



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
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March 7, 2016

Ms. Tracey Duncan
Federal Facility Agreement Manager
United States Department of Energy
Portsmouth/Paducah Project Site Office
5501 Hobbs Road
Kevil, KY 42053

**RE: Site Management Plan, Paducah Gaseous Diffusion Plant (DOE/LX/07-2400&D1),
Annual Revision – FY 2016
EPA ID KY8890008982, McCracken County, KY**

Dear Ms. Duncan,

The U. S. Environmental Protection Agency (EPA) Region 4 has reviewed the draft annual revision to the Paducah Gaseous Diffusion Plant (PGDP) Site Management Plan (SMP) and is providing comments to the Department of Energy (DOE) as an enclosure to this letter in support of discussion and document revision. EPA has not reiterated in this letter the SMP comments submitted by the Commonwealth of Kentucky (KY); rather, the EPA comments are intended to supplement those submitted by KY in support of tri-party discussions and a final SMP.

EPA seeks in the SMP a transparent presentation of the regulatory framework for Deactivation and Decommissioning (D&D) and the tri-party vetting process under the Federal Facility Agreement for binning Facilities and SWMUs for decisions on whether the removal, remedial, and maintenance actions process is appropriate. In particular, the SMP should outline the factors that the FFA parties will use to decide whether the D&D will be conducted as a CERCLA response (non-time critical removal or remedial action). Now that the GDP plant has shut down, and the United States Enrichment Corporation has returned the leased plant facilities to DOE, the most significant hurdle to planning the integration and timing of environmental media cleanup and D&D activities has been eliminated. Revisions to the SMP are appropriate to describe the remaining scope of D&D and environmental media cleanup at the facility, and to forecast integrated schedules of work that achieve a balance each year between investigation and cleanup of soils, surface water, groundwater and air contamination and D&D of the contaminated Facilities across the PGDP.

If you have any questions about this correspondence, please do not hesitate to contact me at (404) 562-8547 or via electronic mail at corkran.julie@epa.gov.

Sincerely,



Julie L. Corkran, Ph.D.
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Enclosure

Electronic copy with Enclosure:

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**United States Environmental Protection Agency (EPA) Region 4
Comments on:**

**Site Management Plan, Paducah Gaseous Diffusion Plant
Annual Revision – FY 2016
(DOE/LX/07-2400&D1), Date Issued November 16, 2015
Fluor Federal Services, Inc.**

**Paducah Gaseous Diffusion Plant, McCracken County, KY
EPA ID KY88900008982**

General Comments

1. Operable Unit Designations. For the purpose of required tracking in EPA databases, reporting to Congress, and communication among interested parties, it is necessary that the Operable Units (OUs) at Superfund Sites, including the PGDP Superfund Site, be assigned unique numbers. At this time, the SMP Appendix 4 appears to establish six (6: Groundwater, Surface Water, Burial Grounds, Soils, D&D, and Comprehensive Site), seven (7: to include Permitted) or possibly twelve (12) OUs (to include Remaining Remediation Groundwater Sources, Remaining Remediation Lagoons and Ditches, Remaining Remediation Burial Grounds Sources, Remaining Remediation Soils and Slabs, Remaining Remediation D&D).

- After discussion among the FFA Parties, revise the SMP to assign unique numbers to each of the PGDP OUs and utilize those numbers in the SMP itself and in SMP deliverables under the PGDP FFA.
- EPA's tracking database assigns OU 00 to all facility-wide activities under CERCLA. For example, the Community Relations Plan updates, Five Year Reviews (FYR) and FYR Addenda, the Comprehensive Site Operable Unit and the CERCLA Waste Disposal Alternatives Evaluation are appropriate for inclusion under OU 00.

2. Completion dates for pre-GDP shut-down scope. DOE has added text to page 2 describing pre-GDP completion date changes made to the FY2013 SMP. Briefly expand the scope of this text to explain the reader the basis for the decision to push these dates out from 2019 to 2032.

3. D&D Regulatory Framework – D&D outside the FFA Scope. The text on page 2 states that *“DOE is currently implementing deactivation and utility optimization activities outside of the FFA scope to prepare the site for effective implementation of all future mission activities and “When decommissioning work is identified for inclusion under the FFA, it will be integrated into the SMP and prioritized by the FFA Parties”.* DOE's simplified paradigm regarding the regulatory framework for D&D activities under the PGPD FFA, and the text revisions to the SMP to reflect that DOE paradigm, are not acceptable to EPA. EPA provided to DOE our perspective regarding the conduct of D&D activities under the PGPD FFA in May of 2014 (D. Buxbaum and J. Tufts, EPA Region 4, May 2014 power-point presentation). The EPA

presentation is attached to these comments in support of tri-party discussion and revisions by DOE to the FY2016 SMP to address each of the bullets listed below.

