6. REFERENCES

- American Conference of Governmental Industrial Hygienists (ACGIH), 1991. Guide to Occupational Exposure Values-1991, Cincinnati, Ohio.
- Atwood, C. L., 1992. Statistical Analysis of Radiological Data from WERF Fly Ash, EGG-SR-10233.
- Berry, W. J. and J. L. Petty, 1990. Summary of Available Baseline Environmental Information for the Radioactive Waste Management Complex at the Idaho National Engineering Laboratory, EGG-WM-9063, EG&G Idaho, Inc., Idaho Falls, Idaho.
- Bowman et al., 1984. *INEL Environmental Characterization Report*, EGG-NPR-6688, EG&G Idaho, Inc., Idaho Falls, Idaho.
- DOE (U.S. Department of Energy), 1980. Final Environmental Impact Statement, U.S. Spent Fuel Policy, DOE/EIS-0015, Assistant Secretary for Nuclear Energy, Washington, D.C.
- DOE (U.S Department of Energy), 1988. Radioactive Waste Management. DOE Order 5820.2A, September 26, 1988. Attachment VI-1, Page C3-2, Idaho Field Office, Idaho Falls, Idaho.
- DOE (U.S. Department of Energy), 1991a. INEL Low-Level Waste Acceptance Criteria, DOE/ID-10112, Rev. 4, Idaho Field Office, Idaho Falls, Idaho.
- DOE (U.S. Department of Energy), 1991b. The Idaho National Engineering Laboratory Site Environmental Report for Calendar Year 1990. DOE/ID-12082(90), Idaho Field Office, Idaho Falls, Idaho.
- DOE (U.S. Department of Energy), 1991c. 1990 INEL National Emission Standard for Hazardous Air Pollutants Annual Report. DOE/ID-10342, Idaho Field Office, Idaho Falls, Idaho.
- DOE (U.S. Department of Energy), 1992a. 1991 INEL National Emission Standard for Hazardous Air Pollutants Annual Report. DOE/ID-10342(915), Idaho Field Office, Idaho Falls, Idaho.
- DOE (U.S. Department of Energy), 1992b. Environmental Assessment Consolidated Incineration Facility Savannah River Site. DOE/EA-0400, 57 FR 29299.
- Elder, J. C. et al., 1986. A Guide to Radiological Accident Considerations for Siting and Design of DOE Nonreactor Nuclear Facilities, Los Alamos National Laboratory, LA-10294-MS, Los Alamos, New Mexico.
- EPA (U.S. Environmental Protection Agency), and NCI (National Cancer Institute), 1983. U.S. Cancer Mortality Rates and Trends, 1950-1979. EPA-600/1-83-015C.
- EPA (U.S. Environmental Protection Agency), 1989a. The Clean Air Act Assessment Package-1988 (CAP-88), Office of Radiation Programs.

- EPA (U.S. Environmental Protection Agency), 1989b. Emission Standards for Hazardous Air Pollutants; Radionuclides; Final Rule and Notice of Reconsideration, 40 CFR 61, Federal Register, December 15, 1989.
- EPA (U.S. Environmental Protection Agency), 1989c. Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A), EPA-540-1-89-002.
- EPA (U.S. Environmental Protection Agency), 1989d. "Guidance on Metals and Hydrogen Chloride Controls for Hazardous Waste Incinerators", Volume IV of the Hazardous Waste Incineration Guidance Series, EPA-530/SW-90-004, August 1989.
- EPA (U.S. Environmental Protection Agency), 1990. "Standards for Owners and Operators of Hazardous Waste Incinerators and Burning of Hazardous Wastes in Boilers and Industrial Furnaces," Federal Register Vol. 55 #82.
- EPA (U.S. Environmental Protection Agency), 1992. "Health Effects Assessment Summary Tables", Annual FY 1992 OERR 9200.6-303-(92-1).
- Grove Engineering, Inc., 1988. Microshield Version 3, Rockville, Maryland.
- Lobdell, C. H., 1992. USFWS to C. R. Nichols, DOE-ID Department of Energy Species List Update, SP# 1-4-93-SP-84/506.0000.
- Moseley, R. and C. Groves, 1992. Rare, Threatened and Endangered Plants and Animals of Idaho, Conservation Data Center, Nongame and Endangered Wildlife Program, Idaho Department of Fish and Game.
- NIOSH (National Institute of Occupational Safety and Health), 1990. "Pocket Guide to Chemical Hazards", DHHS (NIOSH) Publication No. 90-117.
- NRC (Nuclear Regulatory Commission), 1977. Final Environmental Statement on the Transportation of Radioactive Material by Air and Other Modes, Office of Standards Development, NUREG-0170, Volume 1.
- NRC (Nuclear Regulatory Commission), 1982. Final Environmental Impact Statement (FEIS), Licensing Requirements for Land Disposal of Radioactive Waste, NUREG-0945, Volume 1.
- NRC (Nuclear Regulatory Commission), 1991. Standards for Protection Against Radiation, 56 FR 23363, May 21, 1991.
- Rao, R. K., E. L. Wilmot, and R. E. Luna, 1981. *Nonradiological Impacts of Transporting Radioactive Material*, SAND81-1703, Sandia National Laboratories, Albuquerque, New Mexico.

