

RESPONSIVENESS SUMMARY

Overview

This Responsiveness Summary contains the Agencies' responses to public comments on the revised Proposed Plan and the original Proposed Plan for a Cleanup of Pit 9 at the Radioactive Waste Management Complex (RWMC), Idaho National Engineering Laboratory (INEL). This document is divided into two parts. Part I addresses comments that were received on the revised Proposed Plan. The Agencies' responses to the comments in Part I were written based on the information available at the time the revised Proposed Plan was issued. In contrast, Part II addresses those comments that were received on the original Proposed Plan. Some of the responses in Part II, in particular those that address technical issues, have been written based on the information available at the time the original Proposed Plan was issued. The decision in this Record of Decision (ROD) is based on the public comments on both the original Proposed Plan and the revised Proposed Plan.

The revised Proposed Plan was released on October 16, 1992. A public comment period began on October 22, 1992, and was scheduled to end November 21, 1992. However, a request for an extension of the public comment period, submitted during the original period, was granted, thus extending the close of the public comment period to December 21, 1992. The revised Proposed Plan recommended that certain contaminated materials be removed from Pit 9 and treated using a physical separation/chemical extraction/stabilization process.

The revised Proposed Plan was mailed to 5,600 members of the general public. Public meetings were scheduled in five Idaho communities, including Idaho Falls (November 4), Pocatello (November 5), Boise (November 9), Moscow (November 10), and Twin Falls (November 12).

At each of the five public meetings, representatives from DOE, EPA and IDHW discussed the Pit 9 Project, answered questions, and received public comments. Written comment forms were also distributed at the meetings. Verbatim transcripts of the public meetings were recorded by a court reporter. One hundred nineteen written comments were received on the Pit 9 revised Proposed Plan from 48 members of the public; verbal comments were received from 9 individuals. Thirty-eight of the commenters expressed their support for the proposed cleanup of Pit 9 and stated that the preferred alternative, Alternative 4, appears to be the best method for the cleanup of Pit 9. Two commenters expressed a preference for Alternative 5, while another commenter suggested that a sixth alternative that would be a combination of Alternatives 4 and 5 be used to remediate Pit 9.

The original Proposed Plan was released on December 9, 1991. A public comment period began on December 13, 1991, and ended February 11, 1992. The original Proposed Plan recommended that contaminated materials be removed from Pit 9 and treated using multiple chemical or physical separation methods.

The original Proposed Plan was mailed to 5,600 members of the general public. In addition to the public comment meeting held in Idaho Falls on January 7, 1992, informational meetings were held on December 9, 10, 11, and 12, 1991 in Boise, Moscow, Twin Falls, and Idaho Falls, respectively.

At the January 7, 1992, meeting on the original Proposed Plan, representatives from the DOE, EPA, and IDHW discussed the project, answered questions, and received public comments. Written comment forms were distributed at the meeting. Verbatim transcripts of the public meeting were recorded by a court reporter. Thirty-three written comments were received on the Pit 9 original Proposed Plan from 29 members of the public; verbal comments were received from 7 individuals. Six commenters expressed their preference for Alternative 4 (Chemical Extraction and/or Physical Separation). Two commenters asked for a delay in the remediation, of Pit 9. Two commenters favored Alternative 2 (In-Situ Vitrification) as the method of Pit 9 remediation, while

another commenter preferred Alternative 3 (Ex-Situ Vitrification). Another commenter stated that Pit 9 remediation was unnecessary. The City of Stanley, Idaho, favored Alternative 5 (Complete Removal, Storage, and Offsite Disposal).

In general, the public expressed three predominant opinions relative to the preferred alternative, Alternative 4. These opinions were (1) it was too expensive, (2) it was the best alternative presented, and (3) it was too vague. Further, the predominant public opinion concerning the original Proposed Plan was that the preliminary risk evaluation was inadequate, overly conservative, did not reflect actual conditions at Pit 9, and should not be used to justify this interim action. Those who felt the preferred alternative was too expensive typically expressed concern that large sums of money were to be spent in reducing potential risks which did not reflect the actual risks posed by Pit 9.

Background on Community Involvement

Opportunities for public notice and participation in the decision process for an interim action at Pit 9 were provided over the course of 13 months beginning in November of 1991 and continuing into December 1992. For the public the activities ranged from receiving a fact sheet and an original and a revised Proposed Plan to having telephone briefings, public informational meetings, and public meetings to offer verbal comments during two separate 60-day public comment periods.

Original Proposal Plan

On November 19, 1991, a fact sheet concerning Pit 9 conveyed through a "Dear Citizen letter" was included in a mailing to 5,600 individuals of the general public and 11,700 INEL employees. At the same time, the INEL Public Affairs office issued a news release to more than 40 newspaper, radio and TV station media contacts concerning the availability of the original Proposed Plan for Pit 9. The release gave public notice that the original Proposed Plan would be available prior to the beginning of the comment periods in the Administrative Record section of the INEL information repositories located in the INEL Technical Library in Idaho Falls, as well as in city libraries in Idaho Falls, Pocatello, Twin Falls, Boise, and Moscow. Display advertisements announcing the same information appeared in eight major Idaho newspapers. Large advertisements appeared in the following newspapers from November 22 to the 27th: *Post Register* (Idaho Falls), *Idaho State Journal* (Pocatello), *South Idaho Press* (Burley), *Times News* (Twin Falls), *Idaho Statesman* (Boise), *Idaho Press Tribune* (Nampa), *Lewiston Morning Tribune* (Lewiston), and *Idahonian* (Moscow).

Similar display advertisements again appeared in the local newspapers several days preceding each local meeting to remind citizens to attend and provide verbal or written comments. All three media announcements, the "Dear Citizen letter," the news release, and the newspaper advertisements gave public notice of four informational meetings concerning the cleanup of Pit 9 and the beginning of a 30-day public comment period which was to begin December 4, 1991. Additionally, two radio stations in Idaho Falls and newspapers in Idaho Falls and other communities repeated announcements from the news release to the public at large.

Personal phone calls concerning the availability of the original Proposed Plan and public meetings were made to individuals, environmental groups, and organizations by INEL outreach office staff in Pocatello, Twin Falls, and Boise. The Community Relations Plan coordinator made calls in Idaho Falls and Moscow.

Informational meetings on Pit 9 were held in conjunction with scoping two other investigations proposed for Waste Area Group (WAG) 7 at the RWMC. The meetings were held December 9, 10, 11, and 12, 1991 in Boise, Moscow, Twin Falls, and Idaho Falls, respectively. An informal open house was held one hour prior to each of the meetings to allow the public to visit with DOE and

INEL representatives about Pit 9. On the afternoon of December 9, a telephone briefing concerning the Pit 9 original Proposed Plan was held between DOE and a resident of Twin Falls.

Copies of the Pit 9 original Proposed Plan were distributed to those attending the informational meeting and mailed to 5,600 individuals on the INEL Community Relations Plan mailing list on December 9, 1991. Citizens attending the meetings were informed that the 30-day comment period on the original Proposed Plan would begin December 13, 1991. Copies of the original Proposed Plan and documents in the Administrative Record were made available to the public in six regional INEL information repositories: INEL Technical Library in Idaho Falls and city libraries in Idaho Falls, Pocatello, Twin Falls, Boise, and Moscow. Copies of the Administrative Record file for the Pit 9 Interim Action were placed in the information repository sections or at the reference desk in each of the libraries the week of December 9, 1991. Newspaper advertisements were placed in the same eight newspapers giving notice that the 30-day open comment period on the original Proposed Plan would run from December 13, 1991 through January 12, 1992. Notice was also given concerning the public meeting scheduled for January 7, 1992, in Idaho Falls to receive verbal comments on the plan. Advertisements were placed in local newspapers concerning this meeting.

A public meeting was held on January 7, 1992, in Idaho Falls. During the meeting, representatives from the DOE, EPA, and IDHW discussed the Pit 9 project, answered verbal and written questions, and received public comments. A court reporter prepared a verbatim transcript of the public meeting. Written comment forms were distributed at the meeting. Both the meeting transcripts and the written comments were placed in the Administrative Record section of the INEL information repositories under the heading of Pit 9, Operable Unit 7-10.

In response to requests received during the comment period, the Agencies agreed to an additional 30-day extension of the comment period through February 11, 1992. A newspaper display advertisement was placed with the same eight newspapers announcing the extension. In addition, a postcard was mailed on January 13, 1992, to the 5,600 individuals who had received a copy of the plan, to notify them of the extension and to invite written comments.

Regular reports concerning the status of the Pit 9 project were included in the *INEL Reporter* and mailed to those who attended the meetings and who were on the mailing list. Reports appeared in the January, March, May, July, September, and November 1992 issues of the *INEL Reporter*.

Revised Proposed Plan

After reviewing public comments and learning new details about the process that could be used in association with the preferred alternative, the Agencies concluded that a revised Proposed Plan was in order. On October 16, 1992, the revised Proposed Plan for Pit 9 was mailed to 6,500 individuals on the mailing list for review and comment. The mailing, along with an INEL Public Affairs news release and newspaper advertisements, provided the general public with notice of the availability of the revised Proposed Plan and public meeting schedule. The notices indicated that the 30-day public comment period would begin October 22, 1992, and end on November 21, 1992. Display advertisements were placed in the following newspapers during the week of October 19, 1992: *Post Register* (Idaho Falls), *Idaho State Journal* (Pocatello), *South Idaho Press* (Burley), *Times News* (Twin Falls), *Idaho Statesman* (Boise), *Lewiston Morning Tribune* (Lewiston), and *Daily News* (Moscow).

Another series of advertisements were placed in each local newspaper several days prior to the public meetings to remind citizens to attend and comment on the revised Proposed Plan. Additionally, a special feature article in the *INEL Reporter* was mailed to 6,500 individuals on October 30 and November 2, 1992, to remind citizens about the meetings and the opportunity to comment on the revised Proposed Plan.

After the revised Proposed Plan was distributed, the Agencies corrected two statements made in the plan. A "Notice of Errors" was placed on the front cover of the November issue of the *INEL*

Reporter and mailed to 6,500 individuals who had earlier received the revised Proposed Plan and to INEL employees on October 30 and November 2. Additionally, an "Errata Sheet" was mentioned at each of the meetings and made available to those attending the meetings.

Personal telephone calls were placed to individuals, environmental groups, and organizations concerning the meetings by INEL outreach office staff to citizens in northern, southwestern, and southeastern Idaho. In the days and weeks leading up to the meetings, local radio stations and newspapers carried meeting announcements and short descriptions of the revised Proposed Plan.

On November 2, 1992, a telephone briefing concerning the Agencies' revised Proposed Plan for Pit 9 was conducted among the DOE, the League of Women Voters of Moscow, and the Environmental Defense Institute to describe the revised Proposed Plan and answer questions. State of Idaho Division of Environmental Quality (DEQ) and EPA representatives also participated in the call.

Public meetings on the revised Proposed Plan were held on November 4, 5, 9, 10, and 12 in Idaho Falls, Pocatello, Boise, Moscow, and Twin Falls, respectively. During these meetings, representatives from DOE, EPA, and State of Idaho discussed elements of the revised Proposed Plan, answered questions, and received verbal comment from the public. Written comment forms, including a postage-paid business reply form, were made available to those attending the meetings. The forms were used to turn in written comments at the meeting or to mail comments at a later date. A court reporter was present at each meeting to provide a verbatim transcript of discussions and public comments.

On November 12, 1992, the DOE Project Manager for Pit 9 participated in a radio talk show in Twin Falls relative to the revised Proposed Plan. The program was broadcast to listeners in the Magic Valley area and focused on Pit 9 information that was to be discussed in the public meeting that evening.

In response to a public comment request to lengthen the comment period, the Agencies extended the comment period by 30 days, ending December 21, 1992. Public notice of the extensions was accomplished using three approaches: display advertisements in the same seven newspapers as was used to announce the public comment period in October 1992, a postcard mailed to 6,500 individuals who had received a copy of the revised Proposed Plan and/or who attended the meetings, and personal phone calls to interested parties. These methods of notifying the public occurred during the week of November 22, 1992.

Summary of Comments Received During Public Comment Periods for Original and Revised Proposed Plan

Formal public comments and questions raised on the original and the revised Proposed Plan for a Cleanup of Pit 9 at the INEL RWMC during the comment period are summarized below. Both oral comments received at the public meetings and written comments received have been grouped together according to the general subject of the comments. These comments have been responded to below.

Comments and questions on a variety of subjects not specific to the Pit 9 interim action were also received. These subjects concern the RFP for Remediation of Pit 9. In particular, DOE received comments regarding: the timing of the release, evaluation, and contractor selection process for the RFP to remediate Pit 9; role and responsibility of the EPA and the State of Idaho in the development of the RFP; whether the RFP provides that subcontractor liability will be assured; method of negotiating costs and change orders for the contract; need for additional public comment based on potential increases in remediation costs due to the lack of a ceiling or threshold value; inclusion of ARARs in the RFP; conformance with FFA/CO provisions in Sections 3.2 and 5.1.

Responses to such comments are not provided in this Responsiveness Summary. Additional information on these unrelated subjects can be obtained from the INEL Public Affairs Office in Idaho Falls or at the local INEL offices in Pocatello, Twin Falls, and Boise.

Summarized Comments on the Pit 9 Interim Action

DOE has provided a comment tracking system to assist the public in finding responses to individual comments. This system allows commenters to compare public comments received by DOE with the comment summaries and responses provided in the Responsiveness Summary. This system is described below.

Each individual comment made by a commenter was assigned a code. These codes are related to the source of the comments. The first character of each code identifies whether the comment originated from a transcript (T) or written document (W). The second character is an arbitrary number assigned to each commenter. The second set of two digit numbers that follows the (-) represents the sequence of individual comments within a given document. For example, T1-01 is the first verbal comment made by commenter number one. There are two comment logs which follow this Responsiveness Summary—a comment log for the revised Proposed Plan and a comment log for the original Proposed Plan. Each comment log has been organized three different ways according to (1) comment category, (2) commenter name, and (3) comment number so that the public can compare public comments received by DOE with the comment summaries and response provided herein.

Part I
RESPONSIVENESS SUMMARY FOR REVISED PROPOSED PLAN

1. Pit 9 Interim Action Purpose

1.1 **Comment:** At the meetings on the original Proposed Plan for Pit 9, we were told that in order to drive an interim action, the risks had to be high. At that time, we were told that the risks were high. Now, the DOE says that the risk evaluation for Pit 9 was incorrect. It appears that DOE has backed off of the risks posed by Pit 9.

Response: The Action Plan of the Federal Facility Agreement/Consent Order (FFA/CO) describes the planning process for an interim action and indicates that an interim action can be initiated any time the data provide sufficient justification and the three Project Managers agree that immediate action is appropriate. An interim action may be undertaken to eliminate, reduce, or control hazards posed by a site or to expedite completion of total site cleanup. The purpose of this interim action at Pit 9 is to expedite the final cleanup at the RWMC and to reduce the risks associated with the potential for releases of Pit 9 wastes to the environment and groundwater. DOE has not backed off of the risks posed by Pit 9. The risks listed in the original Proposed Plan and the risks mentioned in the public meetings on the original Proposed Plan are documented in the report, preliminary risk evaluation for Pit 9. This report is in the Administrative Record. The report is not in error; however, as DOE stated in the revised Proposed Plan and during the public meetings on the revised Proposed Plan, the preliminary risk evaluation for Pit 9 used conservative assumptions regarding waste distribution throughout Pit 9 and assumed a worker was in direct contact with the waste. The risks outlined in the report are based on a worst case scenario. The revised Proposed Plan summarizes the results of the subsurface sampling conducted to determine the nature and extent of contamination migration below the RWMC. The data, which have been summarized and cited in the revised Proposed Plan, support the interim action for Pit 9 and are in the Administrative Record.

2. Pit 9 Characterization

No comments were received.

3. Pit 9 Materials Disposal

3.1 **Comment:** Commenters disagreed with use of the 10 nCi/gm transuranic (TRU) criteria for determining which waste or soil would be left or returned to the pit and contended that this is a DOE internal directive that has not been legally established as protective of the environment. The commenters suggested that, due to the long half-life of the radioactive contaminants involved and the doubtful ability to maintain institutional control over the site, residential performance criteria (i.e., 1 in 1,000,000) should be used instead of the revised Proposed Plan's proposed industrial carcinogenic risk performance criteria (e.g., 1 in 10,000).

Response: For a resident living next to Pit 9, the 10 nCi/gm TRU criterion for materials left in the pit or for treated soils and materials returned to the pit is protective of human health. This scenario assumes that a land use restriction is in place to prevent residential use of the Pit 9 surface area. The Pit 9 Residual Risk Assessment, which is in the Administrative Record, characterized the risk due to 10 nCi/gm TRU to a resident living at the Pit 9 boundary as 1.1 in 10,000,000. This is less than the risk performance criteria listed in the National Contingency Plan (NCP) of 1 in 10,000 to 1 in 1,000,000.

3.2 **Comment:** Will quality assurance mechanisms be used to ensure that noncontaminated materials are not mixed with contaminated waste in order to achieve the 10 nCi/gm TRU criteria to return the material to the pit?

Response: Pursuant to the Resource Conservation and Recovery Act (RCRA) 40 CFR 268.3, it is illegal to dilute a restricted waste or the residual from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with disposal standards under RCRA. There will be continuous independent oversight of the remedial subcontractor. Such oversight will consist of surveillance and audits to ensure that noncontaminated soils and materials are not mixed with contaminated waste to achieve the 10 nCi/gm TRU criteria to return the material to the pit.