Revise the SMP text to include a table of the SWMUs on which DOE/FLUOR conducted deactivation activities and/or decommissioning activities in calendar year 2015. The table entries should include (minimally) SWMU number; SWMU name; whether the action was a deactivation only, a decommissioning (through demolition/disposal), or both; date completed; Administrative Record document ID number documenting the DOE's administrative determination for the SWMU disposition. Revise the SMP text to include a table of the SWMUs on which DOE/FLUOR intend to conduct deactivation and/or decommissioning and/or maintenance actions in calendar year 2016. Include the AR Document ID number documenting the DOE's administrative determination for the proposed disposition of each SWMU. Those Facilities that will be addressed by a D&D process under the FFA, presumably as a CERCLA non-time critical removal action, should be identified.

Revise the SMP text to state that EPA does not concur with DOE's current implementation of deactivation and decommissioning activities outside of the terms of the FFA. The FFA (Sections III *Purposes of Agreement* and Section XI *Removal Actions*) and the 1995 EPA-DOE D&D Policy describe a consultation process to determine the appropriate path forward (removal, remedial, maintenance) for a particular facility at this Superfund Site.

Revise the SMP text to describe:

- the regulatory framework for deactivation and decommissioning at the PGDP;
- specific deactivation activities and decommissioning activities currently anticipated by DOE in three-year enforceable window (FY16 through FY18);
- the currently anticipated deactivation activities and decommissioning activities projected for 2016 through 2025

Revise Appendix 5 to include:

- the timetables and deadlines for Primary Document milestones associated with implementing and completing the scope of deactivation and decommissioning activities described in the above-listed bullets.

4. Soils and Slabs OU. Revise the SMP to forecast a scope of work and a completion date for the Soils and Slabs OU.

5. Remaining Remediation Groundwater OU – Scope. DOE's revised text on page 3-8 states that "*This OU consists of potential sources (e.g., DNAPL) that are contributing to groundwater contamination and the dissolved-phase groundwater plumes that cannot be accessed due to being under a building structure or newly identified sources not addressed under the pre-GDP shutdown GWOU projects.*" EPA does not accept DOE's general assertion that DNAPL and dissolved phase plumes under buildings at the PGDP "cannot be accessed": this is an evaluation that must be made on a case by case basis (as is currently being done for the C-400 Building). Revise the text as follows: "*This OU consists of potential sources (e.g., DNAPL) that are contributing to groundwater contamination and the dissolved-phase groundwater plumes that*

~~cannot be accessed due to being~~ under a building structure or newly identified sources not addressed under the pre-GDP shutdown GWOU projects.”

6. Surface Water Remedial Action – Key DOE Planning Assumptions from Life Cycle Baseline – Footnote 4. On page 3-14 of the SMP, revise Footnote 4 to state: “... characterization; however, ~~EPA has raised~~ and KY have raised concerns...”. The concern addressed in Footnote 4 was identified in EPA correspondence (J. Corkran to J. Woodard, July 8, 2015) as “a joint concern that EPA is sharing in this letter.”

7. Remaining Remediation D&D OU.

a. The SMP is not transparent to the reader (including EPA) regarding the remaining D&D scope at the PGDP and how that scope has been narrowed down to “currently includes 30 units” in a “remaining remediation” D&D OU.

- Revise the SMP to explain to the reader the basis for DOE’s identification of this cohort of “30 units” as the “remaining remediation” D&D scope.
- Revise the text to specify that these units will be addressed under the FFA CERCLA process or revise the text to commit to consultation with EPA and KY on the proper disposition of these 30 units.
- Propose an out-year enforceable completion date for the “30 units” scope of work for incorporation into Appendix 5.
- Revise the SMP to identify the actual remaining D&D scope at the PGDP (beyond the 30 units), and explain why any particular SWMUs or facilities have not been included in the “remaining remediation” D&D OU.

b. EPA seeks in the revised SMP a transparent presentation of the regulatory framework for D&D and the tri-party vetting process under the FFA for binning Facilities and SWMUs for decisions on whether a removal, remedial, and maintenance action is appropriate. In particular, EPA expects that, consistent with the PGDP FFA, releases of hazardous substances or a substantial threat of hazardous substances from these Facilities will be addressed under the FFA as a CERCLA non-time critical removal action or possibly as a CERCLA remedial action. Now that the GDP plant has shut down, and the United States Enrichment Corporation has returned the plant facilities to DOE, the most significant hurdle to planning the integration and timing of environmental media cleanup and D&D activities has been eliminated. Revisions to the FY2016 SMP are appropriate to describe the remaining scope of environmental media cleanup and D&D at the facility, and to forecast integrated schedules of work that achieve a balance each year between investigation and cleanup of soils, surface water, groundwater and air contamination and cleanup of the contaminated facilities across the PGDP.