- Reed, W. G., J. W. Ross, B. L. Ringe, and R. N. Holmer, 1987. Archaeological Investigations on the Idaho National Engineering Laboratory: 1984-1985, Revised Edition, Swanson/Crabtree Anthropological Research Laboratory Reports of Investigations No. 87-2, Pocatello, Idaho.
- Reynolds, T. D., J. W. Connelly, D. K. Halford, and W. J. Arthur, 1986. Vertebrate Fauna of the Idaho National Environmental Research Park, Great Basin Naturalist 46, pp. 513-527.
- Rothman, R. S., 1992. letter to Armina Nolan, EPA Region X, AM-SES-ESB-32, January 31, 1992.
- Schofield, W. D., 1992a. Earthquake Analysis for WERF, Engineering Design File No. WERF-0164, EG&G Idaho, Inc., Idaho Falls, Idaho.
- Schofield, W. D., 1992b. North Stack HEPA and Baghouse Filter Fire, Engineering Design File No. WERF-0159, EG&G Idaho, Inc., Idaho Falls, Idaho.
- Schofield, W. D., 1992c. Ash Handling Spill, Engineering Design File No. WERF-0154, EG&G Idaho, Inc., Idaho Falls, Idaho.
- Schofield, W. D., 1992d. WERF Compactor Fire, Engineering Design File No. WERF-0155, EG&G Idaho, Inc., Idaho Falls, Idaho.
- Staley, C. S., 1992a. CAP-88 Runs Supporting Source Term Development for WERF Restart, Engineering Design File No. WERF-91-001.2, Revision 1, EG&G Idaho, Inc., Idaho Falls, Idaho.
- Staley, C. S., 1992b. Derived Source Limits for Nonradiological Waste Constituents for the WERF Incinerator, Engineering Design File No. WERF-91-001.1, EG&G Idaho, Inc., Idaho Falls, Idaho.
- Start, G. E., 1993. Letter to J. Edson, Reference Meteorological Values for PBF Dispersion Calculations, January 22, 1993.
- Sterling, R. J., 1992. Application for a State of Idaho Permit to Construct an Air Pollution Source at the Idaho National Engineering Laboratory Power Burst Facility Area: The Waste Experimental Reduction Facility, EGG-WMO-10355.
- U.S. Bureau of Land Management, 1990. Final Environmental Impact Statement: USPCI Clive Incineration Facility, Salt Lake District Office, Salt Lake City, Utah.
- U.S. Department of Commerce, Bureau of Census, 1990. Census of Population and Housing, 1990, Public Law 94-171 Data on CD-ROM Technical Documentation (prepared 1991).
- Walker, E., 1986. A Summary of Parameters Affecting the Release and Transport of Radioactive Material from an Unplanned Incident, BNFO-81-2.
- Wenzel, D. R., 1990. Interim Users Manual for RSAC-4, Radiological Safety Analysis Computer Program, Version 4.03.

Wolfe, T. A., 1984. The Transportation of Nuclear Materials, SAND84-0062, Sandia National Laboratories, Albuquerque, New Mexico.

7. GLOSSARY

Accepted Ambient Levels for a Carcinogen (AALC)—Pertaining to carcinogens with a unit risk factor (URF), the AALC is the concentration at which the probability of excess cancers over a lifetime is one in one million or less. For carcinogens that do not have an established URF, the AALC is the detection limit.

