

From: sachiko-w.mcalhany@nnsa.srs.gov

Sent: Thursday, March 20, 2008 9:17 AM

To: Dimarzio, John A.

Cc: sachiko-w.mcalhany@nnsa.srs.gov; drew.grainger [REDACTED]; Groome, Chadi D.; Hitesh. NIGAM [REDACTED]

Subject: Fw: Comments on the PDCF Data Call Response

Attachments: Comments on PDCF Response-030508 (2).doc

Attached are the WGI responses to the PDCF comments. I hope this is what you were looking for. If you need clarification, we can get on a conference call with both Randy Yourchak (WSRC) and Randy Reddick (WGI).

Sachiko

----- Forwarded by Sachiko Mcalhany/NNSA/DOE/Srs on 03/20/2008 08:58 AM -----

"Reddick, Randy" [REDACTED]
[REDACTED]

To "Z Yourchak, Randy" [REDACTED]

cc <craig02.martin [REDACTED]>, "Z Mcalhany, Sachiko" <sachiko-w.mcalhany@nnsa.srs.gov>, <brent.blun [REDACTED]>, "Shoberg, Roger" [REDACTED]

03/19/2008 05:38 PM

Subject RE: Comments on the PDCF Data Call Response

Randy,

I have attached the data call table with responses to the comments. A couple of notes for clarification: a) my approach to this table was in a timeline fashion, i.e., 1) the SPD EIS (November 1999) provides the original basis, 2) the NEPA evaluation in B-PDCF-1-02-033 provided an update in March of 2007 comparing the PDCF design at that time with the SPD EIS, and finally 3) the table provided in the SAIC data call request was used to update B-PDCF-1-02-033. So when I used "No Changes" on the data call it meant there were no changes to design or those parameters under evaluation since B-PDCF-1-02-033 was submitted in March 2007, b) the 9 MT of additional surplus material was assumed to be similar to the material to be processed at PDCF during the first 7.5 years. Adding the 9 MT for processing at PDCF would extend the operating life of PDCF by 2.6 years. This additional material would not require any changes to the facility design and would not result in different waste quantities (on an annual basis) or products. Cumulative impacts should be considered for the additional 9MT since that translates to an additional 2.6 years of waste disposal. The SPD EIS was based on a 15-year operation for PDCF so our current design (7.5 years) plus the additional 2.6 years is still within that envelope, and c) I have added some background information on construction air emissions and some recently developed PDCF resource needs at the end of the data call file. The resource information is undocumented at this point and may be refined in the future.

It should also be noted that the URS design effort does not include the PDCF administration building that will be built onsite. Also, the evaluation in B-PDCF-1-02-033 was intended to highlight only those items involving a relatively significant change in the PDCF design from the SPD EIS. The PDCF design has undoubtedly deviated from the SPD EIS in several other instances that were not evaluated in B-PDCF-1-02-033. Those changes will come to light during the full NEPA process – should DOE opt to revise the SPD EIS.

Please don't hesitate to contact me for further information needs. This e-mail and the attached document have received a classification review and are U/NU.

Thanks,

Randy R

Sachiko Mcalhany/NNSA/DOE/Srs

03/06/2008 03:07 PM

To Craig02 Martin [REDACTED]

cc Randy Yourchak [REDACTED]

Subject Fw: Comments on the PDCF Data Call Response

PDCF Information Request

Information Requested (Note: Original NEPA analysis is documented in DOE/EIS-0283-SA-1 and MOX FFF EIS, NUREG-1767)	PDCF		
	Update to Baseline Scope in Current NEPA Analysis (using B-PDCF-1-02-033 as baseline) ^[jd1]	Up to 9MT of Additional Future Surplus Material	SPD EIS Data (1999)
General			
Schedule - Design - Construction or Modification - Operation - Deactivation and decommissioning	Design 3Q 1999 – 4Q 2009 Construction 1Q 2011 – 4Q 2016 Operations 2Q 2019 – 2030 D&D NA	No changes to design or construction. Schedules for operation and D&D would require extension.	Construction start 2001, operations start 2004 (10-year operation); (SPD EIS, 2-51)
	Congressional Data Sheets FY 2008		