- Revise the SMP to describe the regulatory framework for D&D at Paducah GDP.
- Revise the SMP to describe the tri-party vetting and documentation process under the FFA for binning Facilities and SWMUs for removal, remedial, and maintenance actions.
- Revise the SMP to describe the remaining environmental media cleanup and D&D at the facility.
- Revise the SMP to forecast an integrated schedule of work that achieves a balance each year between investigation and cleanup of environmental media and D&D of the contaminated facilities across the PGDP.

8. CERCLA Waste Disposal Alternative Evaluation. Under Key Planning Assumptions, Item (1), on page 3-20, please evaluate the sentence and revise for completeness.

9. Appendix 4 – Solid Waste Management Units/Areas of Concern by Operable Unit – “No Further Action” Table and Footnote 11. On page 4-10, the SMP includes the following footnote: *Footnote 11. A portion of the SWMUs/areas of concern listed may not qualify as NFAs per CERCLA and may require additional characterization for radionuclides under the appropriate Remaining Remediation OU.* It is not transparent to the reader, including the EPA reviewer, which SWMUs/AOCs “may not qualify as NFAs per CERCLA”. Also, it is not clear why the footnote asserts that the only hazardous substance for which EPA would conduct a review under CERCLA is radionuclides: this is not correct. An NFA determination under CERCLA must be based on a robust evaluation of the information and data to ensure that there is no unacceptable risk to human health or environmental resources from hazardous substances, pollutants and contaminants that require response action to ensure long-term protectiveness.

- Revise the NFA Table to indicate those SWMUs/AOCs for which DOE is able provide the Administrative Record illustrating that EPA has approved an NFA determination.
- In support of EPA’s review of the revised table, provide the AR Index for those SWMUs where DOE believes EPA has approved an NFA determination.

10. Appendix 4 – Solid Waste Management Units/Areas of Concern by Operable Unit – “SWMUs that will be investigated and remediated by the U.S. Army Corps of Engineers” Table and Footnote 13. On page 4-14, the SMP includes the following footnote: *Footnote 13. EPA review/approval of the CERCLA documentation associated with these SWMUs has not occurred.* The four Kentucky Ordnance Works (KOW) SWMUs are:

- SWMU 94 KOW Trickling Filter and Leach Field
- SWMU 95 KOW Burn Area
- SWMU 157 KOW Toluene Spill Area
- SWMU 182 Western Portion of Yellow Water Line

As written, the SMP text implies that the CERCLA documentation for the KOW SWMUs has been generated and is awaiting EPA review and approval. Region 4 is not in receipt of draft CERCLA documentation for the four KOW SWMUs for Agency review and approval. Also, as written, the SMP text implies that KY has no role in the review and approval of the KOW SWMU CERCLA documentation: this is not the case under the FFA.

The SMP does not provide any information to help the reader (including EPA) understand when (timetable and deadlines) this scope of work will be initiated and completed, and how investigation and cleanup of these SWMUs dovetails with other scope of work (including the CS OU) for the PGDP Superfund Site.

Revise the SMP to:

- include an explanation for the reader of the status (not yet available; complete and pending review; etc.) of the CERCLA documentation mentioned in Footnote 13;
- explain the regulatory path forward, including the respective roles of DOE, KY, EPA and the U.S. Army Corps of Engineers in the investigation and cleanup of the four SMWUs and how this scope of work dovetails with other scope of work for the PGDP; and
- provide the timetables and deadlines (Appendix 5) for investigation, reporting and close-out of these SWMUs.

11. Groundwater Operable Unit – Vapor Intrusion Study. Significant TCE- contaminated groundwater plumes exist within the PGDP Plant boundary. The potential for intrusion of vapors from the subsurface soils and groundwater into buildings at the plant, and exposures of people to those vapors, exists within the Limited Area. Buildings with potentially completed exposure pathways include those that are currently occupied and those that are not occupied now but may be occupied in the future by workers. In addition, new construction over a groundwater plume may require an analysis to evaluate whether potential vapor intrusion warrants building design and construction considerations to prevent completed exposure pathways.