Baghouse Fly Ash—Finely divided particles of ash from incinerator flue gases that are entrapped in a housing containing fabric filters.

Characteristic Hazardous Waste—A solid waste exhibiting any of the following characteristics as defined in 40 CFR 261, Subpart C: ignitability, corrosivity, reactivity, and toxicity.

Contact-Handled Low-Level Waste—Low-level waste with a radiation field of less than 500 mrem at 3 ft.

Controlled-Air Incinerator—An incinerator in which the combustion air into the incinerator is controlled.

Criteria Pollutants-Substances for which national ambient air quality standards are established.

Cultural Resources—Areas or objects that are of cultural significance to Native Americans and other defined ethnic groups.

Decommissioning—The process of removing a facility from operation, followed by decontamination, entombment, dismantlement, or conversion to another use.

Decontamination—The removal of unwanted material (typically radioactive material) from facilities, soils, or equipment by washing, chemical action, mechanical cleaning, or other techniques.

Destruction and Removal Efficiency (DRE)—The fraction of hazardous waste that is destroyed by a hazardous waste incinerator.

Effective Dose Equivalent (EDE)—The sum of the products of absorbed dose and appropriate factors to account for differences in biological effectiveness due to the quality of radiation and its distribution in the body.

Environmental Protection Agency Technology Based Treatment Standard—Treatment technologies that have been shown through actual use to yield the greatest environmental benefit among competing technologies that are practically available.

Etiologic Agents-The cause of a disease.

Filtration Residue-Particulates that are filtered out of offgas.

Fumigation—Fumigation is a meteorological phenomenon that occurs when the temperature inversion at the surface is being broken up by surface heating. The inversion breakup creates moderately unstable conditions under an inversion lid and, thereby, limits vertical dispersion to the area between the ground and the base of the inversion.

Hazardous Waste—Any solid, semisolid, liquid, or gaseous waste that is ignitable, corrosive, toxic, or reactive as defined by the RCRA and identified or listed in 40 CFR 261.

Hazardous Constituents—Components of waste that are defined by the Environmental Protection Agency (EPA) as hazardous.

High Efficiency Particulate Air (HEPA) Filter—Filters having a minimum 99.97% removal efficiency for 0.3 micron particles.

Immediately Dangerous to Life and Health (IDLH)—The maximum concentration from which one could escape within 30 min without any escape-impairing symptoms or irreversible health effects.

Incinerable Waste-Waste that qualifies for incineration as a treatment.

Incineration—A treatment technology using combustion to destroy organic constituents and reduce the volume of wastes.

Incinerator Bottom Ash-The ash that does not leave the incinerator through offgas.

Incinerator Offgas—Air, gases, and particulates that leave the incinerator chamber and are subject to filtration.

Land Disposal Restrictions (LDRs)—Provisions of Hazardous and Solid Waste Amendments requiring phased-in treatment of hazardous wastes before disposal.

Listed Hazardous Wastes-A hazardous waste that meets the requirements of 40 CFR 261 Subpart D.

Low-Level Waste (LLW)—Radioactive waste not classified as high-level waste, transuranic waste, spent nuclear fuel, or byproduct material.

Maximally Exposed Individual (MEI)— A hypothetical member of the public who receives the maximum EDE from exposure to ambient air radionuclide concentrations from a facility.

Mixed Low-Level Waste (MLLW)—Waste containing both low-level radioactive and hazardous constituents. The radioactive constituents are regulated by the Atomic Energy Act and the hazardous components are regulated under RCRA.

National Emission Standards for Hazardous Air Pollutants (NESHAP)—Clean Air Act limits for release of hazardous pollutants for which no ambient air quality standard is applicable (40 CFR 61).

National Environmental Policy Act (NEPA)—Public Law 91-190 and CEQ implementing regulations in 40 CFR 1500-1508.

Permissible Exposure Limit (PEL)—An exposure limit that is published and enforced by OSHA as a legal standard.

Prevention of Significant Deterioration (PSD)—Part C of the Clean Air Act that establishes a policy of limiting degradation of air quality based upon classification of areas.

Radioactive Material License (RML)—Issued by the NRC to allow receipt, possession, use, transfer, or delivery of any source, by-product, or special nuclear material.

Radioactive Waste—A solid, liquid, or gaseous material of negligible economic value that contains radionuclides in excess of threshold quantities. Does not include material contaminated by radionuclides from nuclear weapons testing.

