

2.0 Activities since the Issuance of the Draft EIS

2.1 Summary of Public Comments and Agency Responses

The Draft EIS was mailed to the public and made available on the Internet (<http://tis.eh.doe.gov/nepa/>) in January 2000. A Notice of Availability was published by the U.S. Environmental Protection Agency (EPA) (65 FR 3448, January 21, 2000) formally initiating the public comment period. DOE also published a Notice of Availability (65 FR 3432, January 21, 2000) that provided information on how the public could obtain copies of the Draft EIS and encouraged comments on the Draft EIS via mail, electronically by the World Wide Web, or at public hearings during a 60-day public comment period. Public hearings were held in: Idaho Falls, Pocatello, Twin Falls, and Boise, Idaho; Jackson, Wyoming; Portland, Oregon; and Pasco, Washington. DOE subsequently extended the public comment period to 90 days (65 FR 9257, February 24, 2000) and added another public hearing in Fort Hall, Idaho.

DOE received more than 1,000 comments from about 100 individuals and organizations, all of which have been considered in preparing the Final EIS. (See the Comment Response Document, Chapter 11, which summarizes the comments received and provides responses to those summaries. See Appendix D for comment documents.) In developing its responses, DOE assembled a group including representatives of the INEEL Citizen's Advisory Board, Shoshone-Bannock Tribes, State of Idaho, and the management and operating contractor for INEEL to summarize key concerns identified during the public comment period. Based on these efforts, the key issues of concern to the public and DOE responses include:

- *Preference for treatment alternatives - Commentors expressed opinions in support of, or against, various alternatives.*

DOE and the State of Idaho have identified their preferred alternatives for treating cal-

cine and mixed transuranic waste/SBW. DOE carefully considered comments received on the Draft EIS in the process of identifying a Preferred Alternative. DOE also considered a variety of factors such as environmental impacts, programmatic needs, safety and health, technical viability, ability to meet regulatory milestones and agreements, and cost. In addition, information received after the Draft EIS was published was considered (see Section 2.2 of this Summary). Each of the treatment alternatives and options offers advantages and disadvantages, which are presented in this EIS.

- *Calciner operations and thermal treatment - Comments relating to operation of the New Waste Calcining Facility calciner fell into two groups: those supporting the use of the calciner, and those opposing its use. Although commentors expressed a range of positions relating to technologies (and thus alternatives) that employ thermal treatment, including support for vitrification, others opposed thermal treatment such as incineration.*

DOE considered all comments regarding the use of the calciner and thermal and non-thermal treatment technologies as well as their relative advantages and disadvantages for treatment of mixed HLW and mixed transuranic waste/SBW. The alternatives evaluated in this EIS include thermal treatment technologies, such as calcination and vitrification (which are not considered incineration), and non-thermal treatment technologies, such as direct cement and separations. In addition, Steam Reforming, a thermal treatment technology similar to calcination, was also considered. The result of this evaluation process was the addition of a Steam Reforming Option, including shipment of the calcine to the repository, and a Direct Vitrification Alternative with two options: vitrification of the mixed transuranic waste/SBW and vitrification with or without separations for the mixed HLW calcine.

- New Information -

- ***Schedule for treatment - Some commentors urged DOE to treat liquid waste first because it represents a more serious threat to the environment than mixed HLW calcine.***

DOE recognizes there are risks associated with liquid waste storage, and over the years converted millions of gallons of mixed HLW and mixed transuranic waste/SBW into calcine, a more stable solid form. Though wastes in liquid form are not necessarily the most hazardous, they tend to be more difficult to contain and also represent the greatest potential threat to the aquifer, if storage facilities are not properly maintained or were to fail unexpectedly.

DOE considered these risks and as a result included the treatment of liquid waste before processing the calcine. Such an approach will also enable DOE to meet stipulations of the Settlement Agreement/Consent Order and Notice of Noncompliance Consent Order, which require DOE to treat all the liquid in the tanks and cease use of the eleven Tank Farm tanks by December 31, 2012.

- ***Classification of waste - Commentors were divided in their positions as to whether waste could or should be reclassified as mixed transuranic waste.***

In developing the waste processing alternatives analyzed in the EIS, DOE made certain assumptions about how the radioactive waste streams associated with treatment would be classified. In all cases, wastes would be classified in accordance with the requirements of the DOE Order 435.1 and its companion manual. Where appropriate, DOE will use the waste incidental to reprocessing process described in that manual to determine if a waste is high-level, transuranic, or low-level. The objective is not reclassification of the waste but a method to ensure proper treatment and disposal, consistent with DOE requirements. For example, DOE is currently conducting a waste incidental to reprocessing evaluation for the SBW to determine whether it is

transuranic waste or HLW. If it is determined to be transuranic waste then it may be treated and disposed of at the Waste Isolation Pilot Plant in New Mexico. Otherwise, it would be made ready for disposal in a HLW repository such as the one currently proposed at Yucca Mountain, Nevada. Under current requirements, this would require the mixed HLW to be delisted under the Resource Conservation and Recovery Act (RCRA).

