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**RESPONSE TO COMMENTS ON REV 0 PLANT 1
ORE SILOS REMOVAL ACTION 13**

XX-XX-XX

OEPA

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COMMENTS

Response to Comments on
Rev O Plant 2 ORE Silos Removal Action 13

OHIO EPA Part I

R-019-1007.3

3566

General Comments

1. Section 6: The work plan states that several activities in this section will be detailed in the design phase of the removal action. DOE must provide engineering drawings to the EPA as they are developed.

Response:

Will comply. Will provide 100% Design Package prior to CFC for EPA's information.

Specific Comments

1. Executive Summary, Page iii, Paragraph 6: Appendix H appears to be an integral part of the sampling and analysis plan in Section 8. A complete sampling and analysis plan must be part of the removal action work plan. Appendix H must be incorporated into Section 8 for review and approval by the Agencies.

Response:

Will comply. Section 8 and Appendix H will be combined and clarified for resubmission as section 8.

2. Section 1, Page 1-1, Paragraph 2: The work plan must state that project activities will be completed in accordance with the RI/FS QAPP.

Response:

Will comply.

3. Section 2, Page 2-1, Paragraph 2: Change the last sentence to include inorganic waste constituents as part of the current waste inventory.

Response:

Will comply.

4. Section 2, Page 2-1, Paragraph 3: "Suspect Areas" is no longer part of the OU3 definition. Use the operable unit definitions in the Amended Consent Agreement.

Response:

Will comply.

5. Section 4, Page 4-1, Paragraph 3: Have HSL analyses been performed on samples of waste from inside the silos. If not, this data needs to be collected. If the data has been collected, please incorporate it in this work plan.

Response:

Will comply. All available data is presented in the RSE, Appendix A. As part of the pre-construction sampling plan HSL analysis will be performed on samples collected.

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6. Section 6.2, Page 6-3, Paragraph 3: Discuss the location(s) of the transite structures.

Response:

Will comply. Paragraph 3 will be expanded to include quantities and locations.

7. Section 6.2, Page 6-4, Figure 6-2: Provide a text explanation of this figure to improve reader understanding of the concept.

Response:

Will comply. This section will be expanded to improve reader understanding of concept.

8. Section 6.6, Page 6-8, Paragraph 1: Designate a storage location for wastes generated by this removal action.

Response:

Will comply. Low level contaminated steel will be stored on plant 1 pad and final disposition will be handled under Removal Action 17 of the Amended Consent Agreement, September 1991. Low level containerized waste will be shipped to NTS pending analysis results from pre-construction sampling. Remainder of materials will be containerized and disposed per site SOP's, pending results of pre-construction sampling analysis.

9. Section 6.6, Page 6-8, Paragraph 2: Change the typographical error, "water" streams to "waste" streams.

Response:

Will comply.

10. Section 8.2, Page 8-1, Paragraph 2: How often will random samples be collected?

Response:

Per revised S & A Plan all preconstruction samples will be analyzed for HSL parameters. The S & A Plan provides for additional sampling should material not previously identified be found.

11. Section 8.2, Page 8-2, Paragraph 1: This section should reference the "Background Sampling Plan" and any resolution of background sampling issues.

Response:

Per the revised S & A Plan, soil and groundwater sampling are no longer included. These were removed since the RA does not require below grade activities, and the containment will prevent liquid movement to ground, and air emissions monitoring equipment will detect any fugitive emission. Aside from Removal Action activities, only routine environmental monitoring samples are collected for soils and groundwater as part of Site Environmental Monitoring Program. Correlation to background is not applicable to this removal action.

12. Section 8.2, Page 8-2, Paragraph 1: Most of the samples described in Appendix H are not being analyzed for HSL constituents.

Response:

Per revised S & A Plan all preconstruction samples will be analyzed for HSL parameters. The S & A Plan provides for additional sampling should material not previously identified be found.

13. Section 8.4, Page 8-6, Paragraph 2: Sampling and monitoring activities described are part of OU3 and OU5 (soils and groundwater) as defined in the Amended Consent Agreement.

Response:

See comment 11.

14. Appendix H, Page 14, Section 2.0: Turnaround time on a sample may preclude using the data as a check on the efficiency of the containment systems. Explain how this will affect the usefulness of the finalized soil sampling data.

Response:

See comment 11.

15. Appendix H, Page 36, Paragraph 2: Explain more clearly what constitutes the silo component system samples.

Response:

Will be clarified in revised S & A Plan. Photographs and a list of silo components detailing preconstruction sampling will be included.

Comment No. 1. The work plan describes two major tasks: (1) removing 14 concrete or tile silos and associated equipment and (2) the shipping and disposing of low-level radioactive waste scrap metal and masonry rubble at the Nevada Test Site (NTS). The work plan should outline procedures for the further management of hazardous or mixed waste because wastes produced by this removal action may generate hazardous waste regulated by the Resource Conservation and Recovery Act (RCRA).

