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Department of Energy
Idaho Operations Office
850 Energy Drive
Idaho Falls, Idaho 83401-1563

October 17, 2001

Stanley Hobson
Chair, INEEL Citizens Advisory Board
c/o Jason Associates
477 Shoup Avenue
Suite 205
Idaho Falls, Idaho 83402

SUBJECT: Response to INEEL Citizens Advisory Board Letter 01-CAB-077 Dealing with the ICDF (EM-ER-01-162)

Dear Mr. Hobson:

Thank you for your letter (01-CAB-077) dated August 27, 2001 concerning the Idaho National Engineering and Environmental Laboratory (INEEL) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Disposal Facility (ICDF). We appreciate the opportunity to continue discussion on the ICDF project with the INEEL Citizens Advisory Board (CAB). This continued dialog helps us with the development and understanding of design, site use and performance issues from the perspective of the public.

There were several concerns expressed in the letter. My understanding of the issues in the letter are: 1) type of waste to be disposed in the ICDF landfill, 2) cost of on-site versus off-site disposal, 3) confusion over the waste acceptance criteria for United States Department of Energy (DOE) waste management facilities, 4) design and siting of the ICDF, 5) waste acceptance criteria for the ICDF, 6) protection of the Snake River Plain Aquifer, 7) current status of the ICDF, and 8) path forward for ICDF design and construction. Each of these concerns is addressed below.

1) **There is confusion as to what types of waste were being considered for disposal in the ICDF landfill at the time of the Proposed Plan versus the current time**. The ICDF is being designed and constructed in accordance with substantive Resource Conservation and Recovery Act (RCRA) Subtitle C (hazardous waste), Toxic Substances Control Act (TSCA) Polychlorinated Biphenyl (PCB), and DOE Order 435.1 (radioactive waste) landfill design and construction standards as was specified in the Waste Area Group 3 ROD. This allow for the ICDF to accept "low-level, mixed low-level, hazardous, and limited quantities of Toxic Substances Control Act waste" as was stated in the Operable Unit (OU) 3-13 Proposed Plan, hereafter referred to as the Waste Area Group 3 Proposed Plan. Although a variety of waste types will be accepted at the ICDF, the waste must be associated with an INEEL CERCLA remediation project. The bulk of the waste destined for the ICDF is soil with some amount of debris (concrete, metal, personnel protective equipment, etc.).

The Waste Area Group 3 Proposed Plan and OU 3-13 Record of Decision (ROD), hereafter referred to as the Waste Area Group 3 ROD, were based on the information contained in the OU 3-13 Feasibility Study (FS) Supplement Report for the various waste types and associated waste volumes. In 1998, the environmental restoration waste inventory was 71,900 cubic yards of low-level waste (LLW) soils, 222,900 cubic yards of mixed LLW (MLLW) soils, 1,400 cubic yards of hazardous waste (HW) soils, 168,600 cubic yards of LLW debris, 250 cubic yards of MLLW debris, and 250 cubic yards of HW debris. This inventory of concern, totaling 465,300 cubic yards was used in developing the size and type of on-site disposal facility that would be designed, constructed, operated, closed, and monitored for the INEEL CERCLA wastes. Currently, the design inventory has a total volume of waste of 483,800 cubic yards and is comprised of 84,200 cubic yards of low-level waste (LLW) soils, 290,200 cubic yards of mixed LLW (MLLW) soils, 9,000 cubic yards of risk based waste soils, 3,600 cubic yards of hazardous waste (HW) soils, 70,700 cubic yards of LLW debris, 26,200 cubic yards of MLLW debris, and 20 cubic yards of HW debris.

It is recognized that the Waste Area Group 3 Proposed Plan did not clearly identify the issue of debris being included within the inventory of concern. As discussed above, debris was and continues to be a part of the inventory being considered for disposal in the ICDF landfill. We apologize that this was not made explicitly clear to the INEEL CAB.

