



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8960

February 26, 2014

4WD-FFB

Rachel Blumenfeld, Acting Site Lead
United States Department of Energy
P.O. Box 1410
Paducah, Kentucky 42001

EPA Comments on the Removal Action Report for the C-340 Metals Reduction Plant at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky (DOE/LX/07-1286&D1)

Dear Ms. Blumenfeld:

EPA has reviewed the D1 RAR for the C-340 Plant, and have the following comments enclosed below:

If you have any questions or require additional information, please contact me at (404) 562-8648.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jon Richards".

Jon Richards
Remedial Project Manager
Federal Facilities Branch

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I. GENERAL COMMENTS

1. This RAR, dated December 2013 (RAR), Description of the Removal Action Implemented on Page 1 lists the general removal action objectives (RAOs) (e.g., reduce potential human health exposures and risks of releases to the environment). However, the RAR does not list the identified contaminants of concern (COCs) at the C-340 prior to demolition, or the Applicable or Relevant and Appropriate Requirements (ARARs) and cleanup goals for the remedial action, or any identified performance standards (e.g., radiological contamination limits and postings/control requirements) for the C-340 area. Although the text states that this information is provided in the *Removal Action Work Plan for the C-340 Complex Decommissioning at the Paducah Gaseous Diffusion Plant* (DOE/LX/07-0344&D2), according to the EPA guidance document *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059, June 1995 [EPA RD/RA guidance], the RA report should contain a complete listing of the COCs, as well as information documenting the achievement of the cleanup goals and performance standards in accordance with Section 121(d) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Without providing specific information about the COCs and the cleanup goals and performance standards, the RAR does not demonstrate regulatory compliance. Therefore, please *revise the RAR description on Page 1 to list all of the identified COCs, and all ARARs/cleanup goals, and performance standards so that the information in the RAR adequately demonstrates that the RAOs identified for the C-340 removal action have been met.*
2. The Description of the Removal Action Implemented on Page 1 does not describe what processes occurred at the C-340 facility. Given the lack of information about the COCs, the information presented throughout the RAR which describes sampling and radiological verification surveys is incomplete because there is no basis for demonstrating the surveys were appropriate for the identified processes and COCs at this facility. Please *revise the RAR to generally describe what type of operations and processes occurred at the C-340 facility so that historical information about what types of contaminants may be expected to be present at the facility are adequately documented and the adequacy of the removal action is appropriately documented.*
3. The Slab Verification Survey and Surface Preparation discussion on Page 5 provides a summary of identified levels of fixed radiological contamination at the C-340 slab but does not state whether the survey results listed were obtained prior to application of the fixative, or after application of the fixative. Additionally, the text states '[V]ery few of the survey data points indicated transferrable contamination above levels for posting as a Contamination area', but does not state what level of removable contamination this 'Contamination area' posting would correspond to. Further, the text does not identify how final radiological contamination levels met the identified cleanup goals for the C-340 area. Please *revise the RAR to include this information.*
4. The fourth paragraph in the section entitled Contamination Control on Page 8 relates the discovery of removable contamination above the 10 CFR 835 limits on the roadway north of the C-340 facility outside of the Contamination Area, on Oklahoma Avenue, and on vehicles parked at the C-340 facility entrance and roadway. However, the RAR does not document how this removable contamination was addressed or what surveys were conducted to verify contamination was cleaned up to levels less than the allowable 10 CFR 835 limits. Please *revise the RAR to provide this information.*