Response:

Based on current sampling analysis and process knowledge, no hazardous wastes are expected. Based on pre-construction sampling data, any RCRA waste will be placed into appropriate existing RCRA storage facilities on site. The potential storage locations are Buildings 64, 68, 79, 80, 81, and KC2 warehouse.

Comment No. 2. Section 3, page 3-1, mentions that Building 72 contains slightly enriched uranium material, but the figure on page 6-2 indicates that the building is empty. This discrepancy should be clarified because of Building 72's close proximity to the silos.

Response:

Will clarify discrepancy.

Comment No. 3. The report identifies four uranyl nitrate hydrate (UNH) storage tanks located immediately south of the silos. These tanks contain approximately 100,000 gallons of a 1 percent concentration of U-235 UNH in a weak nitric acid solution. These tanks are only 25 feet south of the eight tile silos. The report indicates that a protective barrier (not shown in Figure 6-1) will be placed at the north end of the tanks. PRC does not believe that this barrier will be effective if an accident occurs during the removal of the 44-foot-tall tile silos. The report should indicate why the removal of the tile silos takes precedence over the removal of the contents of these tanks. The Plant 1 Ore Silos Removal Site Evaluation (Appendix A, Page 1-2) indicated that the removal action involving the silos should include the removal of the contents of the four UNH tanks.

Response:

The RSE and Management Implementation Plan were developed based on limited data and analysis. Subsequent structural analysis and design engineering associated with the development of the work plan have shown that minimum risk exists to all surrounding structures. This is based on portions of an entire silo collapsing in the direction of the tanks. By providing a 20 foot by 50 foot rooted structure over the north ends of the tanks combined with the physical distance

separating the silo from the tanks, sufficient protection exists to the tanks. Further, it should be noted that the scaffolding will provide additional support to the silo during disassembly and thus reduce the potential of collapse.

Comment No. 4.

As noted in Comment No. 3, the approach of this removal activity is somewhat contradictory with the findings of Appendix A. On Page 1-3 of Appendix A, the report notes Plant 1 (Building 1A) could be damaged during the removal of the silos. However, Section 6 (Page 6-6) does not discuss the effectiveness of the concrete barriers in preventing potential damage to this building. It might be more appropriate to remove materials that could result in a release during such an accident (such as uranium rods and metallic uranium) from Building 1A before silo removal actions begin. If this is not feasible, the work plan must discuss the extent of protection provided by the concrete barriers in case of an accident.

Response:

As a result of studies in item 3, only ground level damage to structures could occur. Ground level damage is defined as fork truck, vehicles or personnel moving equipment that hits the wall. Further the study and subsequent reviews show that the tile silos, should they collapse, would shatter and only these fragments could reach the wall. The concrete barriers are sufficient to protect these structures.

Comment No. 5.

The work plan inconsistently refers to various Quality Assurance Project Plans (QAPP). The sampling and analysis plan described in Sections 8 refers to the RI/FS QAPP, whereas Appendix H refers to the QAPP for "SMS Specific Project Protocol". Appendix G describes the Westinghouse Environmental Management Company (WEMCO) QAPP. The document must be internally consistent with respect to quality assurance requirements.

Response:

Will clarify.

Comment No. 6.

The objectives of the soil sampling (Section 8.1) are unclear. For example, Attachment H notes that soil samples will be collected to establish baseline contamination; however, the objective of soil sampling in Section 8.1 is to "ensure defined soil contamination concentrations are identified during the removal". It should be noted that soil sample results might be used for any of the following: (1) identifying threshold levels for soil removal, (2) identifying other removal options, or (3) characterizing soils for proper waste disposal. The purpose of soil sampling, during both preconstruction and construction, must be clearly defined, particularly as it relates to the extent of the removal action.

Response:

See comment 11 (Ohio EPA)

Comment No. 7.

The sampling and analysis plan (SAP) (Section 8.0 and Appendix H) is unnecessarily complex, internally inconsistent, and incomplete.

The SAP is complex, redundant, and sometimes contradictory. Appendix H provides sequential sampling procedures for similar sampling events, with each step thoroughly detailed and repeated for each sampling event. Because of the level of detail, some steps are redundant or contradictory. It would be more appropriate to outline a general sampling approach for similar tasks, with modifications noted for unique sampling events. This outline could be accompanied by figures or photographs identifying targeted sampling locations. These changes are recommended but are not crucial.

Appendix H and Section 8.0 contradict each other. For example, Section 8.0, which seems to be a guide to Appendix H, indicates that samples will be screened in the field with a photoionization detector (PID) to determine if random samples will be analyzed for organic parameters; however, Appendix H implies that all samples will be analyzed for hazardous substance list (HSL) parameters. In addition, Section 8.0 includes a description of "Construction Related Sampling", which is never discussed in Appendix H. Finally, Appendix H is internally inconsistent; on page 36, the methods described for compositing samples do not match the composite sampling approach discussed for each sampling task (pages 20 through 35). Contradictory language within and between the section and appendix H must be corrected.