3.3 **Comment:** What will be the character of waste that will be returned to the pit?

Response: As stated in the revised Proposed Plan, the criteria for return of waste and/or materials to Pit 9 after treatment will be: (1) average concentrations of TRU isotopes in residuals (i.e., treated waste streams) being returned would be <10 nCi/gm and (2) wastes and/or materials in Pit 9 containing >10 nCi/gm TRU would be treated to reduce the volume by >90% prior to returning to the pit. Hazardous constituents in the waste will be treated to meet the RCRA Land Disposal Restriction (LDR) treatment standards.

3.4 **Comment:** Where will the residual TRU waste be stored?

Response: The concentrated TRU material that will result from the selected treatment process will be stored in modules meeting RCRA requirements at the RWMC.

3.5 **Comment:** The 10 nCi/gm TRU cleanup standard will allow some plutonium to remain in the pit. How many pounds of plutonium will remain in the pit upon completion of this interim action?

Response: There will be approximately three to four pounds of plutonium remaining in Pit 9 after the cleanup. The Agencies emphasize that the actual volume of plutonium returned to the pit cannot be predicted with certainty and will depend on the actual concentration levels encountered during cleanup.

3.6 **Comment:** For each type and size of radionuclide that is returned to the pit, what will be the mrem/hr dose rate to humans?

Response: For a receptor located at Pit 9, the dose rate from plutonium is 4.3×10^{-23} mrem/hr and the dose rate from americium is 1.2×10^{-20} mrem/hr. The type and size of each radionuclide that is returned to the pit has no bearing on the dose rate to humans.

3.7 **Comment:** Two hundred years from now, what will be the radiation dose from the material that is returned to the pit to the users of the aquifer?

Response: Modeling of radionuclide transport to the aquifer indicated that radionuclides from Pit 9 will not migrate to the groundwater during the evaluated time period (1000 years). Consequently, there are no risks from potential ingestion of groundwater to future receptors (industrial or residential) at the Pit 9 boundary 200 years from now. This modeling is described in the Pit 9 Residual Risk Assessment, which is in the Administrative Record.

3.8 **Comment:** May DOE legally bury the residual waste, which is placed in barrels, as low-level waste?

Response: If "residual waste" refers to the concentrated TRU material that will result from the selected treatment process, then DOE may not legally bury this material as low-level waste. However, if "residual waste" refers to material that is <10 nCi/gm TRU after treatment, then DOE may and will legally bury the material in Pit 9. This assumes that the wastes and/or materials in Pit 9 containing >10 nCi/gm TRU would be treated to reduce the volume by >90% and the hazardous constituents of the waste meet the RCRA LDR treatment standards.

4. General Technical

No comments were received.

5. Risk Assessment

5.1 **Comment:** Commenters felt that the Pit 9 documents supporting the radiological inventory used in the risk evaluation contained inaccurate assumptions which lead to confusion and an underestimation of the radionuclide inventories, potential migration of contaminants, and probable hazards at Pit 9. These inaccurate assumptions concern: (a) disposition of the total volume of waste shipped from Rocky Flats to INEL, (b) the radionuclide inventory of waste in Pit 9, (c) uniform distribution of Pu-239 throughout the waste volume in Pit 9, (d) nonmigration of radionuclides below the 150-foot level, (e) implementation of 100-year institutional control measures at Pit 9, (f) the current presence of a layer of soil underlying Pit 9 that assists in filtering contaminants, and (g) nonconservative precipitation rates used to calculate leachate factors for reinterred waste. The commenters cited data from various EG&G Idaho and United States Geological Survey (USGS) reports to support these comments.

Response: The preliminary risk evaluation used actual records to determine the amount of waste disposed in Pit 9. The preliminary risk evaluation used very conservative assumptions regarding waste distribution throughout Pit 9 and assumed a worker was in direct contact with the waste. As a result, the preliminary risk evaluation overestimated the risk to RWMC worker health posed by Pit 9. The assumptions in the preliminary risk evaluation do not reflect physical conditions at Pit 9; the preliminary risk evaluation was weighted on the side of safety to ensure that all potential risks were considered.

Conservative precipitation rates and groundwater infiltration rates were used in the transport modeling.

The data cited by the commenters in support of this comment concern the total radioactive inventory of all the TRU-contaminated pits and trenches in the Subsurface Disposal Area (SDA). The data used in the Pit 9 preliminary risk evaluation were taken from actual disposal records of radioactive wastes in Pit 9.

USGS Open File Report 76-471, Hydrology of the Solid Waste Burial Ground, as Related to the Potential Migration of Radionuclides, Idaho National Engineering Laboratory, which is in the Administrative Record, describes the results of a study to evaluate subsurface transport of man-made radionuclides from the SDA. This report contains analytical data that indicate minute amounts of man-made radionuclides have migrated from the SDA toward the Snake River Plain Aquifer. An independent contractor has compiled and reviewed all analytical data from core drilling in the basalt below the SDA to determine the significance of the analysis of radionuclides. Their peer-reviewed report, which is in the Administrative Record, concluded qualitative and quantitative data analyses support the conclusion that americium-241, cobalt-60, plutonium-238, plutonium-239, and plutonium-240 are present in the interbedded sediments 110 feet below the surface. The results of the data analyses do not support the presence of man-made radionuclides in the discontinuous interbed at 30 feet below ground level nor the interbedded sediments at 240 feet below ground level. The report is titled Compilation and Summarization of the Subsurface Disposal Area Radionuclide Transport Data at the Radioactive Waste Management Complex.

Because the waste returned to Pit 9 is low-level waste, DOE Order 5820.2A requires active institutional control of Pit 9 for a 100-year period. Therefore, in order to accurately assess the risks following pit remediation, it is necessary to assess the risks associated with a scenario involving a 100-year institutional control period as is done in the Pit 9 Residual Risk Assessment.

Assumptions regarding the presence of a layer of soil underlying Pit 9 are based upon actual records describing pit design and waste disposal techniques which were in place at the time of pit operation. Those records provide the best information available for characterization of conditions within the pit and indicate the basalt surface was covered with a 3.5-foot layer of soil. Modeling efforts undertaken in association with this interim action highlight the significant sorptive capacity of this soil layer in relation to the radionuclide contaminants within Pit 9.

5.2 **Comment:** Commenters noted that the risk evaluation for several potential exposure pathways exceeded the risk-specific concentrations for Am-241, Pu-239, and/or Cs-137 within the

residential and/or occupational exposure scenarios. Also, the risk evaluation is based on understated radionuclide inventories.

Response: The preliminary risk evaluation did show that the occupational and residential exposure scenario exceeded risk levels recommended by the NCP. DOE stated in the revised Proposed Plan and during the public meetings on the revised Proposed Plan that the preliminary risk evaluation for Pit 9 used conservative assumptions regarding waste distribution throughout Pit 9 and assumed a worker was in direct contact with the waste. The risks outlined in that risk evaluation are based on a worst case scenario. The preliminary risk evaluation was based on actual Pit 9 waste disposal records and therefore was not based on understated radionuclide inventories.

5.3 **Comment:** The preliminary risk evaluation for Pit 9 does not refer to the presence of any classified material used to determine the source term for the risk calculation. If this lack of a reference to classified material disposal is intended to suggest that no classified material was disposed of in Pit 9 or other SDA areas, then DOE is obligated to so state.

Response: Pit 9 records do not indicate the presence of any classified materials.

5.4 **Comment:** There is nothing in the Administrative Record which supports DOE's claim that the preliminary risk evaluation overstated the risk to RWMC worker health posed by Pit 9 because the preliminary risk evaluation for Pit 9 used conservative assumptions regarding waste distribution throughout Pit 9 and assumed a worker was in direct contact with the waste.

Response: The introduction to the preliminary risk evaluation for Pit 9, a document in the Administrative Record, states that the assumptions regarding waste distribution and worker location are very conservative. The DOE does not claim that the risk to RWMC worker health is overstated but only observes that the risk evaluation itself assumes conservative conditions, which do not reflect physical conditions at Pit 9. This is also stated in the revised Proposed Plan, which is in the Administrative Record.

6. Regulations and Roles of Government Agencies

6.1 **Comment:** Some commenters were critical of the State of Idaho DEQ and the INEL Oversight Program, alleging they had not provided a credible enforcement and oversight role in the cleanup process. Others expressed that the DEQ was not well informed or was attempting to deliberately mislead the public.

Response: Under the FFA/CO, DEQ is involved in the cleanup decision process for all WAGs and operable units (OUs) at the INEL and is the lead regulatory agency for all of the WAG 7 RWMC OUs and WAG-wide actions. Pursuant to the FFA/CO, DEQ receives all of the information at the same time that is provided by DOE to EPA, whether this consists of copies of reports, sampling results, or draft documents that have been prepared by DOE. DEQ has a duplicate copy of the contents of the Administrative Record which provides immediate access to all of the information that is relied on to support decisions being made. DEQ provides substantial oversight in the development of cleanup strategies, potential alternatives, decisions to undertake treatability studies, initiation of interim actions, etc. DEQ conducts reviews and provides comments (both formally and informally) on all DOE deliverables and documents prepared under FFA/CO schedules and is the final decisionmaker on all decisions at WAG 7. DEQ also ensures that the conditions and requirements of the FFA/CO and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) decision process are carried out and may enforce those requirements in accordance with the FFA/CO. The Project Manager for the State of Idaho participates in regular meetings and conference calls with the DOE and EPA Project Managers, and concurrence among the three Project Managers is often needed on many issues before DOE is able to proceed. The INEL Oversight Program similarly provides another avenue for independent oversight of the cleanup program at the INEL and also is involved in review of the integrated NEPA/CERCLA documentation that is prepared by DOE under its integration policy. These activities and roles on the part of the

State may not always be visible or apparent to members of the public; however, the State carries out a crucial role important to the success of the entire cleanup effort.

6.2 **Comment:** Commenters asked whether an Environmental Impact Statement (EIS) will be necessary for construction of an incinerator or other proposed technologies.

Response: DOE believes that an EIS level of review is unnecessary for the Pit 9 interim action. The Pit 9 interim action is governed by the CERCLA and NCP process and is subject to enforceable deadlines and milestones as published by the FFA/CO. That process includes meeting substantive requirements of federal and state laws and regulations; however, administrative (or procedural) requirements are not imposed on CERCLA cleanups. This approach is needed to achieve the Congressional mandate for expeditious and prompt cleanups and to allow flexibility in formulating the response to be taken at different OUs. Although NEPA is principally a procedural statute, it contains values which mirror many of the considerations that the NCP process evaluates through applicable or relevant and appropriate requirements (ARARs) and other steps in the Remedial Investigation/Feasibility Study (RI/FS) process. As lead agency for CERCLA cleanups at its federal facilities and recognizing the public's greater familiarity with the NEPA process, DOE wanted to assure the public that NEPA values are considered, particularly socioeconomic, ecological, and cumulative impact considerations. As a result, DOE has issued guidance for integrating NEPA values during CERCLA cleanup actions.

While the DOE guidance does not require a separate NEPA process or document, it does require that key NEPA values are integrated into the CERCLA decision process and documentation prepared by DOE. In many cases, this will mean that additional discussions are included in the Proposed Plan, RI/FS report, and ROD. DOE also determines the appropriate level of NEPA discussions to be included in the project-specific integrated documents being prepared. The discussions may thus be equivalent to what DOE would use for an Environmental Assessment (EA) or an EIS, and the final decision is documented in either a Finding Of No Significant Impact (FONSI) or a ROD, which is timed to coincide with the decisions being reached under CERCLA. In some cases, supplemental information addressing NEPA values may be prepared and placed in the information repositories. DOE also provides these documents to the appropriate State, EPA, and Shoshone-Bannock representatives responsible for NEPA reviews at their respective agencies. The public comment required by CERCLA and the NCP is considered to be equal to that which NEPA would otherwise provide, and DOE factors all comments received during public comment periods into its evaluation of the proposed action. These comments are included in the responsiveness summaries that are prepared jointly with EPA and the State.

The documentation prepared for the Pit 9 interim action, including all of the alternatives under consideration in the interim action, consists of the original and revised Proposed Plans and a supplemental environmental information document. These documents include discussions of NEPA values consistent with an EA level of NEPA documentation. In addition, DOE approved categorical exclusions (CXs) for the Proof-of-Process (POP) and Limited Production Test (LPT) phases of the interim action. Based on the information presented in these documents, along with the other evaluations that have been conducted to date and are in the Administrative Record, DOE believes that an EA level of NEPA analysis is appropriate for the Pit 9 interim action. However, the TRU-Contaminated Pits and Trenches RI/FS and/or the comprehensive WAG 7 RI/FS will include reevaluation of Pit 9 and the other OUs in WAG 7. This evaluation will include review pursuant to DOE's NEPA/CERCLA integration policy, and NEPA values will also be included in the RI/FS documentation developed under either of these RI/FSs.

6.3 **Comment:** Commencing a POP test before issuing a ROD would be a violation of the FFA/CO. Another commenter stated that although he favored Alternative 4, it constituted research and development, which are not appropriate under CERCLA, the NCP, or the FFA/CO.

Response: Commencing a POP and LPT does not violate the FFA/CO or the remedy selection process established by CERCLA and the NCP. The POP and LPT are treatability test phases that are consistent with these processes. The POP and LPT test phases are to be performed within the interim action for Pit 9 to prove the reliability, cost effectiveness, and ability to

meet cleanup criteria for the subcontractor processes that are part of the preferred alternative. The full scale remediation phase of the interim action is contingent on the successful demonstration of these techniques.

In the NCP, EPA expresses its expectation that principal threats posed by a site should be treated wherever practicable and that any treatment as part of CERCLA remedies should achieve reductions of 90 to 99% in the concentration or mobility of individual contaminants of concern. In order to achieve these percentage reductions, the treatment technology is expected to involve well-designed and well-operated systems and may involve application of a single technology or a combination of technologies. In the NCP, EPA encourages treatability testing of innovative technologies and expects that the examination of such technologies will be initiated early and carried through to the detailed analysis stage [40 CFR 300.430(a)(1)(iii)(E)]. The POP and LPT fulfill these expectations and are designed to demonstrate that they are technically feasible, cost effective, and reliable for purposes of the full-scale Pit 9 remediation. If these treatability tests do not successfully make these demonstrations, then Pit 9 will be reevaluated for cleanup in the TRU-Contaminated Pits and Trenches RI/FS and/or comprehensive WAG 7 RI/FS.

6.4 **Comment:** DOE violated the FFA/CO by throwing out the preliminary risk evaluation for Pit 9 and not replacing it with an accurate risk evaluation as required by the guidelines in Section 5.0 of the FFA/CO for a Track 2 process. The State of Idaho and the EPA should shut down Pit 9 until such time as a risk evaluation, which drives the interim action, is available to the public.

Response: DOE has not "thrown out" the preliminary risk evaluation for Pit 9. However, DOE has stated that the preliminary risk evaluation used conservative assumptions regarding waste distribution throughout Pit 9 and assumed a worker was in direct contact with the waste. As a result, the preliminary risk evaluation conservatively estimated the risk to RWMC worker health posed by Pit 9. Additionally, Pit 9 is not listed in the FFA/CO as a Track 2 process; rather, it is listed as an interim action (refer to Table A-1, p. A-4 and Table A-2, p. A-22 of the FFA/CO Action Plan). The interim action planning process (refer to the FFA/CO Action Plan, Section 2.5) allows an interim action to be initiated any time the data provide sufficient justification and the three agency Project Managers agree that immediate action is appropriate. The Pit 9 interim action designation was determined as part of the FFA/CO negotiation process, not during or following a Track 2 process (refer to Section 2.4 of the Action Plan). That designation, along with all other OU designations in the Action Plan, was submitted for public comment when the FFA/CO was issued in draft form during the late summer of 1991. The data supporting the Pit 9 interim action are summarized in the revised Proposed Plan and are in the Administrative Record.

6.5 **Comment:** The NCP requires that the Administrative Record shall include a baseline risk assessment, which forms the basis for establishing the cleanup levels and demonstrates the need for an interim action; however, these documents are not in the Administrative Record.

Response: The NCP does not require that the Administrative Record shall include a baseline risk assessment for this interim action; rather, in the NCP, EPA recognizes that a completed baseline risk assessment generally will not be available or necessary to justify an interim action. The NCP requires that qualitative risk information be organized to demonstrate that the site action is necessary to stabilize the site, prevent further degradation, or achieve significant risk reduction quickly (55 FR 8704). Data that support this interim action, including risk information, are in the Administrative Record.

7. Public Involvement

7.1 **Comment:** Some commenters felt that the amount of information provided to the public regarding the proposed Pit 9 interim action was inadequate to permit reasonable evaluation of the Proposed Plan. Others believed that the information provided was inaccurate and trivialized the risks by excluding relevant information. Relevant information, which was allegedly excluded, includes sufficient quantitative data on hazardous concentrations or radioactivity levels (both mass

and activity), identification of the applicable regulatory standards, and quantification of the total volume of materials to be exhumed from Pit 9.

Response: The Agencies made every effort to include in the Administrative Record and revised Proposed Plan all relevant information necessary to evaluate the proposed cleanup. In particular, detailed quantitative data describing hazardous waste volumes contained within Pit 9 are included in the Nonradionuclide Inventory in Pit 9 at the RWMC. In addition, both the mass and activity of radionuclides found in Pit 9 are described in the Methodology for Determination of a Radiological Inventory for Pit 9 and Corresponding Results. Both documents are in the Administrative Record.