Regulated Hazardous Constituents-Constituents that are regulated under 40 CFR 261.

Scientific Notation—A widely used floating-point system in which numbers are expressed as products consisting of a number between 1 and 10 multiplied by an appropriate power of 10. 1.0E-01 is equivalent to 10⁻¹ or 0.1; 1.22E-01 equals 0.12; 1.52E-04 equals 0.000152; 1.76E+01 equals 17.6; and 1.00E+00 equals 1.00.

Scrubber Effluent-Offgas scrubber solution and contamination removed by a scrubber.

Short Term Exposure Limit (STEL)—Maximum airborne concentrations of a substance to which a worker could be exposed for a continuous exposure period of 15 minutes without suffering from prolonged adverse health effects.

Sizable-Waste objects that can be cut into smaller pieces for efficient packaging and disposal.

Slope Factor-The increase in lifetime cancer risks per unit dose of a carcinogen.

Stabilization—The mixing of waste with reagents which reduces the leachability of the metals or inorganics in the waste.

Sv-Sievert (1 Sv = 100 rem).

Threshold Limit Values (TLV)—Concentrations of airborne substances published by ACGIH that represent conditions where nearly all workers may be exposed without adverse health effects.

Time Weighted Average (TWA)—A time-weighted average concentration for a normal 8-hour workday and 40-hour work week to which nearly all workers may be repeatedly exposed, day after day without adverse effect.

Trial Burn—As required under RCRA and Toxic Substances Control Act (TSCA) to demonstrate the incineration efficiency of waste materials at different temperatures; the performance test which establishes the operating conditions and parameters that appear in the final TSCA approval/RCRA permit.

Volatile Organic Compound (VOC)—Carbon based compounds that evaporate at room temperature. Any reactive organic compounds as defined in 40 CFR 60.2.

Waste Acceptance Criteria (WAC)—The criteria used to determine if waste is acceptable for receipt.

Appendix A

Responses to the State of Idaho and the Shoshone-Bannock Tribes Comments

Appendix A

Responses to the State of Idaho and the Shoshone-Bannock Tribes Comments

In accordance to the Department of Energy, Idaho Operations Office policy, the draft Idaho National Engineering Laboratory Low-Level and Mixed Waste Processing environmental assessment was provided to the State of Idaho and the Shoshone and Bannock Tribes during April 1993, for preapproval reviews. This appendix contains copies of Idaho Department of Health and Welfare and The Shoshone-Bannock Tribes comment letters and text of comments and Department of Energy responses.

Response to Comments

Relationship of the proposed action to Idaho National Engineering Laboratory (INEL) Facilities Compliance Act and alpha low-level waste (LLW) management and Federal activities.

Comments and transmittal letters from the State of Idaho and the Shoshone-Bannock Tribes reflect possible misunderstanding regarding the relationship between the proposed action in this environmental assessment (EA) and other INEL mixed waste management and planning activities. The following clarifies this relationship.

The historic mission of the INEL's Waste Experimental Reduction Facility (WERF) has been to provide low-level waste (LLW) volume reduction and stabilization. The proposed action addressed in the EA would expand the WERF mission to include treating mixed LLW to comply with Resource Conservation and Recovery Act requirements for continued storage or land disposal. Treatment of mixed LLW from offsite, generators at WERF would be limited to less than 5 m³ per year. Supplementary commercial LLW volume reduction processing is needed to eliminate INEL operational problems and risks associated with the accumulated LLW inventory. The supplemental commercial treatment of LLW will not impact the mission of WERF.

The Federal Facilities Compliance Act (FFCA) requires the Department of Energy (DOE) to prepare specific mixed waste inventory reports and treatment plans for the State of Idaho and the Environmental Protection Agency (EPA). The proposed action addressed in the EA is consistent with the WERF mission described in the INEL's section of the FFCA 180-day report. The volume of mixed LLW for incineration at WERF has been updated in the EA from 60 m³ to 72 m³ for consistency with the 180-day report. Future DOE programs may create a need for additional modifications to the WERF mission. If that occurs, additional National Environmental Policy Act (NEPA) analysis and documentation will be prepared.