Appendix H is incomplete. First, it does not address sampling during construction. Second, sample numbers are not indicated; the underlined portions of the text where sample numbers have been left blank. Third, the rationale for sampling location or obtaining representative samples are not identified or discussed. Finally, figures do not indicate targeted sampling locations. In some cases, the omissions must be corrected. For instance, missing sample numbers must be provided. However, for other omissions, it may be appropriate to specifically indicate future deliverables that will address the omissions.

Response:

Section 8 and Appendix H will be combined for resubmission as section 8.

The new section will be divided as follows:

- 8.1 Sampling Objectives
- 8.2 Pre-Dismantling Sampling

- 8.3 Dismantling Related Sampling and Monitoring
 8.4 Post-Dismantling Sampling and Monitoring

SPECIFIC COMMENTS

Comment No. 8.

Section 6.4, Page 6-5 The section states that "Removal of uranyl nitrate hydrate from the storage tanks will be accomplished under a separate removal action. This removal may or may not be accomplished prior to the Plant 1 Ore Silo removal action". U.S. EPA recommends that this removal be accomplished prior to the Plant 1 Ore Silo removal action (see General Comment No. 3 above).

Response:

Based on current schedule UNH neutralization will precede the dismantling of silos. The RSE and Management Implementation Plan were developed based on limited data and analysis. Subsequent structural analysis and design engineering associated with the development of the work plan have shown that minimum risk exists to all surrounding structures. See comment 3, US EPA.

Comment No. 9.

Section 8.1, Page 8-1 U.S. EPA does not understand objective 4. If the objective is to identify baseline conditions for soil removal or capping, this should be clearly indicated.

Response:

Per the revised S & A Plan, soil and groundwater sampling are no longer included. These were removed since the RA does not require below grade activities, and the containment will prevent liquid movement to ground and air emissions monitoring will detect any fugitive emission. Therefore, only routine environmental monitoring samples will be collected for soils and groundwater as part of Site Environment Monitoring Program.

Comment No. 10.

Section 8.1, Page 8-1 Neither Section 8.0 nor Appendix H addresses the issue of long-term monitoring of the removal action. This objective should be clarified.

Response:

No project specific post-removal sampling plan is included, but a routine Environmental Monitoring Program exists and will be utilized to detect any long term effects.

Comment No. 11.

Section 8.2, Page 8-1 The first paragraph incorrectly references "Appendix I; the reference should be changed to "Appendix H".

Response:

S & A Plan will be revised to eliminate all inconsistencies.

Comment No. 12.

Section 8.2, Page 8-1 The use of a PID to screen samples for organic analysis is never discussed in Appendix H. Further, use of a PID without further analytical verification is inadequate to identify many potential organic contaminants, such as polychlorinated biphenyls (PCB) and semivolatile organic compounds (SVOC). Although random sampling is also proposed, no indication of the frequency or rationale appears here or in Appendix H. The sampling approach (screening) must be discussed in Appendix H. Also, the specifics of random sampling must be included.

Response:

Revised S & A Plan will clarify. Reference to PID instrument will be deleted. Frequency of sampling will be included in Section 8.

Comment No. 13.

Section 8.2, Page 8-2 The section states that "If the HSL analyte mean plus two standard deviations is below the regulatory limit, no further sampling will be done". The applicable regulatory limits should be provided.

Response:

See comment 11 (Ohio EPA)

Comment No. 14.

Section 8.4, Page 8.4 The report indicates that surface water samples will be collected; however, neither this section nor Appendix H discusses analytical methods, sampling procedures, sampling objectives, and sample handling and preservation for surface water sampling. This information should be provided.

Similarly, a groundwater sampling and analysis plan is introduced here, but specific sampling details are not provided here or in Appendix H. This information should be provided.

PRC agrees that results of preconstruction sampling will influence the choice of sampling parameters and locations for both surface water and groundwater sampling. However, the work plan does not discuss the objectives of these tasks, the rationale for sampling, or the relationship between these activities and those outlined in Appendix H. This information must be provided.

Response:

Per revised S & A Plan all sampling will be performed per RI/FS QAPP. See comment 11 (Ohio EPA). Only routine environmental monitoring samples will be collected for soils and groundwater as part of Site Environment Program. Procedures for surface water sampling will be added. These procedures will call for surface water sampling only during storm events.

Comment No. 15.

Appendix D, Page 6 Several release pathways to the environment are described; however, the discussion of site media sampling in Appendix H only mentions sampling around the Plant 1 Ore Silos.

Response:

The RSE and Management Implementation Plan were developed based on limited data and analysis. Per the revised S & A Plan, soil and groundwater sampling are no longer included. These were removed since the RA does not require below grade activities, and the containment will prevent liquid movement to ground and air emissions monitoring will detect any fugitive emission. Provisions will be made for routine collection of surface water and local air monitoring. Further clarification will be made in the revised S & A Plan.

