (Reed & Ringe 1985). No artifacts were identified in this area in 2010 or 2011 (INL 2011b). Location is unlikely to yield additional information despite being located in the temporary disturbance areas for the proposed action.	Ineligible	No further work
10-BT-964	General Prehistoric (12,000 - 150 BP) Isolate Location	Retouched flake collected in 1985 (Reed et al. 1987). No artifacts were identified in this area in 2010 or 2011 (INL 2011b). Location is unlikely to yield additional information despite being located in the temporary disturbance areas for the proposed action.	Ineligible	No further work

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
10-BT-965	General Prehistoric (12,000 - 150 BP) Isolate Location	Conjoining nondiagnostic biface fragments collected in 1985 (Reed et al. 1987). No artifacts were identified in this area in 2012. Location is unlikely to yield additional information and is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work
10-BT-1379	Middle Prehistoric (7500 – 1300 BP) Isolate Location	Large notched projectile point collected in 1988 (Ringe & Holmer 1988). No artifacts were identified in this area in 2012. Location is unlikely to yield additional information and is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work
INL-91-12-03	Historic (circa 1880 - 1920) Isolate Location	Half-pint solarized milk bottle collected in 1991 (Ringe 1995). No new artifacts were identified in this area in 2010 or 2011 (INL 2011b). Location is unlikely to yield additional information despite being located in the temporary disturbance areas for the proposed action.	Ineligible	No further work

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
INL-91-12-04	General Prehistoric (12,000 - 150 BP) Isolate Location	Nondiagnostic biface midsection collected in 1995 (Ringe 1995). No artifacts were identified in this area in 2010 or 2011 (INL 2011b). Location is unlikely to yield additional information despite being located in the temporary disturbance areas for the proposed action.	Ineligible	No further work
INL-95-52-06	General Prehistoric (12,000 - 150 BP) Isolate Location	Nondiagnostic biface midsection collected in 1995 (Ringe 1995). No artifacts were identified in this area in 2010 or 2011 (INL 2011b). Location is unlikely to yield additional information despite being located in the temporary disturbance areas for the proposed action.	Ineligible	No further work
INL-95-52-07	Late Prehistoric II (750 - 150 BP) Isolate Location	Desert Side-notched arrow point fragment collected in 1995 (Ringe 1995). No artifacts were identified in this area in 2012. Location is unlikely to yield additional information despite being located in the temporary disturbance areas for the proposed action.	Ineligible	No further work

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
INL-11-01-02	General Prehistoric (12,000 - 150 BP) Isolate Location	Nondiagnostic biface fragment identified in 2011 (INL 2011b). Artifact was collected in 2012. Location is unlikely to yield additional information despite being located in the temporary disturbance areas for the proposed action.	Ineligible	No further work
INL-11-01-03	General Prehistoric (12,000 - 150 BP) Isolate Location	Nondiagnostic scraping tool identified in 2011 (INL 2011b). Artifact was collected in 2012. Location is unlikely to yield additional information despite being located in the temporary disturbance areas for the proposed action.	Ineligible	No further work
INL-11-01-04	General Prehistoric (12,000 - 150 BP) Isolate Location	Three nondiagnostic unmodified flakes identified in 2011 (INL 2011b). No new artifacts identified in this area in 2012. Location is unlikely to yield additional information and is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work
INL-12-04-01	General Prehistoric (12,000 - 150 BP) Isolate Location	Nondiagnostic biface fragment identified in 2012 (INL 2013d). Location is unlikely to yield additional information and is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
INL-12-04-02	General Prehistoric (12,000 - 150 BP) Isolate Location	Six nondiagnostic unmodified flakes identified in 2012 (INL 2013d). Location is unlikely to yield additional information and is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work
INL-12-04-03	Historic (circa 1942 – 1952) Isolate Location	Ceramic insulator identified in 2012 (INL 2013d). The resource is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work
INL-12-04-04	Historic (circa 1942 – 1949) Isolate Location	Three concrete panels (approximately 1 x 6 meter x 20 centimeter) identified in 2012 (INL 2013d). The resource is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work
INL-12-04-05	Historic (circa 1942 – 1949) Isolate Location	Cement survey monument identified in 2012 (INL 2013d). The resource is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work
INL-12-04-06	Modern (circa 1960 – 2000) Rock Feature	Rock cairn constructed by NRF employee identified in 2012 (INL 2013d). The resource is potentially eligible for nomination to the NRHP; however, it is located outside the temporary disturbance areas for the proposed action.	Potentially eligible	Avoidance is feasible

Table D-1: Summary of Cultural Resource Surveys and Investigations (cont.)

Site Number	Description	Status	National Register Evaluation	Recommendation
INL-12-04-07	Late Prehistoric II (750 - 150 BP) Isolate Location	Desert Side-notched arrow point fragment collected in 2012 (INL 2013d). Location is unlikely to yield additional information despite being located in the temporary disturbance areas for the proposed action.	Ineligible	No further work
INL-12-04-08	Middle Prehistoric (7500 – 1300 BP) Isolate Location	Large notched dart point collected in 2012 (INL 2013d). Location is unlikely to yield additional information despite being located in the temporary disturbance areas for the proposed action.	Ineligible	No further work
INL-12-04-09	Late Prehistoric II (750 - 150 BP) Isolate Location	Desert Side-notched arrow point fragment identified in 2012 (INL 2013d). Location is unlikely to yield additional information and is located outside the temporary disturbance areas for the proposed action.	Ineligible	No further work