- ***Repository issues - Commentors expressed concerns about the methods of calculating metric tons of heavy metal (MTHM), and DOE's current policy that would preclude repository acceptance of RCRA listed waste, such as INEEL's mixed HLW.***

DOE recognizes that several methods exist to calculate MTHM equivalency, each of which would affect the amount of INEEL HLW that could be disposed of in the proposed repository at Yucca Mountain. However, a final determination of the method used for calculating MTHM for the purposes of disposal in a repository is outside the scope of this EIS. MTHM equivalency is addressed in the *Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada* (DOE/EIS-0250).

Under the Nuclear Waste Policy Act, as amended, the Secretary of Energy has recommended that the President approve Yucca Mountain for development of a geologic repository. The President and Congress have approved the site. Nevertheless, Nuclear Regulatory Commission approval must be obtained to construct and operate the facility. Consequently, a schedule for the disposal of INEEL mixed HLW remains uncertain.

Lastly, DOE's current approach to address RCRA-regulated HLW includes implementation of the delisting process as discussed in this EIS (see Section 4.1 of this Summary, for example). Given the uncer-

tainties of whether the delisting process would enable the disposal of mixed HLW in the proposed repository at Yucca Mountain, DOE may consider alternative strategies under initiatives such as EPA's Project XL or pursue a strategy that would exclude the treated mixed HLW from regulation under RCRA as discussed in Chapter 6.

- *Impacts to air and water, including the Snake River Plain Aquifer - Commentors generally agreed that protection of air and water resources, particularly the Snake River Plain Aquifer, should be a primary concern.*

The EIS addresses the potential impacts to the environment, and specifically to the Snake River Plain Aquifer, from the range of reasonable alternatives and No Action. Storage facilities that could fail from natural phenomena could potentially result in releases to the environment. Concerns such as these underlie the purpose and need for this EIS, which will enable DOE to select processing technologies for preparing the waste for disposal so that it poses less risk to the environment and is ready to leave Idaho.

- *Public involvement - Commentors asked for continuing opportunities to participate in making decisions about HLW management.*

DOE is committed to ensuring that the public continues to have opportunities to provide input to Departmental decision-making. In the context of environmental reviews such as this EIS, DOE follows the Council on Environmental Quality and DOE regulations for public involvement, participation, and disclosure. This included opportunities for the public to participate in the development of the scope of the environmental review, and to comment on the Draft EIS. Outside of this context, DOE maintains other avenues of communication with the public that are germane to cleanup and waste management activities

and decisions. For example, DOE established the multidisciplinary INEEL Citizens Advisory Board in 1994 to review and make consensus-based recommendations to DOE on its activities and plans at the INEEL. Board meetings are open to the public, and the public is encouraged to attend and participate. DOE also routinely interacts with the media and other stakeholders to help keep the public informed of new initiatives, significant issues, and upcoming decisions of public interest.

- *Decision-making and obligations to states versus funding constraints - Commentors submitted a range of comments relating to the costs of implementing the EIS alternatives. Some commentors recommended that costs not be considered in decision-making while others were concerned that the cost estimates provided would result in biased decision-making or that alternatives were biased because of high costs. Commentors requested information about funding and asked to be involved if DOE has to reprioritize cleanup and waste management activities because of budget shortfalls.*

DOE acknowledges in this EIS that costs are a factor in its decision-making. DOE remains committed to meeting its obligations to the state. Nevertheless, in establishing commitments and in determining the mechanism to meet its commitments, DOE needs to be cognizant of funding availability. Thus, while costs are not an over-riding factor, as a practical matter they are a real issue that DOE must consider as part of the process of making reasonable and informed decisions.

DOE bases its funding requests for cleanup and waste management on addressing risk and meeting compliance requirements. There are opportunities for public involvement under NEPA, RCRA, and CERCLA which DOE considers in setting priorities.

- *Meeting agreements/requirements versus making sound technical decisions - Commentors were divided as to which should receive a higher priority: expediting treatment to meet Settlement Agreement/Consent Order and regulatory milestones, or taking more time to decide on an alternative that is technically sound.*

DOE considered the maturity of the technologies in identifying the range of reasonable alternatives analyzed in this EIS. The potential environmental impacts, health and safety, regulatory and Settlement Agreement/Consent Order milestones, and estimated cost will be balancing factors DOE will use in making a decision.

DOE also recognizes additional technology refinement, engineering studies, proof of process and scale-up demonstrations could be required to implement any of the action alternatives analyzed in this EIS. In anticipation of this situation, DOE could issue an EIS record of decision to implement an alternative in phases that may include interim decision points or amend the record of decision, if necessary. In this way DOE could address its commitments without prematurely committing to a single course of action.