Revise the SMP to describe the vapor intrusion scope of work at the PGDP (Appendix 3) and submission of a D1 Work Plan including timetables and deadlines (Appendix 5) for the conduct of a Vapor Intrusion Study (or Studies) for those areas of the PGDP that overlie the Groundwater Operable Unit. EPA notes that the DOE has recently demonstrated the presence of (previously unknown) TCE DNAPL at 211-B at the C-720, a building that EPA understands is currently occupied and in use.

- The deadline for submission of the draft Work Plan should be established for a date (mm/dd/yy) within the three-year enforceable window: EPA recommends 3Q FY2017 considering that, at present, there may be unacceptable risk to human health at one or more facilities at the PGDP.

12. Groundwater Operable Unit – Dissolved Phase Plumes. Although interim response action decision documents are in place to address migration of the higher concentration areas of TCE in the dissolved phase plumes beyond the current plant boundary (Limited Area), the SMP schedule for addressing the remaining extent of the dissolved phase plumes beyond the plant boundary is set far into the future: FY2029 for a ROD and an Interim Remedial Action Completion Report in FY2032.

In the meantime, the contaminated groundwater outside the plant boundary (TCE above the MCL, for example) continues to migrate toward the Ohio River and express itself at various surface water bodies (seeps, creeks, the Ohio River). In lieu of an Interim Record of Decision and reporting under the FFA, it appears that DOE is implementing a Long-Term Monitoring (LTM) program under the DOE Environmental Monitoring Plan (outside the FFA) for natural attenuation of groundwater contaminants by dilution outside the plant boundary.

- Revise the SMP to include the plan, timetables, and deadlines for the necessary off-plant investigations and Primary Documents to support an acceleration of the phased approach to dissolved phase plumes groundwater cleanup outside the plant boundary. The accelerated schedule should emphasize progress toward attaining the goal of “Groundwater Migration Under Control” under the Government Performance Results Act (GPRA).

13. Groundwater Operable Unit – C-400 Sub-Slab Sources Investigation. As noted in the “Comments” field of the C-400 Phase IIb Treatability Study schedule (DOE/LX/07-2202&D1), a Remedial Design Site Investigation is being considered by DOE to evaluate C-400 sub-slab contamination. Revise the SMP to include a plan (Appendix 3), including timetables and deadlines for Primary Document milestones (Appendix 5), for the conduct of a sub-slab investigation of TCE sources and other potential contaminants at the C-400 Building. The schedule for the sub-slab investigation should ensure that the investigation work is completed and an approved report is available to the FFA parties prior to the next scheduled Five Year Review (FY2018).

14. Groundwater Operable Unit -Northeast Plume Interim Remedial Action Optimization. Revise the SMP to include the timetable and deadlines for conduct of the Northeast Plume optimization activities as reflected in the Remedial Action Work Plan. Include the remedial action construction start date (aka “field start”) from the D2/R2 RAWP (July 25, 2016) in Appendix 5. (This is the date when DOE has projected that substantial, continuous, physical, on site, remedial optimization activities will begin.) In the “Comments” field, add a note that DOE will provide a letter to EPA and KY documenting the remedial action construction start date.

15. D&D OU – Disposition of Inactive Facilities at PGDP – C410/420 Complex. DOE has advised the EPA and KY that waste disposition from this activity has been completed and the “90-day” interval for submission of the D1 Removal Completion Notification Letter has been triggered. Revise the SMP to include the date (mm/dd/yy) of waste removal completion and the deadline (mm/dd/yy) for submission of the Completion Notification Letter. The notation in the SMP should note that the Completion Notification Letter will be accompanied by the Removal Action Report for the Non-Time Critical Removal Action.

16. Burial Grounds OU – SWMUs 5&6 Remedial Action. The Formal Dispute related to SWMUs 5&6 has been resolved.

- Revise the SMP to include the deadline (mm/dd/yy) defined in the Memorandum of Agreement for submittal of the D2/R1 Proposed Plan for regulatory review and approval.
- Revise the SMP to include the schedule for publishing the PP and receiving public comment on the PP.
- Revise the note in the “Comments” field to state that the FFA Managers will confer within 10 days of the close of public comment to evaluate the potential need for a revised PP (consistent with FFA Section XIV(C)).

17. Burial Grounds OU – SWMUs 2 and 3 Remedial Action. Although a few issues related to the Burial Grounds 2/3/7/30 D2 FS are currently in formal dispute at the Dispute Resolution Committee level, the long-term planning date of 2Q 2022 for public notice and gathering of public input on the PP is far in the future. It is not reasonable to wait six (6) years before soliciting public feedback on a preferred alternative for these Burial Grounds, especially considering that a decision on the CERCLA WDA is likely to occur within the next two years. It is EPA's expectation that, after approval of the FS, PPs will be developed for regulatory agency review and approval and subsequently published for public comment without delay and consistent with the timetables in the FFA.