A recent announcement appeared in the Commerce Business Daily for an expression of interest for the private sector to provide characterization, transportation, and treatment services for radioactive/hazardous solid waste. This announcement is not associated with the EA proposed action

and does not impact the current or proposed mission of WERF. The purpose of this announcement was to identify potential alternatives for treating the INEL inventory of alpha-contaminated LLW stored at the Radioactive Waste Management Complex (RWMC). Much of this waste is also mixed waste, but it cannot be treated at WERF or any currently available commercial facilities.

Response to State of Idaho Comments

Document Justification

Comment

The level of documentation justification is inadequate for this proposal based upon review of available information. The Department bases an EA, in part, upon the continuity of the proposed actions. WERF is expanding from MLLW treatment demonstrations to production-scale campaigns. EA p. 8. In the Justification section, DOE states eight mixed low-level waste (MLLW) campaigns occurred during 1989 and 1990. However, no NEPA documents evaluating these campaigns were identified in the predecisional draft or in the list of NEPA documents previously provided. Further, the operations of WERF, established in 1982, were evaluated in two Environmental Evaluations (EE) dated June 1, 1981 and June 1, 1982. Neither EE identified impacts associated with hazardous waste incineration. Impacts for the hazardous component of mixed waste would have been identified in a hazardous waste-only burn had it been done.

Response

An EA was determined to be the appropriate level of NEPA documentation for this proposed action. As stated in Section 1.5 of the EA, the proposed action does not fit 10 CFR 1021 Subpart D typical classes of actions, and there are extraordinary circumstances that may affect the significance of the proposed action. Accordingly, DOE determined to prepare an EA and on the basis of the EA, determine whether to prepare an environmental impact statement (EIS) or to issue a Finding Of No Significant Impact (FONSI).

The eight MLLW campaigns that occurred during 1989 and 1990 were conducted in accordance with a March 1986 document, "Hazardous and Radioactive Mixed Waste Treatment Supplement" which amended the 1982 EE documents for WERF. The supplement was prepared before the mixed waste demonstrations, and it demonstrated that there would be no significant impacts.

Comment

In comments sent to the Department in December 1992, the State suggested handling this project in an expanded public forum. No commitment to this approach was made by DOE. As stated earlier, whether this project should be handled as an EA or EIS is debatable. The State will continue to review this issue in light of the predecisional draft and evaluation of the

implementation plan developed for the Environmental Restoration and Waste Management (ER&WM) EIS.

Response

In response to requests from citizens for more participation in INEL activities including waste management and your request for an expanded public forum, Department of Energy, Idaho Operations Office (DOE-ID) initiated a series of public participation events that include information/discussion of INEL LLW and mixed LLW management plans. The activities which were initiated during the 3rd quarter of 1992, include news releases, INEL tours, INEL outreach offices, and presentations to civic groups, business leaders, public officials, special interest groups and school classes in communities across the State. In addition, a series of briefings in communities across the State were held during May and June, 1993. These briefings are organized to discuss various topics of interest to the public including options for mixed waste processing and LLW disposal. The briefings include a video and fact sheets on WERF. The series of briefings and open houses will be conducted on a semiannual basis with updates occurring through newsletters and ongoing outreach.

The EA has been provided to the State and Shoshone and Bannock Tribes for pre-release reviews in compliance with agreements. Based on the analysis presented in the EA, DOE plans to issue a proposed FONSI for a 30-day public review and comment period. Copies of the EA and proposed FONSI will be distributed to the Idaho congressional delegation, State and local officials, INEL Outreach Offices, interested organizations, news media and public libraries. In addition, the proposed FONSI will be published in the Federal Register. DOE will evaluate the comments received as a result of the public review process and determine whether to issue a FONSI or if the proposed action constitutes a major Federal action significantly affecting the quality of the human environment, within the meaning of NEPA.

Purpose and Need

Comment

DOE proposes this action because of a shortage of MLLW treatment and disposal facilities, accumulating LLW requiring expeditious processing and disposal, and selecting treatment capabilities for LLW not available at WERF. EA, p. 8. The State's review of the supporting information leads to a different conclusion; the proposal is an effort to expand MLLW treatment in order to begin processing off-site MLLW.