Comment No. 16.

Appendix H, Page 5 Objectives for finalized data should include a determination of the environmental impact of the Plant 1 Ore Silos removal action; specifically, the environmental impact should be determined to support any additional remedial activities and long-term monitoring of affected media. These objectives should agree with those identified in Section 8.1.

Response:

See comment 11 (Ohio EPA).

Comment No. 17.

Appendix H, Page 12 Section 6.0 of Appendix H references two QAPjPs. Neither of these QAPjPs is the same as the QAPjP referenced in Section 8.0 of the main report. These two portions of the report should be consistent in their references.

Response:

Will clarify.

Comment No. 18.

Appendix H, Page 14 Sampling component parts and soil sampling appear to be considered different phases. However, this sampling is discussed as preliminary in nature. The discussion of sampling phases should be clarified. Appendix H suggests that another phase will be conducted but provides no details.

The rationale for baseline sampling for soils should be discussed.

Response:

See comment 11 (Ohio EPA)

Comment No. 19.

Appendix H, Page 14 Weekly soil sampling is discussed here, but it should be discussed in greater detail in Appendix H.

Response:

See comment 11 (Ohio EPA)

Comment No. 20.

Appendix H, Page 18 The figures presented here and on Page 19 should include a description of the system components that will be sampled. However, it might be more appropriate to use enlarged photographs similar to those in Section 3.0 of the main text to identify components targeted for sampling. Also, figures should be included showing proposed sampling locations for surface water sampling, groundwater sampling, and surface soil sampling.

Response:

See comment 11 (Ohio EPA). Photographs and a list of silo components detailing pre-construction sampling will be included.

Comment No. 21.

Appendix H, Page 19 The terminology, "Process Feed (and/or) Withdrawal Lines" should be modified because it implies that one area or the other may be sampled, which is inconsistent with subsequent discussion. The terminology should be changed to "Process Feed and Withdrawal Lines".

Response:

Will comply.

Comment No. 22.

Appendix H, Page 27 Samples extracted from inspection plates on top of the silos have the same identification as samples extracted from inspection plates in the mezzanine level (page 26). The following paragraph (1.2.54) indicates a different nomenclature for the same samples. These discrepancies should be clarified.

Response:

S & A Plan will be revised to eliminate all inconsistencies.

Comment No. 23.

Appendix H, Page 31 The rationale for sampling cores from these three silos should be provided.

Response:

Will comply. Three samples of the tile will be collected and analyzed to aid in a RCRA determination. Since the materials of construction are identical for all tile silos, only spot sample is required for analysis.

Comment No. 24.

Appendix H, Page 32 The rationale for sampling cores from these two silos should be provided.

Response:

Will comply. Three samples of the concrete will be collected and analyzed to aid in RCRA determination. Since the materials of construction were obtained from the same concrete source, only spot sample is required for analysis.

Comment No. 25.

Appendix H, Page 36 The discussion of composite sampling and its relevance to earlier sampling is unclear. If this method will be applied to all samples, it should be stated on page 20 in the beginning of the section. Compositing of samples is discussed earlier in other sections. A general compositing approach should be outlined along with any modifications (for example, for cares). Compositing methods should not be used for the volatile organic compound (VOC) fraction as indicated here and on page 36 in Section H. Use of compositing would allow VOCs to escape. This method should be corrected.

Response:

S & A Plan will be revised to eliminate all inconsistencies. Samples will need to be composited due to the limited amount of residues anticipated at each collection point.

The discussion of use of samples from locations 3, 4, 6, 8, and 10 to define background concentrations must contain a typographical error. These samples are waste characterization samples. This discussion must be clarified. Also, the sampling locations identified on this page do not match those identified on page 37.

Response:

See comment 11 (Ohio EPA).

Comment No. 26.

Appendix H, Page 37 The total number of anticipated soil samples must be indicated.

Response:

See comment 11 (Ohio EPA).

Comment No. 27.

Appendix H, Page 37 The required analytical parameters identified on page 37 and page 38 contradict the discussion of background sample locations on page 36 and the discussion of required sample volume, preservation, and holding times starting on page 39.

Response:

See comment 11 (Ohio EPA).

Comment No. 28.

Appendix H, Page 40 The statement at the bottom of the table should be deleted or modified. It refers to sample numbers 1 through 12, but the table discusses the requirements for samples 13 and 14.

In the last paragraph, the number of soil samples should be indicated.

Response:

Will clarify. See comment 11 (Ohio EPA).

Comment No. 29.

Appendix H, Page 41 The form contains blank spaces for the number of samples, screening samples, rinsate samples, and sampling frequency. The report should indicate the approximate number of samples.

Response:

Revised S & A Plan will be expanded to include one round of pre-construction sampling.

Comment No. 30.

Appendix H, Page 44 This appears to be the last page of text. All preceding pages should be modified as " __ of 44" accordingly.