- Revise the D1 Proposed Plan submittal date from 2nd Q 2022 to propose a date within the enforceable window (FY2016-2018).
- Retain the current note stating that the D1 PP will be submitted 45 days after EPA and KY approval of the FS.
- Include line item entries with projected dates in the schedule for public notice (upon regulatory approval of the PP) and receipt of public comment.
- Add a note in the "Comments" field to state that the FFA Managers will confer within 10 days of the close of public comment to evaluate the potential need for a revised PP (consistent with FFA Section XIV(C)).

18. Grounds OU – SWMUs 7 and 30 Remedial Action. Although the Burial Grounds 2/3/7/30 D2 FS is currently in formal dispute at the Dispute Resolution Committee level, the long-term planning date of 4Q 2023 for public notice and gathering of public input on the PP is not reasonable. It is EPA's expectation that, after approval of the FS, PPs will be developed for regulatory review and approval and subsequently published for public comment without delay and consistent with the timetables in the FFA.

- Revise the D1 Proposed Plan submittal date from 4Q 2023 to propose a date within the enforceable window (FY2016-FY2018).
- Retain the current note stating that the D1 PP will be submitted 45 days after EPA and KY approval of the FS.
- Include line item entries with projected dates in the schedule for public notice (upon regulatory approval of the PP) and receipt of public comment.
- Add a note in the "Comments" field to state that the FFA Managers will confer within 10 days of the close of public comment to evaluate the potential need for a revised PP (consistent with FFA Section XIV(C)).

19. Burial Grounds – SWMU 4 Remedial Action. In Appendix 5, DOE moved the D1 PP milestone date from 1Q 2018 to a date outside the enforceable window (1Q 2019). Revise the SMP to restore the deadline of 1Q 2018 (within the 3 year enforceable window) for the D1 PP consistent with the PGDP FFA timetables.

- Add a note stating that the D1 PP will be submitted 45 days after EPA and KY approval of the FS.
- Include line item entries with projected dates in the schedule for public notice (upon regulatory approval of the PP) and receipt of public comment.
- Add a note in the "Comments" field to state that the FFA Managers will confer within 10 days of the close of public comment to evaluate the potential need for a revised PP (consistent with FFA Section XIV(C)).

20. Remaining Remediation Scope (previously post-GDP scope). Revise the SMP to include a plan, including timetables and deadlines, for investigation and cleanup of the remaining remediation scope. Propose an enforceable completion date for the Remaining Remediation Scope.

21. Community Relations Plan. Revise the SMP to include text (Appendix 3) describing a plan to conduct a broad-reaching community survey tailored to the PGDP cleanup, the results of which will be incorporated into the next revision of the Community Relations Plan.

- Establish a deadline (mm/dd/yy) in the Appendix 5 for submission of this primary document to EPA and KY not later than June of 2018. (Ref: J. Corkran, February 17, 2016, EPA Comments on the D2 CRP dated December 2015).
- In the Operable Unit column of the schedule, table, delete “NA” and insert “OU 00” to designate a Site-wide activity.

22. Five Year Reviews. In correspondence dated September 30, 2014, the EPA Region 4 Acting Division Director issued a “protectiveness deferred” determination and established a scope of work for conduct by DOE and a deadline of March 31, 2016, for reporting the results of the additional work in a FYR Addendum. Consistent with CERCLA Section 120 and Section XXX (Five Year Review) of the PGDP Federal Facility Agreement, revise Appendix 5 of the SMP to:

- Delete the “TBD” planning date and inset the deadline established by EPA of March 31, 2016.
- Delete the note in the “Comments” field and insert a citation to the R. Chaffins letter of September 30, 2014.
- In the Operable Unit column of the schedule table, delete “NA” and insert “OU 00” to designate a Site-wide activity.

23. Appendix 6 – Data Management Plan. Appendix 6, Data Management Plan (1998), is appended to the SMP but is never explained to the reader, or referenced, in the body of the SMP. The DMP appended to the SMP is almost 20 years old. Revise the SMP to include a brief text explanation of why the 1998 Data Management Plan is appended to the SMP, why the DMP has not been updated since 1998, and how the 1998 DMP is used by DOE at the PGDP Superfund Site.

Attachment

EPA Perspective on DOE Proposal for Conducting D&D at PGDP. D. Buxbaum and J. Tufts, EPA Region 4. May 2015.