EPA guidance requires identification of major ARARs for each alternative listed in the Proposed Plan and a more detailed description of all ARARs in the ROD. The Pit 9 revised Proposed Plan was prepared in accordance with EPA guidance as it includes a discussion of the major ARARs for each alternative. For example, the revised Proposed Plan identifies RCRA LDRs, RCRA closure requirements, and the Clean Air Act/National Emission Standards for Hazardous Air Pollutants (CAA/NESHAP) standards as ARARs for the preferred alternative. A more comprehensive discussion of the regulatory requirements is included in the ROD.

The total volume of materials to be exhumed from Pit 9 under the various remedial alternatives was not included in the revised Proposed Plan. Assumptions regarding the volume of materials exhumed from Pit 9 are included in the ROD. It is estimated that 250,000 ft³ of material would be exhumed and treated under Alternatives 3 and 4. Under Alternative 5, approximately 500,000 ft³ of soil and other materials would be excavated, containerized, and stored.

7.2 **Comment:** One commenter requested that the public comment period be extended a minimum of 30 days beyond the availability of the "white paper" on the proposed technologies in the Administrative Record.

Response: The "white paper" is an engineering design file (EDF) entitled Summary Process Description of Proposed Remedial Alternatives for a Cleanup of Pit 9 at the INEL Radioactive Waste Management Complex. The EDF was placed in the Administrative Record on November 10, 1992. The public comment period was extended for an additional 30 days beyond the original comment period (October 22, 1992, through November 22, 1992). The public comment period thus closed on December 21, 1992.

7.3 **Comment:** Commenters expressed the opinion that the Agencies have not followed the FFA/CO with respect to proper public involvement; however, to insist on proper public involvement in the remediation process at this time would mean that the public would stop cleanup at the INEL. Other commenters felt that DOE's failure to seek public comment prior to deciding to remediate Pit 9 as an interim action and to solicit a Request For Proposal (RFP) for Alternative 4 is a violation of NEPA, the FFA/CO, NCP, and the Community Relations Plan.

Response: Public participation in the decision process for the Pit 9 Project has been designed in accordance with the requirements and guidelines of the NCP, FFA/CO (Part XXIV), and the Community Relations Plan. The Agencies believe that the opportunities for public involvement provided on the original and revised Proposed Plans meet these legal requirements and guidelines. The decision to remediate Pit 9 as an interim action was made by the State, EPA, and DOE and was subject to public comment when the FFA/CO was issued in August 1991 for a 60-day public comment period. The FFA/CO reflected the Pit 9 interim action designation, and this was open to public comment along with all other aspects of the FFA/CO. While the RFP solicitation itself is an internal contractual process not legally subject to public involvement requirements, the Proposed Plan presented the Agencies' preferred Alternative 4 which would involve bringing alternative subcontractors on board to demonstrate effective application of various technical processes to Pit 9. This alternative was subject to two rounds of public comment and preceded any final subcontractor selection based on the RFP solicitation.

7.4 **Comment:** One commenter expressed the opinion that even if the Agencies have obeyed the law with respect to public involvement in the decision making process, at some point the Agencies will need to go beyond the "letter of the law" and involve the public.

Response: Comment noted.

7.5 **Comment:** One commenter expressed the opinion that individuals from the Snake River Alliance should not decide technical issues unless they are technically qualified to do so.

Response: Comment noted.

7.6 **Comment:** Will the public be involved in any air quality permitting process?

Response: Because this interim action will be carried out entirely on the INEL site in accordance with CERCLA Section 121, it is exempt from the administrative requirement of obtaining federal, state, or local permits. However, this interim action must satisfy all the applicable or relevant and appropriate federal and state standards, requirements, criteria, or limitations which would have been included in any permit. Since there will be no air quality permitting process, no further public involvement is anticipated. However, technical fact sheets will periodically be published in order to keep the public apprised.

7.7 **Comment:** A commenter stated that prior to the bid opening for Pit 9 remediation, the commenter requested information and protocols for bid proposals from DOE. The commenter stated that he was told that the information was not available to him, could not be released to him, and that the process was closed in advance of the bidding process.

Response: All bidders who met the requirements outlined in the procurement process summarized below would receive fair and equal consideration. There were three Commerce Business Daily (CBD) notices dated March 14, 1991; March 28, 1992; and May 2, 1992. The May 2, 1992, notice superseded the previous advertisements and was published on May 16, 1992. The solicitation closed 10 working days from this publication date. As is evident by the process described below, the commenter would have been prevented from receiving information on the RFP if interest was not expressed by the deadline listed in the CBD.

The procedure for procurement of services under a government contract controlled by EG&G Idaho is as follows:

- An advertisement is placed in the CBD. A brief outline of the services requested and a deadline by which interested persons must respond to the advertisement are included in the advertisement.
- The process requires that those persons interested in being considered must notify EG&G Idaho procurement in writing by the date listed in the CBD advertisement.
- An RFP is sent to those persons who express interest in writing to the CBD request. Only those individuals who reply to the CBD advertisement by the deadline specified therein can receive the RFP.
- Those persons who reply to the RFP and meet the requirements of the RFP are considered for the request for bid.
- Those persons that meet the RFP requirements are requested to submit a bid on the requested services.
- A selection is made from among the bidders.

8. Pit 9 Cleanup Alternatives

8.1 General Questions on Alternatives

8.1.1 **Comment:** Pursuing Alternatives 2, 3, or 4 is impermissible until completion of the DOE-Headquarters (HQ) Programmatic Environmental Impact Statement (PEIS).

Response: It is permissible to pursue the alternatives included in the Pit 9 interim action prior to issuance of RODs for either of these two EISs. The DOE Environmental Restoration and Waste Management (ER&WM) PEIS was initiated by DOE in October 1990 when DOE published its Notice of Intent (NOI) to prepare the EIS and conduct public scoping meetings. This PEIS is evaluating programmatic alternatives for implementing an integrated ER&WM program across the DOE complex at all DOE facilities. However, the PEIS will not include detailed site-specific analyses of environmental impacts associated with the broader programmatic alternatives. According to the draft Implementation Plan published for the PEIS in January 1992, the ROD for the PEIS is expected during the first quarter of calendar year 1994. In addition, the DOE Idaho Field Office recently published a NOI to prepare an INEL ER&WM EIS and just completed scoping meetings in the State of Idaho. The INEL ER&WM EIS is the site-specific evaluation of potential impacts associated with carrying out ER&WM programs at INEL and from implementing decisions reached by the PEIS. The INEL ER&WM EIS will coordinate with the evaluations included in the ER&WM PEIS. If the ROD for the INEL EIS precedes the PEIS ROD, DOE will review the INEL ROD and EIS again once the PEIS decisions have been reached to assure consistency.

It is permissible to pursue the alternatives included in the Pit 9 interim action prior to issuance of RODs for either of these two EISs. The Pit 9 interim action is governed by the CERCLA process and is subject to enforceable deadlines and milestones as published by the FFA/CO. That process includes meeting the substantive requirements of federal and state laws and regulations. DOE has adopted a policy for integrating NEPA into the CERCLA decision and documentation process. That policy also discusses PEISs and site-specific EISs, such as the INEL ER&WM EIS, and indicates that the timing of these documents may not necessarily coincide with each other or with the project specific integrated NEPA/CERCLA documents being developed under cleanup agreements. Where possible, the EISs will set the stage and framework for the actual cleanup activities being conducted; however, more detailed information may not be available until the project specific NEPA/CERCLA documents are actually prepared. The CERCLA decision process, which legally compels the Pit 9 action, provides the criteria to ensure protection of public health and the environment, and the DOE policy ensures that NEPA values are taken into consideration.

8.1.2 **Comment:** Final disposal of all processed wastes must be in a fully permitted and compliant RCRA Subtitle C facility.

Response: Disposal of wastes processed under Alternative 4 need not be in a RCRA Subtitle C facility. Wastes processed under Alternative 4 will contain RCRA-listed wastes based on historical records. However, the processed wastes will be treated either to levels below the best demonstrated available technology (BDAT) treatment standards listed in 40 CFR Part 268 and/or undergo delisting, or be granted a treatability variance allowing the land disposal of these wastes. The land disposed wastes will still contain RCRA-listed wastes in low concentrations and will be considered hazardous wastes under the "derived from" rule. However, in the event that these wastes can be delisted, they may be managed as solid waste under RCRA Subtitle D. If the wastes cannot be delisted, the wastes would have to be managed under RCRA Subtitle C.

8.1.3 **Comment:** A sixth alternative, which is a combination of Alternatives 4 and 5, is supported. Under this sixth alternative, all waste would be exhumed from the pit, the treatment technology that passes the POP test in Alternative 4 would be utilized, and no treated waste would be returned to the pit.

Response: CERCLA §121 mandates that remedies be protective of human health and the environment. In addition, the remedies should utilize permanent solutions and alternative treatment

technologies or resource recovery technologies to the maximum extent practicable and be cost-effective. Because the commenter's proposed sixth alternative would involve storage and offsite disposal, the cost of this alternative would be substantially higher than the cost of Alternative 4 and would not provide any greater protection to human health and the environment than Alternative 4. Other alternatives were considered and dismissed by the Agencies as not meeting the needs for the interim action. The five alternatives presented in the revised Proposed Plan are the best alternatives for the Pit 9 interim action. The Agencies believe that among the five alternatives presented in the revised Proposed Plan, Alternative 4 provides the best balance of trade-offs among the alternatives with respect to the CERCLA evaluation criteria.

8.1.4 **Comment:** It is clear that the actions which DOE could be taking to clean up the environment could have negative impacts on the environment.

Response: The primary objective of the Pit 9 remediation is to reduce the potential for exposure of workers, the public, and the environment to Pit 9 contaminants. The CERCLA and the NCP processes, which legally compel the Pit 9 action, require that each remediation alternative be evaluated according to nine evaluation criteria. These criteria are listed on Page 7 of the revised Proposed Plan. With respect to "Overall Protection of Human Health and the Environment," one of the nine evaluating criteria, the Agencies have determined that Alternative 4 would reduce the chance of migration of contaminants, thus reducing the risk of exposure to the public and the environment. Further, Alternative 4 would be designed to provide long-term protection to the public and the environment.

8.1.5 **Comment:** Have risk-based remediation levels been established which will ensure that the interim action is the final remedy?

Response: Yes, the 10 nCi/gm TRU criteria for materials left in the pit or for treated soils and materials returned to the pit are protective of human health under a residential scenario. The Pit 9 Residual Risk Assessment, which is in the Administrative Record, characterized the risk due to 10 nCi/gm TRU to a resident living at the Pit 9 boundary as 1.1 in 10,000,000. This is less than the risk performance criteria listed in the NCP of 1 in 10,000 to 1 in 1,000,000.

8.2 Alternative 1 - No Action

No comments were received.

8.3 Alternative 2 - In-Situ Vitrification

No comments were received.

8.4 Alternative 3 - Ex-Situ Vitrification

No comments were received.

8.5 Alternative 4 - Physical Separation/Chemical Extraction/Stabilization Process

8.5.1 **Comment:** The available literature suggests that implementation of the preferred Alternative 4 would not be protective of human health and the environment.

Response: The Pit 9 Residual Risk Assessment, which is in the Administrative Record, characterized the residual risk expected following implementation of the preferred alternative. The assessment shows that risks from TRU to a resident living at the Pit 9 boundary would be 1.1 in 10,000,000. This is less than the risk performance criteria listed in the NCP of 1 in 10,000 to 1 in 1,000,000. Protection of human health and the environment from the hazardous waste contaminants within the pit is achieved by complying with applicable RCRA LDRs and, as necessary, delisting requirements.

8.5.2 **Comment:** Commenters objected to returning treated waste to Pit 9 under Alternative 4 before completion of the pending PEIS, because Pit 9 must be considered collectively with impacts

of other site-wide ER&WM activities. Others are opposed to Alternative 4 and stated that the return of any hazardous waste to the pit would be unacceptable.

Response: The Pit 9 interim action including Alternative 4 may proceed prior to the issuance of RODs for the PEIS and/or the INEL ER&WM EIS. The Pit 9 interim action is governed by CERCLA and is subject to enforceable deadlines and milestones. CERCLA and the NCP processes require that the Pit 9 Project meet substantive requirements of federal and state laws and regulations. DOE's NEPA/CERCLA integration policy recognizes that the timing of a PEIS or site-wide EIS may not necessarily coincide with each other or with the project-specific integrated NEPA/CERCLA documents being developed under cleanup agreements. Where possible, the EISs will set the stage and framework for the actual cleanup activities being conducted; however, more detailed information may not be available until the project-specific integrated NEPA/CERCLA documents are actually prepared. Cumulative impacts will be reviewed in the INEL ER&WM EIS, as well as in the project-specific integrated NEPA/CERCLA documents themselves. DOE's NEPA/CERCLA integration guidance states that, where appropriate, these project-specific documents should reference the site-wide EIS's cumulative impacts assessment of multiple related cleanup actions and major new facilities and update that assessment as necessary. Those project-specific integrated documents that precede a site-wide EIS should assess potential cumulative impacts to which that project would contribute. The Pit 9 revised Proposed Plan included consideration of the cumulative impacts from the Pit 9 Project. NEPA itself allows certain actions to proceed while an EIS is pending, as long as the action will not adversely affect the environment or limit the choice of reasonable alternatives in the pending EIS, and is separately justified and covered by its own NEPA documentation (40 CFR 1506.1). This has been done through the integrated NEPA/CERCLA documentation prepared for Pit 9.

8.5.3 **Comment:** Commenters felt that aspects of Alternative 4 might be illegal under NEPA and RCRA.

Response: The Agencies disagree that elements of Alternative 4 are illegal under NEPA or RCRA. Through the CERCLA and NCP process, all of the substantive requirements of RCRA (and all other federal and state laws and regulations) are required to be met at each OU and WAG undergoing investigation and/or cleanup. The State and EPA review DOE's preliminary determination of the ARARs and add to or object to any of these preliminary determinations should they consider them inappropriate. While CERCLA does not require administrative requirements be observed for remedial actions that are conducted entirely onsite, DOE has adopted a policy of integrating NEPA values with the CERCLA decision process and adds discussions of these values to the CERCLA documentation it prepares. Supplemental information that addresses NEPA values will be placed in the information repositories. The analyses and processes required by CERCLA and the NCP for remedy selections involve essentially the same scope, level of detail, and subject matter that are appropriate under NEPA. DOE provides copies of these project-specific integrated documents to the appropriate State, EPA, and Shoshone-Bannock representatives responsible for NEPA reviews. Also, through the CERCLA public comment process, DOE carries out NEPA public involvement goals. All comments received from members of the public or other Agencies are included in the Administrative Record and are addressed in the responsiveness summaries that are prepared.

8.5.4 **Comment:** A majority of the commenters expressed their support for the proposed cleanup of Pit 9 and stated that the preferred alternative, Alternative 4, appears to be the best method for the cleanup of Pit 9 and that 10 nCi/gm TRU in soils and materials returned to or left in the pit at the conclusion of the remedial action is protective of human health and the environment.

Response: The Agencies believe that Alternative 4 would achieve substantial risk reduction through treatment of the radionuclides and the hazardous material in Pit 9. Alternative 4 utilizes physical/chemical treatment processes to address some of the implementation difficulties and uncertainties associated with stabilization/vitrification of the heterogeneous waste types found in Pit 9. In addition, by significantly reducing the toxicity and volume of contaminants using the physical/chemical treatment prior to stabilization, Alternative 4 will result in a smaller volume of

treatment residuals requiring disposal than those alternatives consisting of a stabilization/vitrification process only. The preferred alternative is believed to provide the best balance of trade-offs among alternatives with respect to the nine CERCLA evaluation criteria.

8.5.5 **Comment:** A commenter strongly supported the preferred alternative and expressed the opinion that the process used in the preferred alternative will have substantial transfer value with respect to the rest of the RWMC and other areas.

Response: It is anticipated that the processes utilized in this interim action will provide useful information regarding the effectiveness of treatment technologies on wastes present at the RWMC.

8.5.6 **Comment:** How much radiation is in the pit? Specify how much radiation will be removed from the pit for each of the two treatment processes under consideration in Alternative 4.

Response: It is assumed that the reference to "radiation in the pit" refers to the amount of TRU radioactive material in the pit. The TRU radiological inventory as of 1992 is:

- 1) plutonium: 1,450 curies (Pu-239 and Pu-240)
- 2) americium: 2,260 curies

In addition, the pit contains 2,930 curies of TRU radionuclides not managed as TRU waste (Pu-241).

The requirement is that the chosen contractor remove at least 90% of the TRU isotopes from the material contaminated with >10 nCi/gm TRU isotopes. Based on this criteria, we expect a minimum of 2,034 curies of americium and 1305 curies of TRU plutonium (Pu-239 and Pu-240) to be removed. The process would also remove 2,637 curies of non-TRU plutonium (Pu-241). In the event that all of Pit 9's waste horizon (500,000 cubic feet) contained 10 nCi/gm, 354 curies of TRU would be left in the pit.

8.5.7 **Comment:** Alternative 4 presents two very complicated treatment processes and these two treatment processes are, in reality, two distinct alternatives which should be presented to the public as such.

Response: The two treatment processes being considered in Alternative 4 involve the same three steps: (1) physical separation, (2) treatment, and (3) stabilization. For this reason, the Agencies feel that the two treatment processes are not two distinct alternatives.

