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DISAPPROVAL OF THE PLANT 1 ORE SILOS REMOVAL ACTION NUMBER 13 WORKPLAN

02-19-92

USEPA/DOE-FO
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LETTER

[redacted]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

2901

FEB 19 1992

REPLY TO THE ATTENTION OF:

HRE-8J

Mr. Jack R. Craig
United States Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

RE: Disapproval of the Plant 1 Ore Silos Removal Action Number 13 Workplan

Dear Mr. Craig:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the Plant 1 Ore Silos Removal Action Number 13 Workplan.

U.S. EPA hereby disapproves the workplan pending incorporation of the attached comments.

Please contact me at (312/FTS) 886-0992 if you have any questions.

Sincerely,

James A. Saric
Remedial Project Manager

Enclosure

cc: Graham Mitchell, OEPA-SWDO
Pat Whitfield, U.S. DOE-HDQ

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(3810)

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TECHNICAL REVIEW COMMENTS
PLANT 1 ORE SILOS REMOVAL ACTION NUMBER 13
WORK PLAN

The U.S. Department of Energy (DOE) submitted a draft work plan, dated January 9, 1992, to the U.S. Environmental Protection Agency (U.S. EPA) describing a removal action (RA) for the Plant 1 Ore Silos. DOE's objective in the work plan is "to remove the source and any potential hazards (radiological and safety) presented by the Plant 1 Ore Silos until final remediation is performed under Operable Unit 3." DOE's work plan outlines its approach to removing eight tile silos, six concrete silos, and their associated structural supports down to the concrete base.

GENERAL COMMENTS

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).

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.

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.

[redacted]

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.

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.

Comment No. 5 The work plan inconsistently refers to various Quality Assurance Project Plans (QAPjP). The sampling and analysis plan described in Sections 8 refers to the RI/FS QAPjP, whereas Appendix H refers to the QAPjP for "SMS Specific Project Protocol." Appendix G describes the Westinghouse Environmental Management Company (WEMCO) QAPjP. The document must be internally consistent with respect to quality assurance requirements.

[redacted]

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.

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;

[redacted]

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.

SPECIFIC COMMENTS

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).

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.

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.

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

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.

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.

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 ground-water 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 ground-water 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.

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.

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.

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.

Appendix H, Page 14 Sampling component parts and soil sampling appear to be considered different phases. However, this

[redacted]

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.

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

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, ground-water sampling, and surface soil sampling.

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."

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.

[redacted]

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

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

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 cores). 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.

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.

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

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.

[redacted]

[redacted]

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.

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.

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

[redacted]