Response:

S & A Plan will be revised to eliminate all inconsistencies.

U.S. EPA PART IIIGeneral Comments

1. Work Plan Structure: Background and justification for this document are sufficient. However, the actual work plan for the removal action is inadequate for making a determination about whether dust emissions or water contamination could occur and whether their occurrence has been anticipated adequately. The document in its present form is hard to follow. Although specific procedures may be contained in appendices to the work plan, it is essential to provide pertinent details of any such procedures or policies within the body of this work plan.

The work plan provides only a general outline of control measures, access restrictions, and sequence of removal in the removal action. More details concerning all of these areas must be provided before an assessment of the plan's effectiveness in terms of contamination control can reasonably be made. The goal of conciseness should not preclude providing complete information. It is unacceptable to leave the determination of all design details until the design phase; it is appropriate in the work plan phase of the removal action to identify criteria relevant to the performance goals of equipment and containment systems. Such criteria if cited in the work plan would allow a more accurate assessment of control which will be exerted at the plant 1 silos during dismantling.

Response:

The work plan as presented was developed at a point in the project where many design details had not been finalized and thus could not be included in the work plan. In response to the comment, additional details now available, will be incorporated in the document Section 6 and Appendices as required to comply with the comment. Specific details are included in the design drawings and specifications to be provided for information upon certification for construction.

2. Contaminants of Concern: The criteria used in various cases to determine contaminants of concern need to be articulated. When contaminants of concern are indicated, and where choices have been made about what parameters will be used for analysis, the basis for decision-making should be clarified. In addition, the sources of information used or to be used for choosing contaminants must be cited.

Response:

Will comply. Criteria for contaminants of concern will be included in revised Section 8.

Specific Comments

1. Section 6.1, p. 6-1, paragraph 2 - In Section 3.2 (p. 3-2, paragraph 4), two possible options from the structural evaluation are presented for the removal action. However, only one of these recommendations has been carried through to Section 6.0 - namely, the removal of all silos and

structural elements. Some justification should be provided for eliminating the second option from consideration.

Response:

Will comply. Statement will be inserted to describe selection process and conclusion. Two options are presented; (1) to repair the silos and (2) to remove the silos. Repair of the silos would require extensive structural replacement and tile/concrete repair. To accomplish this would result in waste being generated during repair. The new material would also be treated as waste when the final solution (removal was implemented). In order to be in-line with waste minimization and work toward the final solution, it was determined that removal of the silos is the option of choice.

2. Section 6.2, p. 6-3, paragraph 1 - The information given provides only a brief outline of control measures which will be taken. In order for an accurate determination to be made of how well contamination will be controlled, more details must be provided. The work plan should include details such as time intervals between radiation surveys, and the monitoring instrumentation and methods which will be used. The containment to be used must also be described more fully; even if design parameters cannot be specified at this stage, minimum criteria to be fulfilled should be articulated. This includes characteristics such as minimum air flow requirements or pressure differential.

Response:

Will comply. A descriptive paragraph with sketches will be provided, to detail the containment, typical monitoring equipment, and expected schedule for sampling.

3. Section 6.4, p. 6-5, paragraph 2 - More detail needs to be given on what protection will be provided to prevent damage to the uranyl nitrate hydrate (UNH) tanks and piping. While the information given is acceptable as a general plan, there is insufficient information given to confirm that the tanks will be adequately protected.

Response:

Will comply. A descriptive paragraph with sketches will be provided, to detail the containment, typical monitoring equipment, and schedule expected schedule for sampling.

4. Section 6.5, p. 6-5, paragraph 7 - The short time frame of the removal action is not alone adequate justification for dismantling concrete silos first. In fact, there are a number of factors which seem to justify removing the tile silos before the removal of concrete silos is undertaken. These are (1) the tile silos exhibit greater deterioration than the concrete silos and are "considered to be in worse structural condition" (see paragraph 6, p. 6-5), (2) the tallest of the silos (approx. 44 ft.) are tile silos, and these same structures are very near the UNH tanks, and finally (3) the supporting structure for the tile silos partially blocks access to the concrete silos. On the other hand, if dismantling is to take place to the north and west of the silos, there is immediate free

access to the tile silos. Once the tile silos and supporting steel have been removed, the concrete silos will also be more accessible.

Response:

The sequence of dismantlement of the silos was selected after evaluation of the structures and sequences with regard to risk to the environment and personnel. Even though the tile silos are in a more deteriorated state than the concrete silos the risk of one set failing before the other is considered low. The 44 foot tile silos are close to the UNH take, however since they do not contain vertical reinforcement the failure mode is, if they were to collapse, it would more likely be a downward motion rather than a toppling in an arc (ie. falling a tree). The protective structure was designed for the worst case toppling. The clearance issue was evaluated also and found that even if the tile silos were removed first, access to the concrete silos would not be improved since above slab conveyor structures (concrete trenches not to be removed under this action) prohibit a change in crane location. Since the sequence is consistent with NCP criteria, risks being in essence equal, cost becomes the criteria. By following the proposed sequence the idle for the crane time is significantly reduced and thus the contractor cost.