8.5.8 **Comment:** One commenter stated that Alternative 4 is an expensive but viable alternative; another commenter expressed the opinion that the cost of the preferred alternative is too high in light of the fact that the risk is negligible.

Response: Cost effectiveness of the preferred alternative is one of the nine evaluation criteria established by CERCLA and the NCP that was used by the Agencies in evaluating the five alternatives presented in the Proposed Plan. Table 1 in the revised Proposed Plan presents a comparative evaluation of the alternatives in terms of the CERCLA primary balancing criteria that includes cost. The costs presented are rough estimates and Alternative 5 was shown to be the highest cost alternative, with Alternative 2 being the lowest. Alternative 4 ranks between Alternatives 2 and 5 in terms of cost, but based on all of the primary balancing criteria, Alternative 4 rated the highest. Alternative 4 will provide an effective method of substantially and permanently reducing the risks associated with Pit 9 and attain stated remediation goals. Implementation of Alternative 4 at the present time will expedite completion of total site cleanup by reducing the volume of contaminants which must be removed by later cleanup actions. Risk is not the sole factor in determining whether an interim action should be performed. In this case the benefit of reducing the total volume of contaminants in Pit 9 and the present availability of technologies which can effectively reduce contamination levels justify performance of an interim action.

8.5.9 **Comment:** Will returning radionuclides to the pit prevent the alternative of retrieval of radionuclides from the vadose zone?

Response: An interim action cannot be inconsistent with, nor preclude the final remedy. Future cleanup activities concerning final remediation at WAG 7 have not yet been planned. However, it is believed that the Pit 9 interim action will not be inconsistent with nor otherwise adversely affect other WAG 7 remedial actions which may be forthcoming.

8.5.10 **Comment:** One commenter stated in deciding between the two treatment processes under consideration in Alternative 4, DOE should give preference to the process which provides the most stability in the final product as opposed to the most volume reduction.

Response: CERCLA establishes a preference for the selection of remedial actions which involves treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous substances. In this interim action, a requirement for successful completion of the POP and LPT phases is that the treatment residual must be stabilized. In the event that both subcontractor treatment processes pass the POP and LPT, one of the selection criteria will be stability of the waste form, which is in accordance with the CERCLA statutory preference. Thus, in effect, DOE will be giving preference to the process that provides the most stability in the final waste product.

8.5.11 **Comment:** Risks associated with returning residual waste to Pit 9 should be made available to the public before DOE awards any contract.

Response: The Pit 9 Residual Risk Assessment is in the Administrative Record.

8.5.12 **Comment:** One commenter expressed the preference that if Alternative 4 is the alternative chosen, the process which involves the thermal treatment unit should be avoided.

Response: The treatment process that is selected will be the one that meets the CERCLA statutory criteria.

8.5.13 **Comment:** What becomes of the surfactant solution after removal of the organics?

Response: The Alternative 4 process requires only limited quantities of surfactant for organics removal from soil. The surfactant which is introduced to the process will be cycled through the final integrated treatment system consisting of the evaporator, catalytic oxidizer, and scrubber/condenser along with the organic contamination being treated; therefore, no residual contaminated surfactant will result from the Alternative 4 treatment process.

8.6 Alternative 5 - Complete Removal, Storage, and Offsite Disposal

8.6.1 **Comment:** Referring to the "Hanford approach" mandated by the State of Washington, one commenter expressed a preference for complete exhumation of the Pit 9 waste to avoid any further migration and placement into temporary storage for future treatment and disposal. The commenter also supported development and testing of waste treatment technologies to be applied to this exhumed and stored waste.

Response: Comment noted.

8.6.2 **Comment:** Commenters expressed support for Alternative 5.

Response: Comment noted.

8.6.3 **Comment:** At the Moscow meeting on the revised Proposed Plan for Pit 9, the IDHW representative stated that the use of Alternative 5 would be illegal because of the unique combination of contaminants. If this is so, then why was Alternative 5 proposed as an alternative?

Response: Alternative 5 would require the complete removal of all waste and contaminated soil within Pit 9. The mixed waste would then be placed in storage within the area of contamination which is the RWMC. Storage and management of the mixed waste in this manner would not be illegal and would be accomplished in accordance with IDAPA §16.0105008 (40 CFR Part 264.171-178). Alternative 5 was proposed as an alternative because the Agencies considered it to

be a viable alternative, however, Alternative 4 is believed to provide the best balance of the trade-offs among alternatives with respect to the nine CERCLA evaluation criteria.

9. Funding, Budget, and Scheduling of Pit 9 Cleanup

No comments were received.

10. Other Related Concerns

10.1 **Comment:** It is necessary to understand the extent of the entire waste problem at the INEL before DOE can put any remedial cleanup actions into context. This includes understanding the nature and radioactive content of the wastes to accurately quantify the risks they pose.

Response: EPA encourages, where appropriate, the use of interim actions to expedite the completion of total site cleanup. Pit 9 was selected for an interim action because accurate records exist indicating the nature and quantity of wastes buried in the pit. Since the types of wastes in Pit 9 are known, the risks they pose are more easily understood and are a good candidate for early treatment. The performance of this interim action will also provide useful information regarding the effectiveness of treatment technologies on wastes present at the INEL. This information will assist in evaluating cleanup strategies throughout the site.

10.2 **Comment:** During remediation, the DOE and their contractors are encouraged to use the local labor force as much as possible in order to reduce the impacts posed by outside labor.

Response: Comment noted.

10.3 **Comment:** Comments were received relative to the DOE's Five Year Plan.

Response: These comments have been forwarded to the Project Management Office for the INEL Five Year Plan and will be addressed as part of that responsiveness summary for the Five Year Plan.

10.4 **Comment:** Comments were received regarding the NOI for the ER&WM EIS at the INEL.

Response: These comments have been forwarded to the Project Management Office for the INEL ER&WM EIS and will be addressed as part of that responsiveness summary and published in the EIS Implementation Plan.

10.5 **Comment:** One commenter asked for the answers to the commenters' questions which were submitted regarding the original Pit 9 Proposed Plan.

Response: Responses to comments received relative to the original Proposed Plan are addressed in Part II of this Responsiveness Summary.

10.6 **Comment:** One commenter requested a copy of the documents on which the ROD is based.

Response: The documents on which this ROD is based are in the Administrative Record.

Part II
RESPONSIVENESS SUMMARY FOR ORIGINAL PROPOSED PLAN

1. Pit 9 Interim Action Purpose

1.1 **Comment:** Some commenters sought an explanation of the basis for changing Pit 9's designation in the FFA/CO as a "Track 2" process demonstration to an "interim action" and asked why the public was not informed of the change during the public comment period. These commenters also asked why the interim action was following a Track 2 schedule and how this schedule could be implemented and still meet requirements for design, construction, and pilot operation of a TRU waste handling facility. Other commenters suggested the action should be renamed a "technology demonstration" or "remediation test" instead of an interim action to avoid misleading the public.

Response: There has not been a change in the classification of the Pit 9 action from a Track 2 to an interim action. The Pit 9 interim action is also not following a Track 2 schedule. The final FFA/CO, dated December 4, 1991, identifies the Pit 9 as the Pit 9 Process Demonstration interim action (Table A.1, pg. A-4; Table A.2, pg. A-22). The Action Plan also describes the planning process for an interim action (Section 2.5, pg. 8) and indicates that an interim action can be initiated any time the data provide sufficient justification and the three Project Managers agree that immediate action is appropriate. In addition, the FFA/CO defines an interim action (consistent with how it is defined in the NCP) as "any early action taken in an OU to achieve significant risk reduction quickly, or to expedite completion of total site cleanup, and which should not be inconsistent with nor preclude the implementation of the final remedy." The Agencies have determined that an interim action is warranted for Pit 9 based on the Pit 9 risk evaluation, which indicates a potential for future risk to workers at the RWMC, as well as to expedite completion of the cleanup at WAG 7. While the selected technology for the interim action has not been proven at Pit 9, it is a technology that has been proven on similar materials with success. This technology will be employed for the interim action after its feasibility has been demonstrated during the POP and LPT. It is our intention that the results of this interim action will be consistent with and support the final remedy chosen for Pit 9 as part of the comprehensive WAG 7 RI/FS and remedy selection process.

1.2 **Comment:** Some commenters wanted assurance that any uncertainties associated with the risk assessment were quantified and asked whether there would be significant differences between the estimated risks before and after the proposed alternative action. There will be risks associated with the processing and subsequent disposal of materials from Pit 9; is the difference in the risks before and after implementing the preferred alternative worth the immediate costs of processing? Other commenters asked whether DOE was allowing the creation of a health and environmental problem relative to the storage of waste and providing no reasonable solution.

Response: The preliminary risk evaluation for Pit 9 indicated that remedial action is necessary due to a potential cancer risk from inhalation of americium and plutonium containing particulates of 1 out of 25. In addition, direct external exposure from americium would result in an excess cancer risk of 1 cancer per 3 exposed individuals. While it is recognized that these risks are based upon an exposure scenario involving very conservative assumptions, the Agencies believe the preliminary risk evaluation indicates the potential of significant adverse health effects from Pit 9. As the Pit 9 Residual Risk Assessment shows, residual carcinogenic risks following implementation of the preferred alternative would be 1.1 in 10,000,000 for a resident living at the Pit 9 boundary.

Risks associated with implementing Alternative 4 will be evaluated in a Safety Analysis Report. This evaluation will be the basis of engineering design requirements that must be taken to abate risks to workers, public, and the environment. The Agencies have evaluated the information in the Administrative Record and have decided this interim action is worth the cost of implementing the preferred alternative.

DOE is providing a reasonable solution to the TRU wastes buried in the SDA. This interim action is being conducted to expedite the overall cleanup at the RWMC and to reduce the risks associated with potential migration of Pit 9 wastes to the Snake River Plain Aquifer. The Agencies feel Alternative 4 is a reasonable solution to the environmental risks posed by the contaminants in Pit 9.

1.3 **Comment:** Concern was expressed whether the remediation activities at Pit 9 will be inconsistent with or preclude implementation of other WAG 7 remedial actions, such as the vadose zone or the expected final remedy at WAG 7, and whether the expected final remedy has been identified.

Response: By definition, an interim action should neither be inconsistent with nor preclude implementation of a final remedy. Future remedial activities at the INEL SDA will be covered through the TRU-Contaminated and Trenches RI/FS or the comprehensive WAG 7 RI/FS. Future cleanup activities concerning final remediation at WAG 7 have not yet been planned. However, it is believed that the Pit 9 interim action will not be inconsistent with nor otherwise adversely affect other WAG 7 remedial actions which may be forthcoming.

1.4 **Comment:** Commenters inquired whether an EIS, EA, or RI/FS will be developed for the Pit 9 or the WAG 7 cleanup. If none will be prepared, how will the checks and balances (e.g., comments by affected governments/agencies including the Shoshone-Bannock Tribes), normally provided by these documents, be furnished? One commenter felt that the schedule for the interim action should allow for preparation of an EIS. However, given that the schedule does not include preparation of an EIS, what other process will be used to determine the net benefits from the proposed action? The commenter also felt that a FONSI could not be defended without providing more information.

Response: The FFA/CO is governed by the CERCLA statute and EPA's NCP regulations. The Agreement itself, as well as the process established by these statutory and regulatory requirements, includes extensive checks and balances to ensure involvement by EPA, the State, and other affected governments, or agencies such as the Shoshone-Bannock Tribe. These checks and balances are accomplished during interim actions as well as during the detailed RI/FS process, by seeking input from other agencies, governments and interested members of the public and by complying with all of the requirements of applicable or relevant and appropriate (ARARs) federal and/or state laws and regulations (compliance with ARARs may also involve consultations and coordinations with other federal, state or tribal agencies). Pit 9 is included in WAG 7, and initial scoping for a comprehensive RI/FS for all of WAG 7 is scheduled for FY 1996, with actual implementation following in the FY-97 through FY-98 timeframe. Thus, these checks and balances exist at this time for the Pit 9 interim action and will be observed again later in the context of the comprehensive WAG 7 RI/FS process.

Interim actions taken pursuant to the NCP and the FFA/CO must evaluate and comply with substantive ARARs to the extent practicable within the context of the interim action, recognizing that the RI/FS which follows must also demonstrate compliance with all ARARs. Although NEPA is principally a procedural statute, it does contain values which mirror many of the considerations that the NCP process evaluates through ARARs and other steps in the RI/FS process. As lead agency for CERCLA cleanups at its federal facilities and recognizing the public's greater familiarity with the NEPA process, DOE wanted to assure the public that these NEPA values are considered. Thus, DOE issued a policy which requires integration of NEPA values into the CERCLA decision process where practicable, particularly with regard to socioeconomic, ecological, and cumulative impact considerations.

While DOE's policy does not require a separate NEPA process or document, the policy does require that key NEPA values are integrated into the CERCLA decision process and documentation prepared by DOE. In many cases, this will mean that additional discussions are included in Proposed Plans, RI/FS reports, and RODs. In other cases, supplemental information addressing NEPA values may be prepared and placed in the information repositories. This approach is needed to achieve the CERCLA mandate for expeditious and prompt cleanups and to allow

flexibility in formulating the response to be taken at different operable units. DOE also provides these documents to the appropriate State, EPA, and Shoshone-Bannock representatives that are responsible for NEPA reviews at their respective Agencies. The public comment required by CERCLA and the NCP is considered to be equal to that which NEPA would otherwise provide, and DOE factors all comments received during public comment periods into its evaluation of the proposed action. These comments are included in the responsiveness summaries that are prepared jointly with EPA and the State.

1.5 **Comment:** Several commenters expressed the opinion that corrective action at Pit 9 should be delayed to allow for further research and technology development. A delay would provide a final solution to the problems at Pit 9 instead of just an interim solution. Further, a delay would allow for more time to obtain additional characterization data that would result in a more accurate RI/FS. These commenters also observed that there is no imminent or substantial danger to public health or the environment from continued storage of the buried waste in Pit 9 for another 10 years.

Response: EPA balances the need for prompt, early actions to implement protective measures against the need for a detailed, definitive site risk characterization and analysis of alternative remedial approaches for addressing these risks (in an RI/FS), in order to assure that CERCLA sites are addressed in an expeditious manner as mandated by Congress. This is now incorporated in the "bias for action" approach reflected in the revised NCP (55 FR 8704, March 8, 1990). Early actions should be initiated where appropriate and sites remediated in phases using operable units to eliminate, reduce, or control hazards posed by a site or to expedite the completion of total site cleanup. Interim actions often involve only a few alternatives, or perhaps only one, and a completed baseline risk assessment is generally not available or necessary. However, qualitative risk information is organized to demonstrate the action is needed to stabilize the site, prevent further degradation, or achieve significant risk reduction quickly and thus ultimately support and expedite the eventual total site cleanup. The interim action remedy at Pit 9 was designed with these goals in mind and will help stabilize the site and prevent further degradation. Thus, it will assist the Agencies with the eventual comprehensive WAG 7 RI/FS and remedy selection process. Information obtained during the Pit 9 interim action will be used to further actions at other OUs within WAG 7 as well as support the accuracy of the comprehensive WAG 7 RI/FS. The Agencies have determined that sufficient information exists to justify an interim action at Pit 9, and that the short-term actions will help stabilize the unit and contribute to overall risk reduction and site cleanup.

1.6 **Comment:** What is the relationship between the purpose of this interim action and obtaining private sector participation in ER&WM programs as stated in the revised specifications for the cleanup project at Pit 9? Commenters expressed concern that since proposals for the chemical extraction/physical separation alternative have already been solicited by EG&G Idaho, the relevance of the public meeting and the public comment period appears questionable. They questioned why the public should believe that their comments could influence the Agencies to reevaluate the alternatives.

Response: The DOE determined that solicitation of private sector participation in the remediation of Pit 9 concurrent with preparation of the ROD was necessary to implement an accelerated cleanup schedule.

The Agencies have reevaluated the alternatives based on public comments and have chosen Alternative 4 as the remedial alternative. The private sector solicitation initiated by DOE will support an acceleration of the cleanup schedule. After the interim action ROD is signed, the remediation contract will be awarded and cleanup activities will commence.

1.7 **Comment:** A commenter indicated that basic important information needed to evaluate the risks of different cleanup plans had been requested at the scoping meetings for the ER&WM PEIS and that it would be illegal and dangerous to proceed with Pit 9 cleanup before the ROD for the ER&WM PEIS is issued.

Response: The Pit 9 interim action may proceed prior to issuance of the ROD for the PEIS or for the INEL ER&WM EIS. The Pit 9 interim action is governed by the CERCLA process and is subject to enforceable deadlines and milestones, as published by the FFA/CO. That process includes meeting the substantive requirements of federal and state laws and regulations. DOE has adopted a policy for integrating NEPA into the CERCLA decision and documentation process. That policy also discusses PEISs and site-specific EISs, such as the INEL ER&WM EIS, and indicates that the timing of these documents may not necessarily coincide with each other or with the project-specific integrated NEPA/CERCLA documents being developed under cleanup agreements. This does not prevent the project specific actions from going forward. Where possible, the EISs will set the stage and the framework for the actual cleanup activities being conducted; however, more detailed information may not be available until the project specific integrated NEPA/CERCLA documents are actually prepared. NEPA itself allows certain actions to proceed while an EIS is pending, as long as the action will not adversely affect the environment or limit the choice of reasonable alternatives in the pending EIS, and is separately justified and covered by its own NEPA documentation (40 CFR 1506.1). This occurs through the CERCLA decision process, which legally compels the Pit 9 action and provides the criteria to ensure that the environment is not adversely affected. The DOE policy ensures that NEPA values are taken into consideration during this process. Public comments requesting information at scoping meetings for either of these EISs will be responded to in the context of these two NEPA EIS processes to better enable members of the public to evaluate the information and discussions that will be published in the forthcoming Draft EISs.