- *Honoring policies/agreements/treaties with tribes - Shoshone-Bannock Tribal members maintained that DOE must honor all its promises to Native Americans.*

DOE recognizes the concerns of the Shoshone-Bannock Tribes and thus involved them early and frequently during the preparation of this EIS to ensure that tribal concerns and issues were considered. This involvement included hearings before and during the EIS scoping period, subsequent briefings and open discussions at tribal facilities, and a public hearing on the Fort Hall Reservation. DOE entered into an Agreement in Principle with the tribes that provides a process for consultation under NEPA, and DOE conducted consultations in accordance with this agreement. The agree-

ment also includes the process for the tribes to obtain the needed resources and expertise for reviews or involvement in DOE activities.

2.2 Other Considerations for EIS Alternatives

Information was received after the Draft EIS was approved for publication in response to DOE's requests to the National Academy of Sciences' National Research Council and DOE's Tanks Focus Area to conduct separate, independent reviews of treatment technologies. DOE has considered the results of these independent reviews as part of its analyses of the alternatives and in its identification of the Preferred Alternative.

National Academy of Sciences Assessment of Alternatives

In January 1998, DOE requested that the National Academy of Sciences' National Research Council review the technologies being considered for treatment of the mixed HLW calcine and the mixed transuranic waste/SBW. The National Academy of Sciences issued its review of the technologies in its document *Alternative High-Level Waste Treatments at the Idaho National Engineering and Environmental Laboratory* in December 1999.

Tanks Focus Area Assessment of Technologies

In June 2000, the DOE Tanks Focus Area was requested to review waste treatment technologies that were under consideration for this EIS. The Tanks Focus Area assessed the technical maturity and status of research and development, and identified technology gaps and uncertainties for each treatment technology.

The Tanks Focus Area also conducted a follow-up independent technical review of a proposed steam reforming treatment process for mixed transuranic waste/SBW. The purpose of this review was to determine the feasibility, applicability, and cost of this treatment option.

2.3 Changes from the Draft EIS

This EIS responds to public comments and reflects modifications from the Draft EIS in response to comments, and includes refined or new information and analyses that became available after the Draft EIS was published.

Modifications include:

- **Description of the Preferred Alternative.** DOE and the State of Idaho identified their Preferred Alternatives based on consideration of public comments and other information, including environment, safety, and health, schedule commitments, cost, technical risk, and disposal.
- **Analysis of the new Direct Vitrification Alternative and the Steam Reforming Option.** This alternative and option are described in Chapter 3. Impacts from these new analyses are included in tables and discussion in Chapter 5. As a component of the Steam Reforming Option, calcine would be retrieved from the bin sets and packaged for shipment to a HLW repository for disposal.
- **Refined air dispersion modeling results.** "CALPUFF", an air dispersion model, was used to estimate potential air quality impacts at more distant points from the INEEL within national parks that are characterized by Class I airsheds (see Section 5.2.6 and Appendix C.2).
- **Discussion of additional technologies and variations on alternatives.** As part of the analyses of the alternatives and process used to identify the Preferred Alternative, DOE assessed other technologies and options recommended by the public and the National Academy of Sciences (see Section 3.3, Alternatives Eliminated from Detailed Analysis, and Appendix B).
- **Increased waste volumes.** Five times higher waste volumes would be generated from vitrification of calcine at the Hanford Site than those analyzed under

the Minimum INEEL Waste Processing Alternative in the Draft EIS. This increase was due to updated information regarding the process at the Hanford Site. This increased waste generation led to changes in the impacts for this alternative (see Section 5.2.9 and Appendix C.8).

- **Refined source term information.** Using updated source terms (see Appendix C.7), facility accident analysis (see Appendix C.4 and Section 5.2.14) and long-term facility disposition analysis (see Appendix C.9 and Section 5.3.5) were performed to provide more refined estimates of potential impacts.
- **Sensitivity analyses.** The results of quantitative sensitivity analyses from the effects of changes in time of grout failure, infiltration rates, and distribution coefficients on the resulting impacts to human receptors have also been updated (see Appendix C.9).
- **Relevant discussion regarding the DOE Record of Decision for waste management.** DOE issued its Record of Decision to establish regional low-level and mixed low-level waste disposal at the Hanford Site and the Nevada Test Site. The Record of Decision also addressed the continuation of disposal of these wastes at the INEEL (see Section 2.3.1).
- **Waste Incidental to Reprocessing.** Information about the status of the waste incidental to reprocessing determination process under DOE Order 435.1 has been expanded (see Chapter 2, Section 2.2.2), and the possible designation and disposal destination of wastes under this procedure are reflected in more detail throughout the text of this EIS.
- **Updated affected environment.** Chapter 4, Affected Environment, has been updated by adding information to Sections 4.2, Land Use; 4.7, Air Resources; 4.8, Water Resources; 4.9, Ecological Resources; and 4.11, Health and Safety.