5. The discussion provided in the section entitled Summary of Any Operation and Maintenance Required on Page 11 states that routine inspection of fixative on slabs and repair, as necessary, are the only operation and maintenance actions required. However, it is unclear if the routine inspections will include visual inspections only, or will also include routine radiological surveys as well. Additionally, the text has not stated if future radiological surveys will be conducted in the event maintenance is needed to ensure the future cracks or degradation are adequately repaired and removable contamination is contained. According to the EPA RD/RA guidance, the RAR should include a discussion of the operation and maintenance requirements. Therefore, the text in this section on Page 11 should include additional information and/or should reference a standard operating procedure which describes the inspection requirements and maintenance activities. *Please revise the RAR to include this information.*
6. The text in the section titled Summary of Any Operation and Maintenance Required on Page 11 states that routine inspection of fixative on slabs and repair, as necessary, are the only operation and maintenance actions required. The post RA operation and maintenance requirements suggest that contamination remains on-site above levels that allow for unlimited use and unrestricted exposure. However, the RAR does not state whether a 5 Year review will be required to be performed for the C-340 facility. *Revise the RAR to address this issue.*
7. The Summary of the Project Cost on Page 12 does not include any text or an estimation of costs in Table 4 (Summary of Cost Elements) for expenses related to routine inspections and maintenance at the C-340 slab. Since EPA RD/RA guidance requires that the RAR include a summary of all project costs including routine maintenance, the text on Page 12 and Table 4 (Summary of Cost Elements) should be revised to include the estimated expenses associated with annual inspections and maintenance. *Please revise the RAR accordingly.*
8. The RAR does not adequately describe the quality assurance/quality control (QA/QC) procedures followed for data collection and review for the sump water sample collection, radiological surveys, or air monitoring. The RAR also does not describe which QA/QC documents governed the sampling and analysis, such as a site-wide or project-specific sampling and analysis plan/quality assurance project plan (QAPP). Additionally, the polychlorinated biphenyls (PCB) data in Appendix C contains results qualifiers but it is unclear what level of data review the PCB data received, if it was verified or validated and what organization completed the data review. It is also unclear what level of QA review the radiological survey data and the air monitoring data underwent. Since the EPA RD/RA guidance states that a description of QA/QC procedures followed for the remedial action is a required element of the RAR, *please revise the RAR to include this information.*
9. The RAR does not describe what QA/QC procedures were implemented for the demolition activities. In accordance with EPA RD/RA guidance, *please revise the RAR to include information pertaining to QA/QC procedures that were implemented for the decommissioning/demolition activities at the C-340 area.*
10. Appendix B, Radiation Survey Results, only contains radiological surveys conducted prior to application of paint/fixative. However, the Slab Verification Survey and Surface Preparation section on Page 5 of the main document states surveys were performed after application of the fixative to determine appropriate postings and control of the slab. In order to fully document the final condition of the C-340 area and demonstrate compliance with radiological posting

requirements, *please revise the RAR to include copies of the post-fixative radiological surveys in the appendices to the RAR, and to provide a summary of these results in the main sections/text discussions of the RAR.*

II. SPECIFIC COMMENTS

1. Appendix B, Radiation Survey Results, Pages B-5, B-6

The diagram on Page B-6 does not depict the location of Item #31 listed on Page B-5. *Please revise the diagram on Page B-6 to show where item #31 is located.*

2. Appendix B, Radiation Survey Results, Pages B-3 - B-6

The diagram on Page B-6 does not show where the slab is located relative to the entire C-340 slab identified on Figure 3, C-340 Concrete Slab after Demolition on Page 7 of the RAR. Although the Radiological Survey Cover Form on Page B-3 states that the figure is a depiction of the characterization of a section of pad on the south side of C-340, the surface area relative to the entire C-340 concrete slab cannot be discerned from the figure on Page B-6. *Please revise Appendix B to include a depiction of where the diagram on Page B-6 resides relative to the entire C-340 slab.*

3. Appendix B, Radiation Survey Results, Pages B-7 - B-10

The diagram on Page B-10 does not depict the location of Item #31 as listed on Page B-9. *Please revise the diagram on Page B-10 to show where item #31 is located.*

4. Appendix B, Radiation Survey Results, Pages B-11 - B-14

The diagram on Page B-14 does not depict the location of Item #41 as listed on Page B-13. *Please revise the diagram on Page B-14 to show where item #41 is located.*

5. Appendix B, Radiation Survey Results, Pages B-15 - B-18

The diagram on Page B-18 does not depict the location of Item #30 as listed on Page B-17. *Please revise the diagram on Page B-18 to show where item #30 is located.*

6. Appendix C, Sump Water and Pit Sampling Analytical Results, Pages C-3 – C-5

The tables in Appendix C contain numerous results qualifier symbols which are not defined in the RAR. For example, sample 340CONPIT-5 lists a result for PCB-1248, with a result qualifier of 'X'. However, the 'X' is not described or included in a footnote to the table. Additionally, the results for PCB-1016 for this same sample, as well as for PCB-1016 in sample 340 CONPIT-2 are listed with a result qualifier of 'UY', but this qualifier is not defined or included as a footnote. *Please revise the RAR to include footnotes or explanations of the result qualifiers for the PCB results in Appendix C.*