5. Section 6.5, p. 6-5, paragraph 9 (removal step 1) - It is unclear from Figure 6-1 whether the entire south face of Building 1-A is to be marked as part of the control zone. In order to minimize contamination, access from all points of entry, including from within Building 1-A, must be controlled through the use of signs and barriers.

Response:

The south face of Building 1A is a part of the control zone. It will be marked with signs and tape barriers. Entrances to the building will be closed and labeled to limit access to the control zone. However, due to egress requirements under OSHA for the building, the doors will not be locked or barricaded. A concrete barrier will be installed along a portion of the south face to protect the building from ground level construction activities damaging the siding of the building.

6. Section 6.5, p. 6-6, paragraph 2 (removal step 3) - More detail needs to be provided on the nature of the barriers to be used to protect buildings adjacent to the dismantling area. For example, will these barriers span the entire southern face of Building 1-A? (The features in Figure 6-1 suggest that barriers will be located along only part of the south face of Building 1-A.) What are the dimensions of the concrete barriers? What type of protective barrier will be installed on the north end of the UNH tanks?

Response:

Will comply. The barrier on the south face of Building 1A will consist of 2 foot x 2 foot x 6 foot long concrete interlocking blocks stacked 8 feet high. These barriers will be placed on a portion of the south wall from the Size Reduction Building to the Control Zone Access Area. The UNH tanks will have a steel framed roof structure erected on the north end of the tanks to protect them from potential falling debris. This roof will cover an area 21 feet x 56 feet and be of 1/4 inch plate. The roof support will be an "I" beam frame.

7. Section 6.5, p. 6-6, paragraph 4 (removal step 5) - The location and type of containment for size reduction and packaging must be specified in order to determine whether sufficient contamination control will be achieved. It may be useful at this point to specify minimum performance criteria for the containment in terms of air movement or positive pressure if it is not feasible to provide specifications directly derived from the design of the containment system. The need to elaborate on details of containment applies also to removal steps 5 and 10, and wherever it is stated that containment will be provided "as necessary."

Response:

Will comply. The size reduction building is a 25 x 50 x 25 foot steel frame suspended material structure with three doors. It will be ventilated with five each, 1000 CFM HEPA systems (to maintain a negative pressure). Doors to the building will be closed during reduction operations and only opened to move materials in or out.

8. Section 6.5, p. 6-6, paragraph 8 (removal step 9) - All silos should be removed before any supporting steel is dismantled to guard against the possibility of accidentally removing a load-bearing element and causing collapse. The sequence of removing structures needs to be clarified.

Response:

Will comply. Design called for some bracing to be relocated and decking to be removed so that the bottom cones can be removed prior to silo dismantling. Load bearing steel disassembly sequence will be provided by the contractor for engineering review and approval prior to dismantling the steel. Non-load bearing steel needs to be removed to gain access to the silos prior to the dismantling.

9. Section 6.5, p. 6-6, paragraph 10 (removal step 10) - The last sentence in this paragraph states that, "Containment will be provided as necessary." The criteria for determining whether containment is needed must be articulated.

Response:

Will comply. Criteria will be stated in text.

10. Section 6.5, p. 6-7, removal step 14 - The question of how residue in the silos is to be handled must be addressed here. Is it to be left on tiles and decontaminated at a later time, or is residue in the form of removable contamination to be collected at the time of dismantling the silos?

Response:

Will comply. All residue on the tiles will be left on the tile as it is dismantled. The tiles and residues will be containerized for storage and eventual disposal at NTS. The tiles will not be decontaminated. This decision was made due to the fact that contaminants have leached into the tile and grout and could have migrate into cavities and the tile cores. Decontamination would thus be impossible. Once the silo cones are removed to grade level any residues found in them will be removed, containerized, and stored per the FEMP Waste Management Plan.

11. Section 6.5, p. 6-7, paragraph 9 (removal step 17) - The levels to which the dismantling area will be decontaminated should be specified here. Alternatively, a reference could be provided indicating where such information can be found elsewhere in this document. In addition, the scope of decontamination activities must be made clear. "The entire area" includes equipment, protective barriers, and surfaces as well as soils.

Response:

Will comply. Only the concrete pads and roadway surfaces may be cleaned to remove loose contaminants not fixed. The containment enclosure will prevent further soils contamination above current levels in the vicinity of the silos. Historical contamination of soils in the vicinity of the silos will be addressed under OU-5 RI/FS.

12. Section 6.6, p. 6-8, paragraph 5 - The procedures for segregation of contaminated and non-contaminated wastes, and for decontamination, must be specified. Without details of the procedures to be used, it is impossible to determine whether cross-contamination of wastes will be avoided.