Response

The purpose of the proposed action is stated in section 1.6, "Relationship to Other NEPA Reviews": "The proposed action at WERF does not include processing LLW or MLLW from sources other than INEL, with the exception of very limited quantities (<5m³/yr) explained further in this document. The use of WERF as a regional incinerator to process LLW or MLLW from non-INEL sources, such as other DOE facilities is not within the scope of the

proposed action. Such an action (if proposed as future alternative) would be addressed in the Office of Environmental Restoration and Waste Management (EM) programmatic environmental impact statement (PEIS), the INEL ER&WM EIS, and/or other appropriate NEPA documentation." The proposed action at WERF is not an effort to change the WERF's current mission from processing INEL-generated waste to processing offsite-generated waste. The EA clearly limits offsite waste to <5m³/yr.

Comment

Incinerable MLLW is less than 0.3% of the accumulated INEL MLLW. It is less than 3% of the estimated annual generation of MLLW. It is also a small percentage of total incinerable wastes [(60 m³ MLLW)/(9560 m³ Total)=0.01%]. To sacrifice LLW treatment capacity for a small volume of MLLW does not appear to be a rational choice. Even with a total projected inventory of LLW of 9,500 m³, processing at historic capacities would require slightly more than three years. DOE estimates three to five years for the same wastes. Adding two months for MLLW treatment should not increase the time for the total inventory by two years.

Response

The proposed action would offset approximately 60 days of LLW processing to treat the MLLW backlog and approximately 40 days per year to treat the newly generated MLLW. The preferred action would treat the existing backlog of LLW at a commercial facility and allow for flexible continued commercial treatments as needed. As identified in Section 1.3, the treatment of this backlog of waste "would minimize the risk of waste storage container deterioration and radiological releases, and maintain as low as reasonably achievable radiation fields and worker doses at WERF." The volume reduction provided would comply with the RWMC waste acceptance criteria and conserve LLW disposal space.

Section 2.4.1, "No Action Alternative", states the September 1993 inventory of 9,500 m³ of LLW would require 3 to 5 years for volume reduction/treatment. The 40 days per year for MLLW treatment does not increase the time for treatment of the total inventory by two years. Rather, this is based on the inventory and generation rates identified in Table 1. The projected on-going generation rates of 340 m³/month of LLW over the three year period would create an additional volume of 12,240 m³ of LLW that would require processing. DOE conservatively expects that this total volume of LLW (existing inventory plus on-going generation) would take 3 to 5 years to process.

Comment

DOE should further evaluate the use of other DOE facilities for incineration of MLLW. The State, through the Division of Environmental Quality, has been working with DOE towards a solution for the limited treatment technologies currently available for mixed waste. The ongoing dialogue between regulators and DOE are designed to identify, on a nation-wide basis, available technologies, treatment capacities and waste volumes. The decision to expand WERF to include

MLLW from on-site and off-site sources should be reassessed considering the discussions on FFCA requirements.

Response

The use of other DOE facilities for incineration of INEL MLLW was evaluated in Sections 1.3, "Need for Agency Action," and 4.4.5, "Treat MLLW at Another DOE Incinerator and Continue to Incinerate, Compact, and Size LLW at WERF." This evaluation determined that "WERF is the only operable DOE facility capable of incinerating INEL MLLW...". DOE-ID supports the ongoing dialogue with regulators to identify, on a nationwide basis, available technologies, treatment technologies, and waste volumes. However, it is important to resolve the immediate needs to treat MLLW to comply with RCRA requirements for storage and disposal and to provide support for ongoing INEL activities that generate MLLW. Longer-term complex- wide solutions will be considered during agreement negotiations in accordance with the FFCA. In addition, the ER&WM PEIS and the INEL ER&WM EIS will consider potential treatment alternatives for all DOE wastes, including LLW and MLLW. The proposed action addressed in this EA does not preclude such future alternatives.

Comment

The volume of LLW through September 1993 is estimated by DOE at 9,500 m³. Based upon data previously provided, the State estimates the figure to be 5,200 m³. This number is extrapolated from second quarter 1992 data provided by DOE. Requests for updated information have not been answered to date. If State estimates accurately reflect the LLW inventory expected in September 1993, using historic processing efficiencies, LLW inventory should be processed within 21 months. This is well below DOE estimates and contradicts on the bases for the proposal.

Response

The projected volume of 9,500 m³ of LLW through September 1993 includes LLW that is currently stored at INEL generation facilities. Section 1.3 identifies that "The LLW is presently stored outside WERF on asphalt pads and at generator sites in plywood boxes or cargo containers." The estimate of 9,500 m³ includes the LLW stored at the generator sites.