2. Pit 9 Characterization

2.1 **Comment:** Why was Pit 9 selected for this action instead of another waste pit or trench at RWMC?

Response: Pit 9 was selected for interim action because a more complete set of disposal records exists than is otherwise available for alternative TRU-Contaminated Pits and Trenches at the RWMC SDA. The information contained in those records characterizes the types and amounts of contaminants of concern essential to supporting a determination of risk. In addition, Pit 9 is representative of the other TRU-Contaminated Pits and Trenches at the RWMC and experience gained during the Pit 9 interim action will be applied to these other areas. Pit 9 was also considered to be a preferable location at the RWMC in that it is somewhat isolated from the other pits and trenches.

2.2 **Comment:** How were the boundaries of Pit 9 determined?

Response: The boundaries of Pit 9 as described in the original Proposed Plan are the actual boundaries of the excavated pit as marked on the ground by metal stakes. Research concerning these boundaries was conducted by reviewing historical records, aerial photos, personnel interviews, and field surveys. The boundaries have been verified for accuracy through additional field surveys and use of noninvasive site characterization technologies.

2.3 **Comment:** How accurate are the inventory records concerning the contaminants that have been buried in Pit 9?

Response: The Pit 9 records are actual shipment and receipt of waste documents for Pit 9, for the period the pit was open to receive waste. The records give DOE a relatively high degree of confidence in the types and amounts of various contaminants within the pit.

2.4 **Comment:** DOE urgently needs the help of a professional historian to update the INEL archives for the pre-1970 period by conducting interviews with current and retired employees.

Response: Comment noted.

2.5 **Comment:** A commenter stated that at one time it was indicated that plutonium was the focus of concern at Pit 9. The Administrative Record now states that americium accounts for 92%

of the risk. What caused this change in the interpretation and should further significant changes be expected as the site is characterized?

Response: There have been no changes in characterization of Pit 9. The large mass of plutonium in the pit is a major concern. Americium is a daughter product of the decay of plutonium. Our records indicate that Pit 9 contains approximately 44 pounds of plutonium and 1.5 pounds of americium. Even though there is less americium than plutonium, americium contributes 92% of the risk to a site worker, in the hypothetical scenario, as described in the preliminary risk evaluation for Pit 9 because it emits gamma radiation. Plutonium emits alpha radiation. The preliminary risk evaluation for Pit 9 indicates that highest cancer risk is attributable to americium and the accompanying external exposure to gamma radiation.

3. Pit 9 Materials Disposal

3.1 **Comment:** Where will TRU and high-level radioactive wastes recovered from Pit 9 be sent for final disposal?

Response: We do not expect to encounter any high-level radioactive waste in Pit 9. The ultimate disposal facility for TRU isotopes and high-level radioactive waste (if encountered) collected under this interim action will be identified in either the TRU-Contaminated Pits and Trenches RI/FS or the comprehensive WAG 7 RI/FS. At the current time, such a facility has not yet been identified.

3.2 **Comment:** When will a disposal facility be ready for wastes removed by Alternatives 4 and 5?

Response: This is an interim action. It will be necessary to identify the ultimate disposal facility for collected and stored Pit 9 waste residuals in the TRU-Contaminated Pits and Trenches RI/FS or the comprehensive WAG 7 RI/FS. We anticipate that appropriate disposal facilities will be available for this waste at that time. However, at the current time, such a facility or facilities have not yet been identified.

3.3 **Comment:** What treatment and disposal requirements will be applied to high-level radioactive wastes recovered from Pit 9?

Response: We do not expect to encounter high-level radioactive wastes in Pit 9. The ultimate disposal facility for TRU isotopes and high level radioactive waste (if encountered) collected under this interim action will be identified in either the TRU-Contaminated Pits and Trenches RI/FS or the comprehensive WAG 7 RI/FS.

3.4 **Comment:** The proposal for reburial of plutonium in Pit 9 that has less than 10 nCi/gm TRU is not safe. Due to potential of the long-term threat of contamination of the aquifer, cleanup should remove all contaminants, not just that above 10 nCi/gm TRU.

Response: A computer model to determine the sensitivity of Pu-239 migration from Pit 9 to the vadose zone to the linear sorption coefficient (k_d) of soil in the waste zone and soil below the waste zone was run. The computer modeling indicates that if soil with a k_d of 459 milliliters/gram (ml/gm) or greater is mixed with the treated materials returned to the pit and a 2-foot layer of soil with a k_d of at least 459 ml/gm is placed on the basalt in the bottom of the pit, then the drinking water standard for gross alpha (15 picocuries/liter) in the Snake River Plain Aquifer will never be violated by contaminants leaching from Pit 9. An example of a soil with a k_d of 459 is clay. DOE is planning to add soil with a k_d greater than 459 ml/gm to eliminate the potential of long-term threat to the aquifer. The computer modeling referenced in this response is detailed in the report, GWScreen Modeling for the Pit 9 - Sensitivity to k_d in the Source and Attenuation Layer. This report is in the Administrative Record.

3.5 **Comment:** A commenter requested documentation concerning what regulations, orders, or documents would prevent the reburial of all the radioactive waste from Pit 9 once it is isolated. The commenter requested clarification as to whether the weight of the barrel or cement used in grouting

would be included in the determination of the suitability for waste reburial (e.g., is it low-level waste). What prevents the "creative packaging" of the waste (e.g., partially filling a drum with waste until the 10 nCi/gm TRU standard is approached) to meet the 10 nCi/gm TRU disposal limit for the RWMC?

Response: Pursuant to RCRA 40 CFR 268.3, it is illegal to dilute a restricted waste or the residual from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with disposal standards under RCRA. There will be continuous independent oversight of the remedial subcontractor. Such oversight will consist of surveillance and audits to ensure that noncontaminated soils and materials are not mixed with contaminated waste in order to achieve the 10 nCi/gm TRU criteria to return the material to the pit.

3.6 **Comment:** Will any of the Pit 9 waste be eligible for reburial at Waste Isolation Pilot Plant (WIPP)?

Response: The Waste Acceptance Criteria for WIPP prohibits acceptance for disposal any TRU wastes that have been previously buried. Materials collected during the Pit 9 interim action will therefore not meet WIPP disposal criteria and cannot be accepted for disposal without altering the WIPP Waste Acceptance Criteria.

3.7 **Comment:** Have agreements been obtained from potential final disposal facilities, local communities, and states for the disposal of Pit 9 waste? How are other facilities, local communities, and states being involved in the decision process for the proposed Pit 9 interim action?

Response: The final disposition of collected Pit 9 interim action materials has not yet been established. Consequently, no agreements have been obtained from potential final disposal facilities, local communities, or states for disposal of Pit 9 waste. Those issues will be addressed under the ROD for the TRU-Contaminated Pits and Trenches RI/FS or the ROD for the comprehensive WAG 7 RI/FS. The Agencies published notices soliciting public comments for the Pit 9 interim action. Any comments received from other communities or states would also be considered and included in the Administrative Record.

3.8 **Comment:** For any federally owned disposal facilities that have been identified to receive Pit 9 waste, explain how the NEPA documentation for such facilities has addressed disposal of Pit 9 wastes.

Response: No federally owned disposal facilities have been identified at this time for the ultimate disposition of Pit 9 wastes; therefore, NEPA documentation has not been prepared.

3.9 **Comment:** Under the various alternatives, what materials would be returned to Pit 9 and why? Before materials containing listed waste residuals are returned to the Pit, what are the applicable legal requirements and/or volume restrictions that must be met? Does replacement of materials into the Pit mean that the Pit becomes a RCRA disposal site and is subject to the requirements of 40 CFR 264.300 [requiring a double liner, engineered cover, and monitoring]?

Response: The only alternatives that involve return of material to the Pit are Alternatives 3 and 4. Under these alternatives, the materials will be treated waste residual which is less than 10 nCi/gm TRU. For wastes and/or materials in Pit 9 that contain greater than 10 nCi/gm TRU, these would be treated to reduce the volume by greater than 90% before being returned to the pit. The reason these materials are being returned is that they have first been treated to levels that are considered by the Agencies to meet legal requirements and be protective for purposes of this limited interim action. After being treated, the waste residuals must be sampled to verify that LDR treatment standards have been met. In addition, delisting of the treatment residual must occur before it is returned to Pit 9. Delisting results in the waste no longer being considered hazardous. This action will make the replaced materials no longer subject to hazardous waste disposal and closure requirements of RCRA Subtitle C. Waste residuals will then be managed as solid waste in accordance with the RCRA Subtitle D (solid waste) and/or state solid waste disposal and closure

requirements. In the event that the waste residuals cannot be delisted, then Pit 9 would be closed as a RCRA hazardous waste landfill under IDAPA §16.01.5008 [40 CFR 264.228(b)].

3.10 **Comment:** One commenter referenced the proposed NCP preamble discussion (53 FR 51444) of when "placement" occurs for purposes of triggering RCRA's LDR. The commenter asked for an explanation of the basis for the 10 nCi/gm TRU level of treatment in terms of BDAT. Alternatively, this commenter asked the Agencies to explain the technological basis for granting a treatability variance for the TRU-contaminated Pit 9 waste.

Response: The NCP (55 FR 8758-8762, March 8, 1990) contains EPA's response to public comments on the applicability, or the relevance and appropriateness, of the LDR standards to a CERCLA remedial action. This discussion first notes that before RCRA is applicable, there must be a listed or characteristic RCRA hazardous waste and the occurrence of either treatment, storage, or disposal (TSD) activity after the effective date of the particular RCRA requirement under consideration. For Pit 9, the BDAT levels established by EPA for LDR wastes are, by definition, only applicable to RCRA hazardous wastes, not to radioactive materials. When dealing with a mixed waste that is also LDR-prohibited, the hazardous component of the mixed waste stream must meet the specified BDAT level. At Pit 9, the 10 nCi/gm TRU criterion for return of treated waste residual to the Pit applies only to the plutonium and americium components of the waste stream, not to the hazardous component of the waste stream. The 10 nCi/gm TRU level is designed to parallel the Nuclear Regulatory Commission requirements contained in 10 CFR Part 61 concerning the land disposal of radioactive waste. These regulations provide that stabilized TRU waste containing <10 nCi/gm TRU may be safely disposed so long as institutional controls are maintained for 100 years over the final disposal site. However, the 10 nCi/gm is not a LDR BDAT level. The hazardous wastes of concern at Pit 9 are primarily lead, beryllium, mercury, barium, and organic solvents. These wastes include listed wastes, and they are also LDR prohibited. Thus, they must be treated to the specified BDAT levels, which are expressed as either concentrations or specific technologies. After treatment, the waste residual must be sampled to verify that the applicable BDAT concentration levels have been met for the organic solvents to satisfy the LDR requirements. Those LDR wastes for which the BDAT is a specific technology will meet the LDR standard through application of the technology(ies) used in the preferred alternative. However, regardless of whether the LDR BDAT has been satisfied, under the derived-from rule [40 CFR 261.3(c)(2)(i)], the treated waste residual is still considered to contain listed waste, unless this waste residual is delisted. Delisting is accomplished in accordance with RCRA substantive requirements (40 CFR 260.20 and 260.22) and EPA guidance for delisting of RCRA wastes during Superfund remedial responses. If the LDR BDAT level has not been achieved, a treatability variance may be appropriate. The NCP (55 FR 8760-8761) contains substantial discussion of the appropriateness of treatability variances for soil and debris derived from CERCLA response actions where the treatment technology is either not appropriate to the waste, or the applicable numerical treatment standard for the waste cannot be achieved. EPA presumes that the current BDAT standards are generally inappropriate or not achievable for soil and debris due to the complex matrices that reduce the effectiveness of the noncombustion technologies applied to treat these wastes. EPA also indicates that these treatability variances will be determined on a site-specific basis and may be approved during the selection of remedy in the CERCLA ROD.

4. General Technical

4.1 **Comment:** Commenters expressed concern that additional time needs to be devoted to developing a more realistic Proposed Plan. Commenters noted that the original Proposed Plan suffers from numerous deficiencies including a lack of knowledge about the preferred alternative; waste and site characterization; expected effluent, processing wastes, end products; the incomplete and inaccurate summarizations of the vitrification technologies; lack of cleanup criteria based on risk reduction rather than cleanup efficiency; and exaggerated, inaccurate, and unrealistic analysis of risks and alternatives.

Response: As more information concerning the preferred alternative (e.g., expected effluent, processing wastes, and end products) becomes available, it will be placed in the Administrative Record.

Pit 9 was selected for an interim action because a more complete set of disposal records exists than is otherwise available for alternative TRU-Contaminated Pits and Trenches at the RWMC SDA. The information in those records characterizes the types and amounts of contaminants of concern and is adequate to support this interim action.

The 10 nCi/gm TRU criterion for materials left in the pit or for treated soils and materials returned to the pit is protective of human health under a residential scenario. The Pit 9 Residual Risk Assessment, which is in the Administrative Record, characterized the risk due to 10 nCi/gm TRU to a resident living at the Pit 9 boundary as 1.1 in 10,000,000. This is less than the risk performance criteria listed in the NCP of 1 in 10,000 to 1 in 1,000,000.

The summarization of the vitrification technologies meets the requirement for a Proposed Plan. Additional, detailed information concerning vitrification technologies has been placed in the public information repositories to support the original Proposed Plan.

The preliminary risk evaluation used actual records to determine the amount of waste disposed in Pit 9. The risk evaluation used very conservative assumptions regarding waste distribution throughout Pit 9 and assumed a worker was in direct contact with the waste. As a result, the preliminary risk evaluation overestimated the risk to RWMC worker health posed by Pit 9. The assumptions in the preliminary risk evaluation do not reflect physical conditions at Pit 9 and was weighted on the side of safety to ensure that all potential risks were considered.

A report titled Evaluation of Remedial Alternatives for Pit 9 Interim Action is in the Administrative Record. This report documents the evaluation of remedial alternatives for this interim action.

4.2 **Comment:** Should the requirement for "reduction in volume" be interpreted as "reduction in waste volume"?

Response: Yes, that is correct.

4.3 **Comment:** What are the criteria and procedures that will be used to establish that treated Pit 9 material can be delisted?

Response: Delisting applies only to listed wastes, mixtures containing listed wastes, or residuals derived from treatment of a listed waste. For onsite CERCLA remedial response actions, delisting of RCRA wastes is accomplished by incorporating the substantive requirements of 40 CFR 260.20 and 40 CFR 260.22 into the remedial process. Delisting is an option when the CERCLA response action will address materials contaminated with RCRA listed waste in low concentrations (including treatment residuals that despite treatment, remain listed wastes under the derived-from rule [40 CFR 261.3(c)(2)]). Unless the listed wastes can be delisted, management of these materials must be in accordance with Subtitle C (e.g., clean closure or landfill closure with an impermeable cap, or a hybrid closure where RCRA closure requirements are relevant and appropriate).

Under RCRA, once sufficient data are collected on the waste and its potential fate and transport, models are run to evaluate the dilution and attenuation of constituents at the hypothetical receptor well. The calculated concentrations of constituents must at least meet the health-based levels used for delisting decisions for the waste to be delisted. The health-based levels used for delisting decisions are named maximum allowed concentration (MAC) levels.

4.4 **Comment:** What kind of contamination control will be used during the cleanup process? Is open air retrieval planned and, if so, how will contamination of workers and the surrounding area be prevented?

Response: Engineered containment will be in place for any retrieval efforts at Pit 9. No open air retrieval will be conducted.

4.5 **Comment:** If a criterion for cleanup is 90% removal of plutonium and americium from Pit 9, why were the in-situ and ex-situ vitrification processes considered? This criterion would appear to eliminate those technologies from the beginning.

Response: The criterion stated in the original Proposed Plan is wastes and/or materials in Pit 9 containing ≥ 10 nCi/gm TRU will be treated to reduce the volume by 90% prior to returning (the treated materials) to the pit. In-situ and ex-situ vitrification technologies have been evaluated against all of the alternatives, based on CERCLA guidance for evaluating alternatives. It is a guideline in the preamble to NCP (see 55 FR 8721) that reduction in volume of contaminants should be between 90 to 99%. The criterion of 90% volume reduction of wastes/materials containing TRU only pertains to the technology proposed under Alternative 4, Chemical Extraction and/or Physical Separation.

4.6 **Comment:** In evaluating the proposed remedial technologies, why not base the definition of what constitutes cleanup on reduction in risk, not a 90% removal efficiency? After all, with only 90% removal, the 10% remaining in an untreated form in the soil would still be 1 in 250 risk for plutonium, and 1 in 30 risk for americium exposure.

Response: CERCLA establishes a preference for remedial actions which permanently and significantly reduce the volume, toxicity, or mobility of hazardous substances. The NCP has established that CERCLA remedies should generally achieve reductions of 90 to 99% mobility of contaminants of concern to qualify as a significant reduction. A 90% or greater removal efficiency thus provides the definition for the amount of cleanup which will satisfy the statutory preference for significant cleanup. A significant cleanup will result in a significant reduction of risk. The Pit 9 Residual Risk Assessment, which is in the Administrative Record, demonstrates that the risk will be reduced below NCP guidelines.