2) **The cost of off-site disposal remains cost prohibitive in comparison to on-site disposal at the ICDF.** The DOE Idaho Operations Office (DOE-ID) has recently re-evaluated the cost of on-site disposal at the ICDF Complex versus the cost of disposal at an off-site commercial disposal facility. In 1998, it was estimated that the cost of off-site disposal would be approximately three times more expensive than to design, build, operate, close, and monitor to the ICDF Complex. During the development of the Waste Area Group 3 ROD, there was a concern that the cost of off-site disposal would become less costly than on-site disposal at the ICDF. As result, it was decided to periodically re-evaluate the cost of on-site versus off-site to determine the most cost effective location for disposal. This re-evaluation process was incorporated into the Waste Area Group 3 ROD as a commitment to re-evaluate the cost of on-site versus off-site disposal prior to excavating the waste for disposal at the ICDF. In the recent re-evaluation of on-site and off-site costs, it is now approximately six times more expensive for off-site disposal in comparison to the ICDF Complex. A copy of this re-evaluation of cost of on-site and off-site costs of disposal is provided to INEEL CAB for information.

3) **There is confusion as to the waste acceptance criteria for DOE waste management disposal facilities in relation to volumes from environmental restoration activities.** DOE has several existing disposal facilities that were evaluated as potential disposal options in the Programmatic Environmental Impact Statement on Waste Management, hereafter referred to as the WM PEIS, for dealing with MLLW. The decisions concerning the disposal of MLLW at these facilities were made in the Record of Decision for the WM PEIS. The CERCLA waste (soils and debris) that would be generated from Environmental Restoration projects would likely meet the waste acceptance criteria for existing DOE waste management disposal facilities. However, the capacity at these existing DOE waste management disposal facilities for dealing with the anticipated MLLW streams is limited, and may not be sufficient to deal with the large volumes of material (soil and debris) that will be generated from the environmental restoration activities, and the cost of transportation to another DOE site would be similar to the cost of transportation to a commercial disposal facility.

4) The design and siting (location) of the ICDF has been and continues to be a concern of the INEEL CAB. In the Waste Area Group 3 Proposed Plan, there was an artist rendition of the ICDF landfill cells located in and south of the existing Idaho Nuclear Technology and Engineering Center (INTEC) percolation ponds. This was used for illustration purposes and was never intended to be the selected location. Various areas across the INEEL have been evaluated for the location of the ICDF, including a location within the existing INTEC percolation ponds. The preferred location is an area west of the existing INTEC percolation ponds. At the insistence of the State of Idaho, a specific location was not selected in the Waste Area Group 3 ROD, but a study area of approximately 130 acres, which included the existing INTEC percolation ponds, was specified to undergo a "comprehensive geotechnical investigation" to determine the location of the ICDF within the study area. For the "comprehensive geotechnical investigation", both geophysical and geotechnical methods/techniques were used. The result of the geotechnical study was that the area west of the existing INTEC percolation ponds was the best location for construction of ICDF.

In the Waste Area Group 3 ROD, the design for the ICDF was specified as being required to meet RCRA Subtitle C (hazardous waste), TSCA PCB, and DOE Order 435.1 (radioactive waste) landfill design and construction standards. In addition, protection of the Snake River Plain Aquifer is a key design requirement. These design and construction requirements were used in the development of the ICDF conceptual design, ICDF Title I (30%) design and are continuing to the used on the subsequent design efforts. Also, in the ICDF conceptual design were conceptual layout drawings showing the change from 6 disposal cells, as envisioned in the Proposed Plan, to a 2-disposal cell configuration. In addition, the ICDF design included evaporation ponds to treat the leachate from operation of the ICDF landfill and other aqueous liquid wastes. As the design effort has progressed from the Waste Area Group 3 ROD through the ICDF Title I (30%) design, refinements and enhancements have been made to the design to meet or exceed the design and construction requirements.

5) The waste acceptance criteria for the ICDF has been and continues to be a concern of the INEEL CAB. The waste acceptance criteria for the ICDF landfill are in the process of being developed. In the ICDF Title I (30%) design documents, preliminary waste acceptance criteria were developed and presented. Currently, the ICDF 60% Design Components documents have refined the ICDF landfill waste acceptance criteria. In addition, the groundwater impacts were calculated to determine the acceptable quantities of hazardous and radioactive constituents that could be disposed in the ICDF landfill while remaining protective of groundwater. The final ICDF landfill waste acceptance criteria will be presented in the ICDF Remedial Design/Remedial Action Work Plan (RD/RA WP), which includes the ICDF Title II (90%) design, hereafter is referred to as the ICDF design and operations plan.