Comment

Safety analysis reports (SAR) indicate that metal decontamination and melting are available techniques at WERF. WERF SAR Rev. 7 (Feb. 1987). Again, the "need" for expanded treatment techniques does not justify off-site treatment.

Response

The WERF SAR, Rev. 7 (Feb. 1987) is being updated to reflect only those technologies that are currently available at WERF. The 1987 SAR includes experimental technologies such as decontamination and melting that were subsequently discontinued.

Section Comments

4.1 Operational Impacts

Comment

The EA references an isokinetic stack sampling. The sentence implies that the sampling is a real-time monitoring system ("...flow measurements, and continuous, isokinetic stack sampling..."). The description should be corrected to reflect isokinetic monitoring abilities.

Response

The sentence was reworded to state: "Differential pressure measurements, flow measurements, and continuous stack sampling monitor any degradation of the filtration system. Additionally, an isokinetic stack sampling system monitors actual stack emissions of radioactive material."

4.1.1.1 Radiological Impacts

Comment

It is unclear whether the radionuclide release rate based upon analysis of previous campaigns' fly ash are representative of the proposed MLLW runs. For example, aqueous solutions and the off-site wastes have not been incinerated at WERF and may have different release rates due to generation processes or constituents. DOE should justify why the release rates for previous campaigns conservatively bound these proposed campaigns.

Response

The radionuclide distribution in the WERF emissions is based on the best available information from analysis of ash samples and knowledge of INEL waste generating processes (including liquid and aqueous wastes). The EA release rate limits were established such that the total dose rate from all nuclides would not exceed a dose of 0.1 mrem/yr at the INEL boundary. Actual waste feed rates will be controlled within the bounds established by the EA, air permit, and waste acceptance criteria (WAC). The risk evaluation in the EA is extremely conservative. As described in Section 4.1.1.1, "Radiological Impacts", the risk analysis in the EA is based on processing wastes containing over 1,076 Ci per year. During six previous years of operations, WERF processed only 17.9 Ci. The sources and characteristics of the waste feed have not

changed significantly. Therefore, DOE considers the EA to contain a robust analysis of potential risks.

Comment

Worker dose rate was calculated using 100 meters under CAP-88. An explanation of this choice should be presented in the text.

Response

The following footnote was added to the page 29. "The minimum distance of 100 m is frequently used in environmental impact analysis because Gaussian dispersion equations used in most dispersion codes are not intended for nearby dispersion calculations." 100 m is felt to be the minimum distance for which reasonable dispersion estimates can be obtained.

Comment

In Table 3, the row labeled "Cancer Risk" under Population is misleading. A more appropriate description would be "Excess Cancer Deaths in Exposed Population."

Response

Footnote was added to Table 3. "c. Estimated additional number of fatal cancers per year in the affected population of 160,120 persons (1990 census data). The risk to an individual (increased cancer risk per person) is the stated risk (total cancers) divided by the population size. For example, the "annual total" risk (from compaction and sizing releases) of an individual developing fatal cancer equals 1.8E-09 (2.9E-04 / 160,120), or about 1 in 552,000,000.

Comment

On page 29, the reference to 1,076 Ci for Table 2 release rates is incorrect. The correct number is 3,587 Ci.

Response

The nominal baghouse/HEPA filter efficiency cited was in error, it should be 99.9%; therefore, the 1,076 Ci is the correct number.

4.1.1.2 Nonradiological Impacts

Comment

The EA does not discuss the concentration of metals in the feed stock. This would set the feed rates and affect the exposure. More discussion is warranted.

Response

Metal objects are separated from incinerable waste at the points of generation. Packages are certified to meet WERF WAC by the generators, and WERF personnel inspect waste data forms, shipping records and manifests, characterization reports and certification statements prior to waste acceptance. In addition, each waste container is inspected by radiography before entering the incinerator. Wastes containing metal constituents would be fed into the incinerator at controlled rates established to remain within limits of the air permit and the administrative rate in the EA Table 6.

Comment

For non-radiological dispersion modeling, DOE uses RSAC-4 computer code. DOE must discuss why a radiological dispersion code is being used for chemicals in light of the Department's decision to use ISC2ST in the INEL ER&WM EIS.