4.7 **Comment:** Has the potential benefit of stabilization in place been examined, both from a national level as well as a local level? To dispose of this material in another state only transfers the toxicity and mobility concerns to the state where it is disposed.

Response: Stabilization in place was evaluated for this interim action under Alternative 2, In-situ Vitrification. We are not involved in a program to analyze stabilization in place on a national level; however, as part of the DOE-HQ ER&WM PEIS, various technologies and the need and potential locations for new or modified TSD facilities are being evaluated on a national level.

4.8 **Comment:** Has consideration been given to the possible presence of hazardous organics or metals that may be present in Pit 9 and will excavation of these materials from Pit 9 pose a risk to worker safety?

Response: The risks associated with implementation of the remedy will be quantified during the design stage through the DOE Safety Analysis and Review System (SARS). Under the SARS, analyses are performed to identify and assess the risk of potential hazards and to identify methods for eliminating or controlling the hazards. Hazards associated with aspects of the selected remedy would be reduced through the use of engineering controls including implementation of health and safety procedures and use of appropriate personal protective equipment. The interim action will be initiated only if it can be demonstrated the action presents no adverse health effects or unacceptable carcinogenic risks to workers or the public.

4.9 **Comment:** The criteria for evaluation of the alternatives account for only the increased risk associated with the interim solution. To conduct a complete evaluation of all of the alternatives, the risk associated with the excavation of organics or hazardous materials, interim storage, treatment, transportation, and final storage should be included.

Response: The interim action is not designed to address the risks associated with the longer term actions involving final treatment, transportation, storage, and/or disposal of Pit 9 materials. The comprehensive WAG 7 RI/FS will address these issues and make recommendations for final actions. The appropriate level of analysis for an interim action as set forth by the NCP and EPA guidance has been applied to the Pit 9 Project.

4.10 **Comment:** A commenter expressed concern that specific details have not been presented as to the proposed course of action to be taken at Pit 9.

Response: Pursuant to the original Proposed Plan, the preferred remedial alternative to be employed at Pit 9 will consist of one or more chemical extraction/physical separation technologies. Selection of the most effective technology(s) will be a function of the success demonstrated by the contractor as well as the history of their safe use. The Agencies believe that achievement of Pit 9 remediation goals can best be accomplished by allowing contractors the opportunity to choose from among the various candidate remediation technologies they know best.

5. Risk Assessment

5.1 **Comment:** Commenters stated that the Preliminary Risk Evaluation and the Summary of Site Risks are exaggerated, unrealistic and misleading. Issues raised by commenters include the assumption that contaminants are uniformly distributed through both the waste and soil overburden is unrealistic, there is no imminent risk when contaminants are covered by several feet of soil overburden, the amount of time a worker was assumed to be in contact with Pit 9 soil was excessive, the risk assessment does not reflect actual levels present at Pit 9, past risk assessments demonstrated acceptable risk, there are no confirmed releases at Pit 9, a baseline risk assessment is not in the public record, there is no justification for the predicted excess cancer risk, and the assessment does not state how calculations were done. Many commenters stated that the present risk does not justify performance of an interim action. One commenter stated that the baseline risk assessment is not in the Administrative Record.

Response: The preliminary risk evaluation is prefaced by an acknowledgment that the computation of risk is very conservative and does not reflect present conditions at Pit 9. The risk evaluation, by conservatively anticipating possible exposure scenarios, is designed to encompass potential future risks rather than assuming that present risks will not change. The commenters correctly observe that the risk evaluation does not reflect present conditions, but a risk assessment which conservatively anticipates potential risks would necessarily assume conditions more conservative than those presently found onsite.

There need not be an imminent risk to justify the performance of an interim action. The NCP expresses a preference for early response action where the action will expedite the completion of total site cleanup. The definition of an interim action in the FFA/CO (drawn from the NCP) also states that an interim action is appropriate where the action expedites completion of total site cleanup. Since the interim action at Pit 9 will stabilize the site, prevent further degradation, and achieve risk reduction, the interim action advances the goal of expediting total site cleanup and thus is an appropriate response.

A baseline risk assessment, which is required for an RI/FS, is not in the Administrative Record. A remedial investigation is not a necessary element of an interim action. However, a baseline risk assessment would be performed as part of the comprehensive WAG 7 RI/FS.

5.2 **Comment:** How were the cancer risks given in the original Proposed Plan determined? What do they mean to the average person and to the workers at the RWMC? Shouldn't the risk assessment also include consideration of the use of shielding, protective clothing, and respiratory protection by workers? Has the risk been evaluated for each of the alternatives?

Response: The industrial scenario assumptions used in the Pit 9 risk evaluation were very conservative and do not reflect current conditions at Pit 9 today. There is not an exposure pathway between Pit 9 contaminants to workers or members of the public at this time. However, the results of the risk evaluation provide direction for determining the types of protection required for a worker at Pit 9. Risk to a worker associated with each of the alternatives has not been individually evaluated.

The cancer risks listed in the original Proposed Plan involve three types of hypothetical, future site worker exposure scenarios: (1) inhalation of contaminated soil, (2) external exposure to radiation, and (3) ingestion of contaminated soil. The risk evaluation identified the radionuclides americium and plutonium as posing the greatest potential carcinogenic risk to a future site worker

under these scenarios. Because risk evaluations of this type are based on very conservative assumptions, no credit for risk reduction has been taken for use of shielding and protective clothing. In this way, the risk assessment can be used to determine the level of protection necessary for the public, workers, and the environment.

5.3 **Comment:** Why did the risk assessment assume that all of the airborne particulate matter at RWMC originates at RWMC; isn't there a possibility that some of this material becomes airborne upwind of RWMC? Why not determine the concentration of particles originating upwind and subtract this quantity from the downwind value to determine the actual contribution of RWMC to the airborne particulate loading? If levels are really this high, why isn't an air permit necessary?

Response: The upwind concentration of airborne particles was considered insignificant compared to the contribution of particulate material arising from Pit 9 under the assumptions of the risk evaluation. This assumption errs on the side of conservatism and does not reflect actual conditions at the RWMC. Because this interim action will be carried out entirely on the INEL site in accordance with CERCLA Section 121, it is exempt from the administrative requirement of obtaining federal, state, or local permits. However, this interim action must satisfy all the applicable or relevant and appropriate federal and state standards, requirements, criteria, or limitations which would have been included in any permit.

5.4 **Comment:** What are the technologies that may be used for processing materials removed from Pit 9? What are the expected effluent, processing wastes, and end products of these processes and what risks are associated with their storage and disposal?

Response: Two treatment technologies for materials excavated from Pit 9 are listed as alternatives in the original Proposed Plan. These are ex-situ vitrification and chemical extraction and/or physical separation. Effluent resulting from the ex-situ vitrification process would be air particulates, volatile gases, and thermal melt residues. The particulates could contain radionuclides and/or products resulting from the incomplete burn (destruction) of organic contaminants in the waste. Control technologies such as engineered containment, the use of high efficiency particulate air (HEPA) filters, and carbon absorber beds can be used to capture flue gas stream particulates and volatile materials. The end product process waste of ex-situ vitrification would consist of a glassy matrix that meets LDR requirements of RCRA. The process melt residue would still contain radionuclides immobilized in the glassy matrix. The glass matrix would be returned to Pit 9 for disposal. Potential technologies under the chemical extraction and/or physical separation process include soil washing, wet or dry screening, flotation, gravity concentration, sedimentation, and filtration. Since the treated material will be returned to Pit 9 for disposal, the material must meet LDR requirements of RCRA. The end products of this alternative must achieve a 90% reduction in the volume of wastes. Material returned to Pit 9 would contain 10 nCi/gm or less of radionuclides and would meet RCRA LDR requirements. The concentrated residuals are expected to contain either TRU waste or mixed waste (TRU-contaminated RCRA waste). That removed residual material would be stored on site until a permanent disposal facility is identified in the TRU-Contaminated Pits and Trenches RI/FS ROD. The risks associated with waste storage and disposal for these alternatives have not yet been calculated.

5.5 **Comment:** If the stated risk to workers and the public truly exists, why have RWMC personnel been allowed to work on and about the surface of Pit 9 without protective equipment, and why haven't administrative controls, such as a fence or an asphalt cap, been used to reduce this risk?

Response: Ongoing administrative controls such as access restrictions and site condition monitoring are in effect at Pit 9. The assumptions of the industrial scenario used in the Pit 9 risk evaluation were very conservative and do not reflect actual conditions at Pit 9 today. There is no exposure pathway of Pit 9 contaminants to workers or the public at this time. The risk evaluation identified a pathway for Pit 9 contaminants to reach ground surface and the potential risk associated with those contaminants to a site worker.

5.6 **Comment:** A commenter requested documentation substantiating the statement in the original Proposed Plan that "Storage of the large quantity of packaged waste in Alternative 5 could potentially pose a radiological hazard to workers, community, and the environment" and the calculation of risks associated with the storage of waste for Alternative 5.

Response: The original Proposed Plan states, in part, "A quantitative evaluation of risks to workers associated with implementation of the alternatives was not possible at this time because of the conceptual nature of the alternatives." Accordingly, documentation is not available to support this statement. The risks associated with the storage of waste under Alternative 5 have not been calculated.

6. Regulations and Roles of Government Agencies

6.1 **Comment:** When would the actions performed under Alternatives 3, 4, and 5 cease to be guided by CERCLA and become RCRA Waste Management activities?

Response: All of the remedial actions at the INEL, a federal facility site listed on the National Priorities List (NPL), are being undertaken pursuant to the CERCLA §120 FFA/CO and the enforceable schedules included in the Action Plan portion of that agreement. Those schedules show that it will take approximately 10 years to achieve RODs at all WAGs at the INEL. Actual remedial actions will take approximately an additional 20 years at the INEL site. The CERCLA and NCP process, which includes meeting or attaining the requirements of all federal and state ARARs, remains in full force and effect for the duration of all cleanup activities, until the INEL is eventually removed by EPA from the NPL. Thus, actions under the Pit 9 alternatives would continue to be controlled by the CERCLA process. However, through the ARARs process, RCRA or State of Idaho Hazardous Waste Management Act (HWMA) requirements will apply or be considered relevant and appropriate and must be met for any of these alternatives.

6.2 **Comment:** On what basis, in terms of ARARs and the CERCLA evaluation criteria, will a treatability variance be granted to LDR waste constituents of Pit 9? Why are LDRs only being considered as potential ARARs?

Response: The treatment processes of Alternative 4 are expected to reduce the concentrations of RCRA LDR prohibited wastes below BDAT concentration limits in 40 CFR Part 268. However, a treatability variance will also be included in the ROD to address the contingency that these concentration limits are not met. EPA recognizes that current BDAT standards are generally inappropriate for use on soil and debris since BDAT treatment levels are based on industrial waste streams, not soil and debris. In the NCP, EPA presumes that contaminated soil and debris are significantly different from the wastes evaluated in establishing the BDAT standards and thus qualifies for a treatability variance. The wastes must be treated to the levels listed in Superfund LDR Guide #6A (2nd Edition), "Obtaining a Soil and Debris Treatability Variance for Remedial Actions," for a treatability variance to be granted.

RCRA LDRs are listed as potential ARARs since records for Pit 9 indicate RCRA-listed wastes are present at the site, although they were deposited at Pit 9 prior to 1980. Assuming an LDR-prohibited waste is present, LDRs will be ARARs for that waste.

6.3 **Comment:** Commenters stated that there is no indication from information available in the repositories that other governmental agencies or authorities besides DOE were involved in reviewing and commenting on the Pit 9 cleanup original Proposed Plan, the RFP and related documents including contractor requirements for handling, transporting, and disposing of hazardous waste. The DOE and the other agencies would be better served to include more of the give-and-take information such as that included in environmental permit application packets. The comments made by EPA and the State must be included in the public record; to do otherwise prevents public knowledge of any role that parties other than DOE have.

Response: This interim action has three project managers—one from the DOE, one from the EPA, and one from the State of Idaho. These project managers are responsible for the preparation of the original Proposed Plan and this document. All parties interested in reviewing and

commenting on the original Proposed Plan had the opportunity to do so during the 60-day public comment period from December 13, 1991 to February 11, 1992. All comments submitted on the original Proposed Plan are documented in the Administrative Record. Review of draft comments by EPA and the State of Idaho is addressed in the FFA/CO (Part VIII, pg. 14-21). Formal comments are not required on the part of EPA and the State for secondary documents, which include Proposed Plans. Informal meetings with EPA and the State occur where DOE responds to oral questions and comments; however, these are not required to be the subject of a written response by DOE, nor are these comments required to be submitted by the regulatory Agencies in writing. To the extent that EPA or the State submits any written comments to DOE, these would be included in the Administrative Record.

6.4 **Comment:** What is the Project Manager's role? It is not described in any of the documents available.

Response: Section 4.0, "Project Management," in the Action Plan portion of the FFA/CO states in part, as provided in Part VII of the Agreement, each Party to the Agreement is represented by a Project Manager (see Appendix D). The Project Manager shall:

- Manage INEL remedial activities for their respective Agencies pursuant to the Agreement and Action Plan
- Serve as primary contacts and coordinators for their respective Agencies for purposes of implementing the Agreement and Action Plan
- Prioritize work
- Coordinate activities of WAG Managers, who are identified by the Project Managers, as necessary
- Evaluate and approve changes to an OU based on investigation findings, and
- Prepare monthly progress reports.

7. Public Involvement

7.1 **Comment:** Commenters requested that the public needs to have additional opportunities for input as the cleanup of Pit 9 progresses. Suggested public input opportunities include the test phases (Alternative 4) and the design phase of the remediation plan.

Response: It is the intent of the Agencies to keep the public updated on the status of activities occurring for the remediation of Pit 9. The results of the two test phases and the design for remediation will be documented in the Administrative Record and placed in the information repositories. Fact sheets will also be prepared and periodically issued by the Agencies in an effort to keep the public apprised of progress at Pit 9.

7.2 **Comment:** Will the public be involved in the design phase of the remediation plan?

Response: No, the public will not be involved in the design phase of the remediation plan. DOE plans to keep the public informed by publishing fact sheets that will detail the remedial design. Additionally, DOE is considering holding public informational meetings.

7.3 **Comment:** Why are comments and questions raised by the public during the informal question and answer (Q & A) phase of the meeting not specifically addressed by the Agencies in the Responsiveness Summary. Government Agencies have an obligation to listen and respond to citizens' concerns regardless in which phase of the public meeting they are raised. It appears that by not responding to the comments and questions raised during the informal Q & A period,

important considerations which are raised by the citizenry are not specifically addressed by the Agencies.

Response: The Agencies jointly agreed on the public meeting format for Pit 9 based on input received from the public at other public meetings. The Agencies believe that providing an opportunity to first informally interact with agency representatives and receive immediate answers to questions helps the public formulate their comments to present in the formal comment portion of the meeting. This approach accommodates those members of the public who are more reluctant to have every statement they make part of the official transcript of the proceedings. The meeting format was identified in published announcements and the public was informed at the beginning of the public meeting that the meeting would be divided into two parts—an informal question and answer session, where comments and questions could be immediately responded to by a panel of agency representatives, followed by the formal comment session recorded by a court reporter. The public was requested to provide their formal comments on the original Proposed Plan either during the formal comment session of the meeting or in writing prior to the close of the public comment period. A verbatim transcript of the entire formal session of the public meeting has been prepared, reviewed by the Agencies, and placed in the Administrative Record. In addition, all written comments submitted during the public comment period have been reviewed and placed in the Administrative Record. While the questions or comments raised during the informal session of the public meeting are not included in this Responsiveness Summary, the Agencies believe that the meeting format represented a reasonable accommodation to different needs expressed by the public and provided ample opportunity to communicate formal concerns to the Agencies about the original Proposed Plan. This is reflected by the number of comments that were received and that are responded to in this Responsiveness Summary.

7.4 **Comment:** When the preferred alternative is actually developed, the Proposed Plan should be resubmitted for public comment from the broad community that INEL has traditionally sought to serve.

Response: During the review of comments on the Proposed Plan, the Agencies reassessed their initial determination that the preferred alternative provides the best balance of trade-offs, factored in new information and points of view, and revised the Proposed Plan to add a stabilization compared to the Preferred Alternative. Since this constituted a fundamental change from what was presented in the original Proposed Plan, the agencies issued a revised Proposed Plan and conducted a second set of public meetings. Meetings were held in five Idaho communities, and a second, 60-day public comment period was provided to allow further input on all aspects of the Proposed Plan, including the preferred alternative.

7.5 **Comment:** Commenters criticized the Agencies' efforts to obtain public review and acceptance of the Pit 9 cleanup plan. The Agencies should consider the degree to which avoiding the inconvenience of public participation contributed to the problems at Pit 9. In addition, only one public meeting was held on the original Proposed Plan for Pit 9, which involves substantially greater cost and complexity than the Proposed Plans for other cleanups such as the TRA Warm Waste Pond, which held two rounds of public meetings (first in five Idaho communities and then in three Idaho communities). Usually public meetings and hearings on INEL issues are held in at least three Idaho communities. Meetings should have been held at least in Pocatello, Twin Falls, and Boise, in addition to Idaho Falls. As a result, attempts to determine public acceptance of the Pit 9 preferred alternative are inadequate.