6) Protection of the Snake River Plain Aquifer has been and continues to be a concern of the INEEL CAB. DOE-ID is committed to protecting the Snake River Plain Aquifer (SRPA). In selecting the construction and operation of a hazardous and radioactive waste landfill (ICDF), DOE-ID also committed in the OU 3-13 ROD to ensure that the SRPA would not be adversely impacted from the operation and closure of the ICDF landfill. Since protection of the SRPA is a key ICDF design and construction criteria, analysis is continuing during the design and construction efforts to ensure this commitment is maintained. The analysis of

impacts on the SPRA is one of the key evaluations being used to develop the waste acceptance criteria for the ICDF landfill. This analysis was presented in the ICDF Title I (30%) design and has been refined for the ICDF 60% design. Additional analysis may be conducted to support the ICDF design and operations plan. We are willing to provide to the relevant INEEL CAB committee a complete set of the ICDF design information and calculations for information.

7) **There is confusion as to the current status of the ICDF project.** For the ICDF project, the design and construction activities were split into 2 phases. In phase 1 construction, the initial construction and testing activities are being accomplished. Phase 2 of construction will complete the construction of the ICDF landfill and evaporation ponds. The phase 1 construction (excavation and berm construction for ICDF landfill cell 1, berm construction for the ICDF evaporation ponds, and fencing) and testing (construction and testing of the clay liner test pad) activities are in progress. To accomplish the two phases of construction, it was necessary to develop some of the ICDF Title II (90%) design concurrently with the ICDF Title I (30%) design. The 90% design components included the necessary drawing and calculations to conduct the excavation, berm, test pad construction, and testing activities. These construction and testing activities can be completed without having completed the waste acceptance criteria, monitoring strategy/approach, and complete specification for the various liner and layer materials that will be used in the construction of the ICDF landfill and evaporation ponds. In addition, the information from the test pad construction and testing activities is necessary to complete the ICDF Title II design and specification that will be presented in the ICDF design and operations plan.

8) **The path forward for ICDF design and construction involves additional design efforts along with the second phase of construction.** The Draft ICDF 60% design is currently undergoing review and comment by the by the United States Environmental Protection Agency (EPA) and the Idaho Department of Environmental Quality (IDEQ). The EPA and IDEQ are also reviewing the Draft Staging, Storage, Sizing, and Treatment Facility (SSSTF) RD/RA WP, hereafter referred to as the SSSTF design and operations plan. The SSSTF contains the administrative, utilities, storage, decontamination, and treatment design and operations that are the front-end of the ICDF Complex. Construction activities for the SSSTF will begin after finalization of the SSSTF design and operations plan. Also, the ICDF design and operations plan is currently being developed. Once the ICDF design and operation plan is finalized, Phase 2 of ICDF landfill and evaporation ponds construction will be initiated. Construction of both the ICDF and SSSTF portions of the ICDF Complex are expected to be completed by April 2003, with operations starting by July 15, 2003.

During the upcoming design efforts for ICDF, we are planning a public workshop, similar to the ICDF 30% design public workshop (July 16, 2001), to discuss the ICDF 60% design and SSSTF design and operation plan. The current plan is to have this workshop on November 12, 2001, in Idaho Falls. The public workshop in November will focus on 1) types of waste acceptable for disposal in the ICDF landfill, 2) the Draft Waste Acceptance Criteria for the ICDF Complex, which includes the ICDF landfill, ICDF evaporation ponds, and the SSSTF storage and treatment operations, 3) the generalized process flow and interaction between the SSSTF, the ICDF landfill and the evaporation ponds, and 4) the basic approach of subsurface modeling used to ensure aquifer protection from the potential release of wastes placed in the ICDF Complex. In addition, a public workshop on the ICDF design and operations plan is being planned and will be scheduled for approximately March 2002.

Hopefully, the information presented above addresses your concerns on the ICDF project. The CAB is welcome to attend the November 12 public workshop on the ICDF 60% design and SSSTF design and operations plan. A complete set of design documents will be provided to the CAB committee assigned to monitor ICDF progress, if requested. The ICDF team will continue to provide progress reports to the CAB and answer any questions. Please contact Talley Jenkins at (208) 526-4978 or me at (208) 526-4392 with your questions or comments.

Sincerely,

Kathleen E Hain

Kathleen E. Hain, Manager
Environmental Restoration Program

Enclosure