Response

The RSAC-4 code was used in order to bound expected short-term consequences of WERF releases. Being an accident code designed for modeling short-term releases, RSAC-4 computes the highest expected downwind concentrations based on user-defined meteorological conditions (usually stability category F, and 0.5m/s & 2 m/s wind speeds for distances less than and greater than 2 km, respectively). RSAC-4 gives higher concentrations than would result from using ISC2ST, which uses average, site-specific meteorology.

Furthermore, the ISC2ST code is more complex than was considered necessary for the WERF application. In Section 1 of EPA's User's Guide for ISC2ST, the EPA recommends that "Simpler and less expensive computerized models...should be used for applications that do not require at least one of the ISC2ST Model features." For example, the ISC2ST code is especially useful for modeling releases from multiple emission points in a "complex"; this feature was not needed in the case of WERF.

4.3 Potential Impacts from Accidents

Comment

Tables 11, 12, and 13 reference an American Conference of Governmental Industrial Hygienists (ACGIH) documents that contains Operational Safety and Health Act (OSHA) permissible exposure limits (PEL). The referenced document does not contain the OSHA values. Using ACGIH is acceptable. However, the values are not OSHA values.

Response

The indicated OSHA PELs are included in the ACGIH, 1991 reference. However, for clarity the table footnotes/references have been changed to 29 CFR 1910.1000.

Response to the Shoshone-Bannock Tribes Comments

Section 2.2 Proposed Commercial LLW Treatment

Comment

The proposed action includes using licensed and permitted commercial LLW treatment facilities for supplemental LLW volume reduction. It is anticipated that a portion of the accumulated inventory and a portion of the newly generated LLW would be processed at commercial facilities. The actual distribution of waste between WERF and commercial processing facilities has not been determined. A list of potential vendors and a complete outline of transportation control criteria should be reviewed by our department, as geographic location of prospective vendor may immediately affect the Tribe during transferral or emissions from routine plant operations. This request ensures that the Tribe has the opportunity to protect the health, welfare, and safety of its members, natural resources, and the environmental and cultural resources.

Response

Transportation of the LLW for offsite commercial processing would be performed in accordance with applicable Department of Transportation and Nuclear Regulatory Commission (NRC) regulations. DOE-ID will provide additional requested information on waste processing geographic locations and transportation plans as it becomes available. Section 4.2 of the EA,"Impacts of Transportation of LLW to and from INEL," evaluates impacts associated with the transportation of LLW using a conservative or "bounding" scenario. The last paragraph of Section 4.2 discusses the potential impacts of transporting essentially all of the LLW and MLLW across the Fort Hall Indian Reservation.

All of the known prospective commercial waste processing facilities are outside of Idaho. The offsite LLW treatment facilities would be licensed and permitted by the host state and/or NRC. The facility's emissions and operations would be documented as required by their respective state and federal licenses, permits, and environmental analysis as applicable.

Section 4.1 Operation Impacts of Proposed Action

Comment

Primary impacts from WERF operations from airborne emissions of radionuclides (from incinerating, stabilizing, compacting, and sizing), hazardous materials, and criteria pollutants, upon initial startup, should be made available to natural resources trustees. This would confirm the EPA's National Emission Standards Hazardous Air Pollutants (NESHAP) (40 CFR 61 Subpart I) are met. Information during the trial burn and emission monitoring programs concerning nonradiological releases should also be available for review.

Finally, since WERF operations were suspended in February 1991, accumulating inventory of LLW, which prompted the INEL to review waste management alternatives as stated in Section 1.3, "Need for Agency Action," is justified. It is my opinion that the proposed DOE action, rather than the alternatives to the proposed action, will provide the preferred method of determining whether DOE should prepare an EIS or to issue a "FONSI".

Response

DOE-ID will provide the requested WERF startup data on airborne emissions as information becomes available. The emission data will include National Emission Standards for Hazardous Air Pollutants (NESHAP) reports on radionuclide emissions, trial burn results, and startup monitoring summaries on hazardous materials and criteria pollutants. In addition, annual INEL environmental monitoring reports will continue to be provided to Fort Hall's INEL information repository.

Thank you for your comments on the environmental assessment and the proposed action. DOE will use the environmental assessment of the proposed action as a basis for determining whether to issue a "Finding of No Significant Impact" or to prepare an Environmental Impact Statement. Your comments will assist DOE's decision-making process.