Response: The Agencies consider public participation to be an important element of the Pit 9 interim action decision process. As part of the response to comments received during the initial public comment period and public meeting conducted in Idaho Falls for the original Proposed Plan, a revised Proposed Plan was prepared and another round of public meetings with a second public comment period was provided. The second set of meetings was held in five Idaho locations. There is no established rule that public meetings must be held in a minimum of three Idaho communities, nor does the complexity or potential cost of the response action dictate the number or location of public meetings that will be conducted. The goal is to disseminate information as

effectively as possible, reaching those most likely to be interested in the action. The public comment period is available to all interested parties and is widely announced in media announcements across the state. The Agencies follow CERCLA and NCP requirements for public involvement, which require the lead agency to provide an opportunity for a public meeting at or near the site at issue [40 CFR §300.430(f)(3)]. The Agencies also refer to established policy and procedures developed for public participation during remedial response actions (for example, refer to EPA's Community Relations in Superfund Handbook, OSWER Dir. 9230.0-3B, June 1988 and DOE's Public Participation in Environmental Restoration Activities, DOE/EH-0221, Nov. 1991). The methods used to obtain public involvement on the Pit 9 Project assisted the Agencies with determining the level of public acceptance of the Pit 9 preferred alternative, one of the nine evaluation criteria applied to the detailed analysis of alternatives. These methods were effective and are considered to be adequate in meeting the statutory and regulatory requirements.

7.6 **Comment:** The Agencies' track record in preparing Responsiveness Summaries shows that they sweep public comments into categories that are far too broad, and agency responses to these comments are far too general. This is contrary to previous agency commitments to "interactive" community involvement. The Agencies should ensure in this Responsiveness Summary that they respond to public comments fully and in detail.

Response: EPA has provided guidance on preparing responsiveness summaries in a document entitled "Community Relations in Superfund: A Handbook," OSWER Directive 9230.0-3B, June 1988. This guidance states that a responsiveness summary should be a concise and complete summary of significant comments from the public and the agency's response to these comments. The responsiveness summary should include by way of summary categories references to all significant comments but should not be a point-by-point recitation of each comment. It should be simple, straightforward, and readable. As this guidance suggests, a responsiveness summary should provide complete answers which adequately address the community's concerns, but it is not intended to respond to every comment or provide a level of detail beyond the interest of the public at large. Every comment received is examined completely and carefully, and the commenter's concerns are captured in the summary of comments. Although each individual comment may not receive an individualized response, much effort is made to ensure the summary of comments accurately reflects the commenter's concerns and that the response properly addresses those concerns. This commitment to effective public participation has been an important element in the CERCLA process and will continue to be a significant element in the CERCLA process. In this Responsiveness Summary, an effort has been made to provide more detail in response to this concern; this effort will continue in future responsiveness summaries.

8. Pit 9 Cleanup Alternatives

8.1 General Questions on Alternatives

8.1.1 **Comment:** How were the remedial evaluation criteria quantified, particularly with regards to cost, and what method was used to evaluate the alternatives?

Response: The remedial evaluation criteria and methodology are listed in an EPA guidance document entitled Guidance on Preparing Superfund Decision Documents: The Proposed Plan, The Record of Decision, Explanation of Significant Differences, The Record of Decision, Interim Final, EPA 540/G-89-007, July 1989. Technical professionals reviewed the technologies against the EPA criteria and, by applying their best engineering estimates, derived the alternative ranking presented in the Proposed Plan.

8.1.2 **Comment:** Why are Alternatives 2 and 3, the in-situ and ex-situ vitrification technologies, considered not so good in long-term effectiveness as Alternative 4, Chemical Extraction and/or Physical Separation, when Alternative 4 will only remove 90% of the contamination?

Response: Alternatives 2 and 3 will not remove the main risk drivers, plutonium and americium, from the waste but rather immobilize them within the vitrified waste that will remain in

the pit. The long-term safety and reliability of this technology has not yet been fully demonstrated. Alternative 4 offers better long-term effectiveness because it reduces the volume of hazardous waste by 90%. The long-term effectiveness of waste collection and removal is clearly evident.

8.1.3 Comment: Why was Alternative 2, in-situ vitrification, which has been tested on INEL soils, eliminated for not having been proven on Pit 9 materials, when the chemical extraction subcontractor is to be selected based upon proven experience with INEL soil rather than Pit 9 materials?

Response: In-situ vitrification has been tested on simulated wastes contained within INEL soils. This process has not yet been commercially demonstrated for the types of waste contained within Pit 9. The additional research and development necessary to make this technology useful for the proposed application exceeds the enforceable deadline allowed by the FFA/CO. The subcontractor for Alternative 4 must propose a technology already proven to work on TRU wastes and then demonstrate that this process will work in the soils present at Pit 9.

8.1.4 Comment: Commenters requested consideration of other alternatives such as surface capping, encapsulation, cement mixing stabilization of waste, or an alternative calling for a delay in taking any action due to lack of an imminent threat to the public. Some commenters felt that a delay would also allow for the development of a waste storage repository, or technology and completion of test on Alternatives 2, 3, and 4 before making a decision on which alternative to use, if any.

Response: Comments noted. Other alternatives were considered and dismissed by the Agencies as not meeting the needs for the interim action. The Agencies determined the five alternatives evaluated as the best alternatives. Surface capping is not a permanent solution and therefore was not considered a viable alternative. Alternative 1 (No Action) represents a delay until the final action is decided for this site. A delay to allow the decay of radionuclides would have to be considered under the final action for this site.

Encapsulation is considered as a part of Alternative 3 (Ex-situ Vitrification). Under this alternative, hazardous material is vitrified in an electric furnace or kiln and the organic contaminants are incinerated. Incineration may be included in one of the proposals for Alternative 4 (Chemical Extraction/Physical Separation). However, incineration will not destroy the radionuclides in the waste.

8.1.5 Comment: Why did only Alternative 4 include the option of on-line characterization and physical separation as part of the remediation alternative? If this can be done with this alternative, it should also be able to be done with Alternatives 2 and 3.

Response: Alternative 2 would not involve exhumation of the waste so characterization and physical separation are not possible. Alternative 3 would include line characterization and physical separation to sort and size items in preparation for vitrification. However, these activities would not allow removal of americium and plutonium from the wastes.

8.1.6 Comment: Were all of the alternatives evaluated in detail by experts on each of the technologies before a decision was reached on the preferred alternatives.

Response: The remedial alternatives were evaluated by the technical staffs of the respective Agencies. The result of this process established the preferred alternative.

8.1.7 Comment: Doesn't the end result of the vitrification technologies provide significantly better long-term effectiveness and reduction of toxicity and mobility than Alternative 4? Vitrification technology itself destroys organic contaminants and encapsulates radionuclides and inorganic materials into a glass and crystalline form which is similar to basalt or obsidian, both of which exhibit extreme durability and leach resistance over geologic time periods.

Response: Alternatives 2 and 3 would not reduce the levels of americium or plutonium in the pit. Vitrification technologies have not been demonstrated commercially successful on materials similar to those located within Pit 9. While long-term durability of vitrified materials is suspected,

the process has not been tested and proven durable and leach resistant over geologic time. Alternative 4 provides the best long-term effectiveness and permanence since the americium and plutonium would be reduced to <10 nCi/gm.

8.1.8 **Comment:** The original Proposed Plan states that Alternatives 2 and 3 were partially rejected because they would not "destroy" the radioactive contaminants. None of the alternatives will "destroy" radioactive contaminants.

Response: Comment noted. Alternatives 2 and 3 ranked lower than the Alternative 4 because they: (1) left all of the radionuclides in the pit and (2) had not been proven commercially on materials similar to those located in Pit 9.

8.1.9 **Comment:** The original Proposed Plan should be withdrawn and rewritten objectively. If this is not possible, Alternative 3 should be adapted as it is an internationally accepted form of long-term waste treatment, requires a minimum amount of research and development, and is the least wasteful of taxpayers' money.

Response: Alternative 3 ranked lower than Alternative 4 because it does not remove radionuclides from Pit 9 and has not been proven commercially on materials similar to those located in Pit 9. Also, Alternative 3 would require 3 to 5 years of research and development effort. Alternative 4 technologies are proven and currently available.

8.1.10 **Comment:** Some commenters suggested that radioactive particles which may become airborne during the Pit 9 remediation effort may not be efficiently filtered by the HEPA filters which will be used. One commenter requested documentation of HEPA filter efficiency for particle sizes of Plutonium and Americium for each step of each procedure.

Response: HEPA filters are devices used to remove particulates from air prior to exhausting the air to the environment. These filters are 99.97% efficient at removing 0.3-micron particles from air and are capable of removing particles as small as 0.001 microns. The manufacturing processes which produced the plutonium contamination in Pit 9 normally produced particles ranging in size from 0.1 to 10 microns, with <2% of the total particles being less than 0.1 micron in size. Since the efficiency of HEPA filters does not decline significantly with decreasing particle size, only a very small percentage of particles would pass through one filter. The system which will be used on Pit 9 will contain three HEPA filters in series, so the total system will remove virtually all airborne particles before they can escape the containment. HEPA filters are the industry standard and have been used for many years with a high degree of integrity and success.

8.1.11 **Comment:** A commenter noted that the evaluation criteria states that Alternative 5 does not meet the reduction in toxicity, mobility, etc., short-term effectiveness, and implementability. Alternative 4 does not meet the same criteria.

Response: Through treatment and removal of americium and plutonium, Alternative 4 meets the criteria of reduction of toxicity, mobility, or volume through treatment. It would reduce the volume of contaminated material and reduce the toxicity of treated wastes by removing and concentrating the contaminants which would then be put into storage for offsite disposal. The short-term effectiveness of Alternatives 4 and 5 appear to be about the same. Alternative 5 may be more difficult to implement than Alternative 4, because approximately 10 to 20 times more waste would be packaged and stored for offsite disposal under Alternative 5 than Alternative 4.

8.2 Alternative 1 - No Action

8.2.1 **Comment:** Commenters supported no action as the preferred or wisest course at this time due to the lack of imminent public health threat.

Response: The Agencies believe that the information available justifies proceeding with an interim action at Pit 9 now in order to stabilize the Pit 9 site and expedite the eventual site cleanup. Information learned during application of the selected technology(ies) will also support activities at other operable units within WAG 7 as well as the comprehensive WAG 7 RI/FS.

8.2.2 **Comment:** No action is not acceptable but the cleanup alternative that is selected needs to be effective and environmentally responsible rather than a quick cleanup.

Response: The Agencies agree that no action offers unacceptable levels of risk. It is believed that Alternative 4 will provide an effective method of substantially and permanently reducing the risks associated with Pit 9 and attain stated remediation goals. The fact that it is a proven technology and is currently available allows for immediate implementation of this alternative.

8.3 Alternative 2 - In-situ Vitrification

8.3.1 **Comment:** During the research work that has been performed already, is there a record of volatile organic compounds moving away from the melt zone in-situ vitrification?

Response: The transport of volatile and semivolatile contaminants away from the molten in-situ vitrification melt front is a complex phenomenon involving a large number of mechanisms. One of these mechanisms involves the vaporization and movement of volatile and semivolatile contaminants away from the melt front, until a soil zone is reached where the temperature is sufficient to cause condensation of the vapors. Copies of articles that address this topic will be placed in the information repositories for public review.

8.3.2 **Comment:** Can't vitrified material from this process be more safely removed, packaged, and disposed of than material in loose form?

Response: Assuming that Pit 9 materials and contaminants could undergo successful in-situ vitrification, the vitrified material to be removed from the pit, which contains americium and plutonium, would have to be cut into pieces prior to packaging, transportation, and disposal. This operation has not been demonstrated and contains the prospect that the operation would present as much or more risk than would packaging the material in loose form.

8.3.3 **Comment:** Why does the original Proposed Plan state that in-situ vitrification has not been demonstrated on waste types similar to the Pit 9 environment when intermediate scale tests on simulated buried wastes were conducted in FY-1990 at INEL?

Response: While the intermediate scale in-situ vitrification test at the INEL did employ simulated wastes contained in INEL soils, the test did not include americium and plutonium nor other materials similar to those in Pit 9.

8.3.4 **Comment:** Why weren't the vendors of this technology (in-situ vitrification) allowed to perform characterization in order to design their off-gas system to handle the conditions found at Pit 9 and to determine the amount of physical separation needed for this technology to work?

Response: Alternative 2 proposes to vitrify in place without prior treatment, segregation, or exhumation. By remediating in place, Alternative 2 eliminates risks associated with excavation, classification, and treatment of the wastes in Pit 9. The vendors of this technology were not restricted in performing characterization and did not approach DOE with the concept that prior characterization was needed for Pit 9.

8.4 Alternative 3 - Ex-situ Vitrification

Comments on this alternative have been addressed in other sections of this document.

8.5 Alternative 4 - Chemical Extraction and/or Physical Separation

8.5.1 **Comment:** If material is returned to the pit, what is the nature and expected quantities of hazardous materials that may remain in this material after treatment?

Response: Under this alternative, contaminated material will be excavated from the pit and treated in order to concentrate the radioactive contaminants into 10% of the material excavated. The remaining 90% will be returned to the pit. The material returned to the pit must meet the

following requirements: (a) it must contain <10 nCi/gm TRU, (b) it must be treated to BDAT under the RCRA LDR, and (c) it must be delisted in accordance with RCRA substantive requirements (40 CFR 260.20 and 260.22) and EPA delisting guidance.

8.5.2 **Comment:** If either the POP or LPT fails, what is the planned action?

Response: If either the POP or LPT fails, the process will not be used in this interim action. At that point the project managers can start the selection of a new remedial alternative with a revised Proposed Plan and public comment period or they may decide to remediate Pit 9 during the TRU-Contaminated Pits and Trenches RI/FS.

8.5.3 **Comment:** Several of the commenters expressed their support of Alternative 4. Conditions of support of Alternative 4 were added by some commenters. For example, one commenter requested that the waste materials returned to the pit should be reasonably inert/inactive and stated that the alternative allows the opportunity to reuse, study, compare, and examine the practice of cleanup and reclamation to other sites at INEL. Another commenter suggested ex-situ vitrification of the separated materials to further reduce the leachability of the waste form.

Response: Comments noted.

8.5.4 **Comment:** How can you be sure that an ultimate disposal facility will be available for use by the time it is needed for this alternative?

Response: It is possible that a disposal facility will not be available when it is needed. However, we feel that this alternative offers the best remediation by removing the primary risk drivers, americium and plutonium, from Pit 9. Because the proposed action will be an interim action, disposal of the wastes removed from Pit 9 can be delayed until a decision is provided by the ROD in the TRU-Contaminated and Trenches RI/FS.

8.5.5 **Comment:** How is this remedial alternative consistent with the final remedial action?

Response: The criteria for residuals returned to Pit 9 are found within RCRA LDR requirements and delisting criteria and the <10 nCi/gm TRU criterion. We feel that these requirements make this alternative consistent with the final action because the listed waste residuals treated to RCRA LDR requirements will be delisted (i.e., shown to be nonhazardous waste), and thus no longer subject to disposal and closure requirements of RCRA Subtitle C. In addition, enough americium and plutonium will have been removed from the waste to lower the risk of cancer to future site workers to a level below that of the NCP action level recommendations.

8.5.6 **Comment:** What commercial chemical extraction/physical separation processes have been demonstrated on materials similar to those found in Pit 9?

Response: Extraction/physical separation processes that have been demonstrated on materials similar to those found in Pit 9 are chemical extraction with mineral acid, chemical extraction with complexing agents, screening and classification, gravity concentration, and floatation.

8.5.7 **Comment:** Which RCRA-listed LDR waste types resulting from this cleanup are required to achieve BDAT requirements? Which LDR waste types are not?

Response: The LDR waste types that are anticipated to be encountered within the pit are lead, beryllium, barium, mercury, and some organic solvents. Pit 9 materials contaminated with these wastes would be treated to LDR requirements before being returned to the pit.

8.5.8 **Comment:** Wouldn't Alternative 4 increase the danger of toxicity by concentrating the americium and plutonium and making these materials vulnerable to onsite transport accidents and airborne dispersion?

Response: Under Alternative 4, americium and plutonium would be concentrated, stored above ground surface, and monitored according to standards and procedures similar to those already in use at other storage facilities. Federal regulations concerning the transportation of TRU

waste require a very high level of assurance that a transport accident would not involve a release of americium and plutonium.

8.5.9 **Comment:** The Evaluation of Alternatives table in the original Proposed Plan listed Alternative 4 as superior for long-term effectiveness particularly with regards to reductions in toxicity, mobility, or volume. Isn't this determination short-sighted in that it only considers the site itself and not subsequent transport, treatment, and disposal of the material in a more concentrated and hazardous form?

Response: The comparison inferred by this question is to either leave the contaminants in Pit 9 or remove them. Long-term effectiveness and permanence of a remedy is evaluated by analyzing the magnitude of residual risks and adequacy and reliability of controls. Alternative 4 is the best choice under these criteria as it provides high surety of risk reduction and excellent capabilities for containment monitoring and control during storage. The risk of transporting material elsewhere for disposal will be mitigated through engineering controls to acceptable levels of risk. It should be noted that when one considers reductions in toxicity, mobility, or volume, the analysis factors must appraise the amount of hazardous material destroyed or treated; the treatment process and remedy; reductions potentially achievable in toxicity, mobility, or volume; the irreversibility of treatment; the type and quantity of treatment residual; and the statutory preference for treatment. Alternative 4 is considered to be the best choice under these criteria.