Response:

Will comply. Section 6 will be revised to include a Disposition Plan. The plan lists out all materials expected to be generated by this removal action, groups them by type, and addresses whether it will be segregated by level of contamination and/or directly ear marked for containerization and storage. As an example, steel will be removed, monitored, and smear sampled. Based on levels of contamination defined by existing site standard operating procedures and Waste Management Plan, the steel will either be size reduced and containerized for eventual shipment to NTS, or it will be cleaned to remove loose surface contamination and placed in interim storage pending final disposition under future project orders.

13. Section 6.6, p. 6-9, paragraph 2 - The procedures to be used for characterizing and segregating wastes must be outlined in order for an accurate assessment to be made about whether contamination will be adequately controlled.

Response:

Will comply.

14. Table 6-2, p. 6-11, (29 CFR 1910.120) - Once the design phase of this work plan has been completed, the task-specific health and safety plan should be reviewed to ensure that it is consistent with the activities and equipment which will actually be used during this removal action. It should be amended for consistency and to include concerns which may arise if unexpected equipment of non-standard procedures are to be used.

Response:

Standard procedures under 24 CFR 1910.120 requirements will be adhered to.

15. Table 6-2, p. 6-16 (DOE Order 5400.5, Chapter IV) - In addition to the surface contamination limits specified in DOE Order 5400.5, those given in Nuclear Regulatory Commission (NRC) Regulatory Guide 1.86 should be adhered to for radium isotopes found at the site, including Ra-226 and Ra-228. The DOE order does not specifically list limits for the radiums, whereas Reg. Guide 1.86 does. NRC Reg. Guide 1.86 should be added as a To Be Considered (TBC) to the list of ARARs/TBCs for Operable Unit 3.

Response:

Will comply. NRC Guide 1.86 radium surface contamination limits will be followed for any potentially contaminated material which is subject to free release.

16. Section 7.1, p. 7-1, paragraph 5 - Specific details need to be provided on the type of monitoring which will be performed to evaluate the installation. The nature of tests which will be performed (for instance, will only radiation monitoring be done, or will tests include inspections of the containment system for uncontrolled points of air outlet?) and the duration and frequency of tests must be presented.

Response:

Will comply. This will be detailed in the revised Section 6 and the Revised Sampling and Analysis Plan. Radiation monitoring, smear samples, and air sampling (both local and area) will be used to evaluate the installation during the removal action, using existing site instrumentation and procedures.

17. Section 8.1, p. 8-1, paragraph 2 (Objective 1) - Characterization of materials to be disposed of in this removal action should include full radiological analysis as well as Hazardous Substance List (HSL) constituents.

Response:

All pre-construction samples will be analyzed for full radiological parameters as well as full HSL constituents, and TCLP.

18. Section 8.2, p. 8-1, paragraph 8 - The work plan for the Site Media Sampling is located in Appendix H (not Appendix I as stated).

Response:

Appendix H will be eliminated with the revision of Section 8. Section 8 will combine the two Sections (8 and Appendix H).

19. Section 8.2, p. 8-1, paragraph 9 - Justification should be provided for the choice of contaminants of concern. There is no explanation in this document as to the criteria used to identify constituents of concern included in analysis of samples.

Response:

Section 8 will provide criteria utilized to determined contaminants of concern based on historical data and process knowledge. Consistent with site protocol and procedures MEF will be completed as data is derived.

20. Section 8.2, p. 8-2, paragraph 2 - It should be clarified how radionuclides are to be assessed using the pre-construction sampling and analytical results. Are background levels of all radiological contaminants assumed to be zero?

Response:

Final disposition will be based on actual analysis results and process knowledge at the time of removal. Background comparisons are not applicable to this removal action.

21. Section 8.3, p. 8-2, paragraph 4 - It is encouraging to see that the contamination limits cited here for alpha contamination conform to maximum surface limits contained in NRC Reg. Guide 1.86. It should be noted, however, that the guidance also specifies that the average surface contamination shall not exceed 100 dpm/cm². In addition, because the limits identified here are so low, it is crucial that the monitoring method to detect such contamination is specified. A standard frisking distance and rate (one-half inch away from surface at one to two inches per second, for example) will have a lower limit of detection which is far above 300 dpm/cm². A monitoring method more appropriate to attainment of the required sensitivity should be used.

Response:

NRC Reg. Guide states that the average surface contamination should not exceed 100 dpm/100 cm² not 100 dpm/cm², we assume that this was a typographical mistake.

We agree that a standard frisking technique is not appropriate, however, present technology is not available to detect 100 dpm/100 cm² with field measuring devices. Therefore, Section 8.3 paragraph 2 will be rewritten as follows:

Materials that have the potential to be decontaminated i.e. structural steel, will be segregated and stored on-site for future evaluation for decontamination. These materials will not be released off-site as part of this project.

Bulk materials, such as tiles and rubble, will be containerized and disposed of as LSA waste.

22. Section 8.2, p. 8-2, paragraph 5 - The first sentence here refers to field survey methods used to determine if materials are to be containerized. However, it is unclear from the paragraph above what exactly the criteria are that determine whether material is containerized. The text implies that materials with less than 300 DPM/cm² beta-gamma are not required to be containerized and can be surveyed in order to be released for unrestricted use. The limits on contamination for release for unrestricted use specified in DOE Order 5400.5 and NRC Reg. Guide 1.86 are below

those given above. Procedures must be in place to deal with material that exhibits contamination in the range between containerization and unrestricted use.

Response:

see above.

23. Section 8.3, p. 8-3, paragraph 1 - A copy of PS-P-35-010 should be appended to this document and its provisions summarized here for clarity.

Response:

Will comply. The attached copy of PS-P-35-010 is submitted for information.

24. Section 8.4, p. 8-4, paragraph 4 - It is unclear how uranium and thorium were established as the only contaminants of concern in stormwater runoff although a number of other nuclides, including radium, have been identified in the silos. Justification must be provided for the choice of the contaminants of concern.

Response:

Section 8 will clarify with revision. Based on process knowledge and historical data, uranium and thorium are the only two constituents detectable due to dilution from rain. Samples will be taken to insure that the removal action does not significantly elevate contamination of storm water runoff.

25. Section 8.4, p. 8-4, paragraph 6 - The "contamination indicators and parameters specific to the Plant 1 Silo waste" for piezometer screening need to be identified here, and justification provided for the contaminants chosen. If the choice depends on the results of sampling not yet complete, this should be specified and the criteria to be used to identify contaminants of concern should be stated.

Response:

Sampling and Analysis Plan will no longer include soil or groundwater sampling, since there will be no below grade disturbance and containment will insure no migration to soils and groundwaters.

26. Section 8.4, p. 8-5, paragraph 5 - The criteria used to determine the analytical parameters need to be articulated. These parameters are inconsistent with those used for analyzing stormwater runoff, although it seems likely that the same contaminants would appear in both if originating from the removal action site. In addition, the data used to determine representative constituents should be identified.

Response:

Section 8 will clarify with revision. Process knowledge and historical data will be used in the development of the criteria.

27. Appendix A, Table 2, p. 2-2 - The minimum estimated radionuclide total identified for Radium-228 is greater than the maximum estimate shown in the table. This anomaly must be corrected or explained.

Response:

Following review of base data it has been found that an error in the table does exist. The minimum value for Radium-228 should read 0.125. This will be corrected.

28. Appendix H, Section II-1.0, p. 7, paragraph 1 - The criteria which were used to determine the target contaminants for analysis should be identified.

Response:

Section 8 will clarify with revision. Process knowledge and historical data will be used to determine target contaminants.

29. Appendix H, Section V, p. 13, paragraph 1 - It must be stated what contamination limits apply to personnel, equipment, and samples being examined for possible release from a controlled area. In addition, a "real time" survey must be defined. If such a survey implies frisking procedures, such monitoring methods may not be adequate to detect levels of contamination as low as 300 DPM/cm² (a limit identified earlier in this work plan).

Response:

Personnel and equipment will be released from the controlled area when the survey technique described above in Item 21 shows less than 300 dpm/100 cm², not 300 dpm/cm² as stated in the comment.

30. Appendix H, P. 20, paragraph 2 - Section 1.2 is Equipment Sampling. Section 1.4 of this attachment identifies required analytical parameters.

Response:

Section 8 will clarify with revision.

31. Appendix H, p. 24, paragraph 7 - No such steps 1.1.8 through 1.1.24 exist in this document. Are steps 1.2.8 through 1.2.24 the appropriate procedures to be referenced here?

Response:

Section 8 will be revised to include and clarify the details of appendix H. Appendix H will be removed from document.

32. Appendix H, p. 31, paragraph 1 - More information should be provided on why silos #9 and #12 were chosen as targets for sampling.

Response:

Section 8 will be revised to include and clarify the details of appendix H. Appendix H will be removed from document. Since the materials of construction are identical for all tile silos only spot sample is required for analysis.

33. Appendix H, p. 32, paragraph 10 - More information should be provided on why silos #3 and #4 were chosen as targets for sampling.

Response:

Section 8 will be revised to include and clarify the details of appendix H. Appendix H will be removed from document. Since the materials of construction were obtained from the same concrete source only spot sample is required for analysis.

34. Appendix H, p. 35, paragraph 4 - It is appropriate to include a radiological survey at this point before sampling of soils begins.

Response:

Section 8 will be revised to include and clarify the details of appendix H. Appendix H will be removed from document. No disturbance of soils or groundwater is expected in this removal action.

35. Appendix H, p. IV-11, paragraph 4 - The definition of a real time test needs to be presented. In addition, because contamination limits are specified in terms of alpha as well as beta-gamma contamination, alpha monitoring needs to be performed as well on residual materials.

Response:

Will be clarified and corrected as indicated by items 21, 22, and 29.