8.5.10 **Comment:** Why not perform ex-situ vitrification of materials after separation and treatment to further reduce the leachability of the waste form?

Response: Remediation of Pit 9 could involve a combination of technologies. Ex-situ vitrification may be included as one of the process steps of Alternative 4. If it is part of a proposal, it will be evaluated against the same criteria as the other proposals. The evaluation and the selected technology(ies) for remediation are documented in the ROD for Pit 9.

8.5.11 **Comment:** Alternative 4 has the best potential for reducing the amount of radioactive waste for long-term storage. If plutonium and americium can be recovered and concentrated by calcination and concentration, then the remainder of the hazardous wastes from Pit 9 can be more economically handled by in-situ vitrification.

Response: The pit must be excavated and the materials treated in order to remove americium and plutonium. Existing RCRA regulations require that treatment residuals cannot be returned to the pit unless these materials meet RCRA LDRs and delisting criteria in 40 CFR 260.20 and 260.22. Once this material meets the RCRA requirements, the waste is considered nonhazardous and in-situ vitrification is unnecessary.

8.5.12 **Comment:** A commenter requested clarification of the percentage and volume of waste that may be returned to Pit 9 if Alternative 4 is selected. The commenter requested recalculation of the risks associated with the reburial rate based on this clarification.

Response: Approximately 90% of the total material excavated from the pit will be returned to the pit under Alternative 4. The comment concerning calculation of the risks associated with placing wastes containing 10 nCi/gm TRU back into the pit is noted.

8.6 Alternative 5 - Complete Removal, Storage, and OffSite Disposal

8.6.1 **Comment:** Long-term storage and offsite disposal cost estimates for Alternative 5 are inflated since most of the non-TRU waste should be returned safely to Pit 9.

Response: The non-TRU hazardous wastes are legally prohibited from being returned to the pit unless the waste first meets RCRA requirements for land disposal of restricted wastes. Alternative 5 is specific in that it is a complete removal of all wastes from the pit, and nothing will go back into the pit. Implementation of Alternative 5 would still require treatment of collected materials to attain RCRA land disposal restriction standards and delisting prior to disposal at any other location.

8.6.2 **Comment:** Alternative 5 was supported by commenters as an effective means to resolve the contamination problem at Pit 9 forever.

Response: Comment noted.

9. Funding, Budget, and Scheduling of Pit 9 Cleanup

9.1 **Comment:** Commenters requested that the public should be provided information on the methodology used to determine cost estimates for the alternatives. Particular interest was expressed in the cost estimated for excavation, long-term storage, disposal of wastes, and the need for a cost-benefit analysis of alternatives.

Response: The methodology used to establish cost estimates of alternatives will be placed in the information repositories and in the Administrative Record.

9.2 **Comment:** Why would excavation for Alternative 4 cost less than excavation for Alternative 5?

Response: Under Alternative 5, the whole pit will be excavated. Under Alternative 4, the pit would be characterized and selectively mined to remove only those materials contaminated with elevated levels of americium and plutonium. It is assumed that there are substantial areas of the pit that are not contaminated with plutonium or americium and would not need exhumation under Alternative 4.

9.3 **Comment:** Is there any possibility that funding for Pit 9 cleanup activities will be delayed?

Response: DOE has stated that funds are available for this project. However, as with all government monies, these funds are subject to congressional appropriations and oversight. This fact may potentially influence the availability of financial support for the Pit 9 project.

9.4 **Comment:** Has a cost benefit analysis been performed for each of the alternatives?

Response: A detailed cost benefit analysis is not required under CERCLA and was not performed for the alternatives. However, the costs associated with each alternative were evaluated using CERCLA requirements and EPA guidance.

9.5 **Comment:** Is information on the cost estimates and cost benefit analysis available to the public?

Response: Cost estimate information for the alternatives will be placed in the information repositories. A cost benefit analysis was not conducted on the alternatives.

9.6 **Comment:** Is funding available for the use of computer automation or robots in any of the alternatives or will cleanup be delayed until it can be done remotely?

Response: DOE is funding a robotics demonstration program. This group does not directly support the Pit 9 cleanup. The use of robotics technology in the Pit 9 interim action depends upon the remedial design submitted by the subcontractor. DOE does not plan to delay the cleanup of Pit 9 until it can be done by robotics.

9.7 **Comment:** How can the final costs of the cleanup be determined now when the final determination of the preferred alternative's technology has not been made?

Response: The final costs of the cleanup cannot be definitively established at this time. The costs are detailed in the original Proposed Plan and represent best engineering estimates based on conceptual design.

9.8 **Comment:** Are cost estimates provided for a "grave-to grave" solution for only contaminants of concern or do they include other wastes as well?

Response: The cost estimates provided in the original Proposed Plan are for a "grave-to-grave" solution only for the contaminants of concern.

9.11 **Comment:** The use of three to six significant figures for the cost estimates provides the false impression of greater knowledge of cost assumptions than actually exists. A range of costs should be provided for each alternative to provide the public with a meaningful cost comparison and an objective ranking.

Response: Comment noted. Consideration of this point will be made in the future.

9.12 **Comment:** Costs associated with cleanup should be the driving factor of selection of a cleanup alternative since the risks are either nonexistent or negligible.

Response: Cost is one of the criteria used to evaluate the appropriateness of remedial action alternatives. The Agencies feel that sufficient risk has been demonstrated to warrant an interim action.

10. Miscellaneous

10.1 **Comment:** Are there any requirements for the Pit 9 contractor to hire local people to do the work instead of bringing people from out of state, thereby causing a loss of economic support to the local communities? How can people from out of state, who are not familiar with conditions at INEL, have the necessary skills and knowledge to do this work?

Response: There are no requirements for the contractor awarded the Pit 9 work to hire local people. It is the contractor's business prerogative to decide whether workers employed by their company will be acquired locally or from out of state sources. The subcontractor will be responsible to provide employees qualified to do the work.

10.2 **Comment:** Is a standard reference document available for terminology, definitions, and acronyms used by DOE and INEL?

Response: A list of INEL Acronyms has been published by EG&G Idaho. This document will be placed in the information repositories. A standard reference document of definitions and terminology used by DOE and INEL does not exist.

10.3 **Comment:** A commenter questioned how energy conservation is being addressed in the cleanup technology designs and if solar technology is being considered for incineration?

Response: Energy conservation is partially addressed through the cost effectiveness of the remedial alternative. Energy conservation is expressly considered in the remedial design phase. Solar technology would be considered if contractors included that technology in their proposal for Alternative 4.

10.4 **Comment:** Are there any documents available to the public which summarize test information on technology demonstrations performed on Pit 9 materials?

Response: No technology demonstrations have been performed on material from Pit 9.

10.5 **Comment:** Several commenters requested an extension of the time limit for public comment on the original Proposed Plan.

Response: The public comment period was extended another 30 days in response to these requests.

10.6 **Comment:** Some comments noted that the Proposed Plan failed to identify the performance of a Natural Resource Damage Assessment (NRDA) under 43 CFR Part 11, or how natural resource damages had been resolved. These comments asked for (a) an explanation of how the proposed remedy for Pit 9 was consistent with any NRDA performed for the RWMC or Pit 9; (b) the identity of the natural resource trustees for INEL and WAG 7; and (c) where, when, and from whom the public could obtain information about natural resource damage assessment reports.

Response: DOE has a dual role with respect to the cleanup actions taking place at the INEL. Under the NCP, DOE is the lead agency for conducting the actual cleanup; under NRDA

regulations, DOE is the primary Federal Trustee at the INEL and is responsible for notifying potential trustees of the cleanup actions at INEL. However, DOE would not perform the actual NRDA. The State of Idaho also plays a dual role for the cleanup actions taking place at the INEL, and specifically at WAG 7 which includes Pit 9. Under the FFA/CO, the State is the lead regulatory agency for overseeing cleanup at Pit 9 and all of WAG 7; under the NRDA regulations, the State is a trustee responsible for protection of state resources at the INEL and would be involved in conducting an NRDA. DOE has already contacted various agencies with respect to potential co-trustee NRDA responsibilities at the INEL. These agencies include the Regional Environmental Officer for the U.S. Dept. of Interior, the U.S. Fish & Wildlife Service, The National Park Service, U.S. Bureau of Land Management, USGS, the Bureau of Indian Affairs, the State of Idaho, and the Shoshone-Bannock Indian Tribe. Interactions between DOE and other trustees will be documented in the Administrative Record.

The NRDA regulations provide for a preassessment screen to determine whether a more detailed NRDA is necessary (43 CFR §11.25). These regulations also allow, and DOE has issued guidance encouraging the use of, the CERCLA ecological assessment process in combination with the preassessment screen of the NRDA regulations to avoid duplication of effort (DOE/EH-0192, June 1991). If natural resource trustees determine, based on the preassessment screen, that a more detailed NRDA is appropriate, they would then initiate preparation of an assessment plan and make an injury determination before any actual damages (i.e., dollar value) are calculated. Much of the information developed during the TRU-Contaminated Pits and Trenches RI/FS or the comprehensive WAG 7 RI/FS may be used by the trustees to satisfy this assessment. At the conclusion of the assessment, the trustees will prepare an assessment report which describes the preassessment screen and all comments and responses that are made. This report would be made available to the public.

The Pit 9 interim action original and revised Proposed Plans included consideration of qualitative ecological risks. A more detailed NRDA for Pit 9 has not yet been conducted. However, part of the State's responsibilities under its dual role at Pit 9 and the rest of WAG 7 is to resolve actions in favor of both cleanup as well as protection of natural resources. The parties intend to use the CERCLA process to develop the information necessary to support the preassessment screen requirements and to share that information with the trustees. This would occur when the baseline risk assessment for the TRU-contaminated Pits and Trenches RI/FS and/or the WAG 7 RI/FS is prepared [40 CFR 300.430(b)(7), (d)-(e); see also, 40 CFR Subpart G, §300.600-615]. This baseline risk assessment includes the ecological assessment and is equivalent to the preassessment screen. It is at this stage that trustees will be in a better position to evaluate whether there are "residual damages" that warrant a more detailed damage assessment. The Pit 9 interim action does not present inconsistency problems with the eventual preassessment screen or NRDA, because part of the purpose of the NRDA process is to evaluate the extent to which residual damages to natural resources have not been cured by the actions already taken.

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William D. Baker		W33-1	08.05.04
Jill Barnes		W1-1	08.05.04
Jack Barraclough		T1-1	08.05.05
Brian E. Barrett		W30-1	08.05.04
Fritz Bjornsen		T6-1	03.03
Fritz Bjornsen		T6-2	03.04
Fritz Bjornsen		T6-6	06.02
Fritz Bjornsen		T6-5	07.06
Fritz Bjornsen		T6-3	08.05.06
Fritz Bjornsen		T6-4	10.02
Carey K. Boyd		W42-1	08.05.04
Beatrice Brailsford		T4-1	06.03
Beatrice Brailsford		T4-2	07.03
Beatrice Brailsford		T4-4	10.03
Beatrice Brailsford, SRA		W17-1	10.03
Beatrice Brailsford		T4-3	10.04
Joseph F. Brean		W19-1	08.05.04
Chuck Broscious/EDI		W25-8	03.01
Chuck Broscious/EDI		W25-10	03.01
Chuck Broscious/EDI		W25-9	03.02
Chuck Broscious/EDI		T9-4	05.01
Chuck Broscious/EDI		W15-7	05.01
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Chuck Broschious/EDI		W15-14	08.01.01
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Mitchell D. Brown		W31-1	08.05.04
Manuel S. Calimlim		W21-1	08.05.04
Steve E. Cannon		W36-1	08.05.04
Fred A. Cook		W22-1	08.05.04
Kerry Cooke		T7-3	06.02
Kerry Cooke		T7-2	07.04
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Kerry Cooke		T7-1	08.05.07
Kerry Cooke		T7-4	10.03
Dennis Donnelly		T2-1	03.05
Dennis Donnelly		T5-1	07.07
Dennis Donnelly		T5-2	08.06.02
Dennis Forsberg		W2-1	08.05.04
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Randall E. Giese		W37-1	08.05.04
Joseph C. Gordon		W27-1	08.05.04
Carolyn Hondo		W41-1	08.05.02
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Lisa Kohn		W49-1	08.05.04
Margaret R. Kohn		W47-1	08.05.04
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James Malburg		W26-1	08.05.04
Joseph G. McCord		W23-1	08.05.04
James L. McKensie		W32-1	08.05.04
Ken Nagy		W44-1	08.05.12
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Ken Nagy		W44-2	08.06.03
Ken Nagy		W44-3	08.06.02
John D. Naylor		W14-1	08.05.04
Walter L. Perkins		W28-1	08.05.04
Peter Rickards, D.P.M.		W18-4	03.06
Peter Rickards, D.P.M.		W18-5	03.07
Peter Rickards, D.P.M.		W18-2	03.08
Peter Rickards, D.P.M.		W18-1	08.05.06
Peter Rickards, D.P.M.		W18-6	08.05.09
Peter Rickards, D.P.M.		W18-3	10.05
Jo Ann Scholes		W5-1	08.05.04
John David Scholes		W4-1	08.05.04
Gary A. Shank		W29-1	08.05.04
Benji Siler		W8-1	08.05.04
Betty Siler		W6-1	08.05.04
J. E. Siler		W9-1	08.05.04
Josie Siler		W7-1	08.05.04
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Roger Turner		W43-1	01.01
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C. E. White, Jr.		W12-1	08.05.10
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T3-3		06.03	Roger Turner
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T4-1		06.03	Beatrice Brailsford
T4-2		07.03	Beatrice Brailsford
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T5-1		07.07	Dennis Donnelly
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T6-1		03.03	Fritz Bjornsen
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W14-1		08.05.04	John D. Naylor
W15-1		08.05.01	Chuck Broschious/EID
W15-10		05.01	Chuck Broschious/EID
W15-11		05.01	Chuck Broschious/EID
W15-12		05.01	Chuck Broschious/EID
W15-13		05.02	Chuck Broschious/EID
W15-14		08.01.01	Chuck Broschious/EID
W15-2		08.05.03	Chuck Broschious/EID
W15-3		08.06.01	Chuck Broschious/EID
W15-4		08.05.02	Chuck Broschious/EID
W15-5		08.01.02	Chuck Broschious/EID
W15-6		06.01	Chuck Broschious/EID
W15-7		05.01	Chuck Broschious/EID
W15-8		05.01	Chuck Broschious/EID
W15-9		07.01	Chuck Broschious/EID
W16-1		07.05	Jack L. Taylor
W17-1		10.03	Beatrice Brailsford/SRA
W18-1		08.05.06	Peter Rickards, D.P.M.
W18-2		03.08	Peter Rickards, D.P.M.
W18-3		10.05	Peter Rickards, D.P.M.
W18-4		03.06	Peter Rickards, D.P.M.
W18-5		03.07	Peter Rickards, D.P.M.
W18-6		08.05.09	Peter Rickards, D.P.M.
W19-1		08.05.04	Joseph F. Brean
W20-1		08.05.04	Lyle Aulner
W21-1		08.05.04	Manuel S. Calimlim
W22-1		08.05.04	Fred A. Cook
W23-1		08.05.04	Joseph G. McCord
W24-1		08.05.04	Charles M. Legatt
W25-1		08.05.01	Chuck Broschious/EID
W25-10		03.01	Chuck Broschious/EDI
W25-11		07.01	Chuck Broschious/EID
W25-12		05.01	Chuck Broschious/EID
W25-13		05.01	Chuck Broschious/EID
W25-14		05.01	Chuck Broschious/EID
W25-15		08.05.02	Chuck Broschious/EID
W25-16		05.02	Chuck Broschious/EID

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W25-3		08.06.01	Chuck Broschious/EID
W25-4		08.01.01	Chuck Broschious/EID
W25-5		08.01.02	Chuck Broschious/EID
W25-6		06.01	Chuck Broschious/EID
W25-7		05.01	Chuck Broschious/EID
W25-7		07.01	Chuck Broschious/EID
W25-8		03.01	Chuck Broschious/EDI
W25-9		03.02	Chuck Broschious/EDI
W26-1		08.05.04	James Malburg
W27-1		08.05.04	Joseph C. Gordon
W28-1		08.05.04	Walter L. Perkins
W29-1		08.05.04	Gary A. Shank
W30-1		08.05.04	Brian E. Barrett
W31-1		08.05.04	Mitchell D. Brown
W32-1		08.05.04	James L. McKensie
W33-1		08.05.04	William D. Baker
W34-1		08.05.04	Mark A. Timm
W35-1		08.05.04	John E. George
W36-1		08.05.04	Steve E. Cannon
W37-1		08.05.04	Randall E. Giese
W38-1		08.05.04	Daniel J. Smith
W39-1		08.05.04	Randall W. Bailey
W40-1		08.05.08	Charles A. Lenkner
W41-1		08.05.02	Carolyn Hondo
W42-1		08.05.04	Carey K. Boyd
W43-1		01.01	Roger Turner
W43-10		07.03	Roger Turner
W43-11		06.05	Roger Turner
W43-12		08.05.07	Roger Turner
W43-13		06.03	Roger Turner
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W43-5		06.04	Roger Turner
W43-6		05.04	Roger Turner
W43-7		08.01.05	Roger Turner
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W43-9		08.05.11	Roger Turner

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W45-1		08.05.08	G.D. Wood
W46-1		08.05.04	Diane Kohn
W47-1		08.05.04	Margaret R. Kohn
W48-1		08.05.04	William A. Kohn
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