Information Requested (Note: Original NEPA analysis is documented in DOE/EIS-0283-SA-1 and MOX FFF EIS, NUREG-1767)	PDCF		
	Update to Baseline Scope in Current NEPA Analysis (using B-PDCF-1-02-033 as baseline) ^[jd1]	Up to 9MT of Additional Future Surplus Material	SPD EIS Data (1999)
Description of modifications to facility including: <ul style="list-style-type: none"> - Latitude and Longitude - Elevation above NGVD (units) - ^[jd2]Floor space used (units) - Plot plan^[jd3] - Floor plan with equipment arrangement - Features that prevent unauthorized entry (unclassified description) - Features that ensure safeguards against malevolent acts or material diversion by internal and external entities (unclassified description) - Fire protection systems - Features that control releases of airborne contaminants (include diagram of treatment train) - Features that control releases of waterborne contaminants (include diagram of treatment train) - Features/procedures that prevent criticality - Description of liquid and non-liquid waste processing 	Recent design changes: <ul style="list-style-type: none"> -SRL furnace elimination -SRL gas extraction removed -Sanitization; microwave technology to replace furnaces. Not baseline change yet but appears to have verbal agreement. -Fire protection – added sprinklers to non-inerted gloveboxes -Hydride; Moved HEPA filters from across room to next to glovebox. Smaller volume of ductwork impacted -Hydride; replaced hydrogen getter beds with hydrogen generator -Hydride; added HEPA filter between hydride heat exchanger and vacuum pump. This allowed enclosure to be eliminated -Changed tiles at bottom of sandfilter. -Add staircase to outside of Pu Process Bldg to access liquid waste tanks in basement. -Routed condensate and blowdown from Upper Three Runs to Central Sanitary -No procedures yet for criticality -Added grouting process for floor sweepings in Waste Management area glovebox sweeping and lab concentrated liquids 	No changes to the General Arrangement to accommodate 9 MT. Facility is designed for 20 year life so 9MT should stay in this envelope.	Process building - 200,000 square feet (SPD EIS; 2-51) Utilities - 26,000 square feet (SPD EIS; 2-51) Hardened Facility (SPD EIS; 2-15) Removal of gallium (SPD EIS; 2-14) Hydride-oxidation (SPD EIS; 2-18)

Information Requested (Note: Original NEPA analysis is documented in DOE/EIS-0283-SA-1 and MOX FFF EIS, NUREG-1767)	PDCF		
	Update to Baseline Scope in Current NEPA Analysis (using B-PDCF-1-02-033 as baseline)	Up to 9MT of Additional Future Surplus Material	SPD EIS Data (1999)
Construction/modification			
Land disturbed (acres or hectares)	No changes[jd4]	No changes	5 acres[jd5]
Description of activities conducted (e.g., decontamination/removal/disposal of existing facilities/equipment, land clearing, onsite concrete plant) and modifications needed (e.g., floors, walls, support beams, roof, waste management, ventilation, new roads)	No changes	No changes	See SPD EIS pages 2-14 to 2-21
Describe type and quantity of air pollutant emitting equipment and frequency and duration of use.	No changes	No changes	See SPD EIS 4.4
Describe type and quantity of noise producing equipment and frequency and duration of use.	No changes	No changes	See SPD EIS 4.4
Emission release parameters – For any stack releases - release location (latitude & longitude), stack height, stack diameter, stack exhaust velocity or flow rate, exhaust air temperature – For fugitive releases - release location and dimensions of source area	No changes	No changes	See SPD EIS 4.4
Air emissions (point source and fugitive): - Criteria Pollutants (metric tons/yr) - HAPs (kilograms/yr) - Radioisotopes (curies/yr)	No changes	No changes	See SPD EIS Table G-57 through G-58

Information Requested (Note: Original NEPA analysis is documented in DOE/EIS-0283-SA-1 and MOX FFF EIS, NUREG-1767)	PDCF		
	Update to Baseline Scope in Current NEPA Analysis (using B-PDCF-1-02-033 as baseline)	Up to 9MT of Additional Future Surplus Material	SPD EIS Data (1999)
	Liquid effluents - Location(s) of discharge(s) and copies of permit(s) - Rate(s) of discharge(s) (units/day) - Concentrations of contaminants (picocuries/liter or micrograms/liter)	No data	No changes
Employment for each year (FTEs)	No data	No change	See SPD EIS Table E-4
Shifts	No data	No change	No data
Worker radiological exposure - total dose (person-rem)	No data	No change	See SPD EIS Section 4.4.1.4
Number of exposed workers	Not calculated	Same as base case	See SPD EIS Section 4.4.1.4
Waste generated (provide solid and liquid separately) (units/yr): - TRU - LLW - MLLW - Hazardous - Non-Hazardous	No TRU, LLW, MLLW 5 m3/yr hazardous 1,514 m3/yr liq non-haz 120 m3/yr solid non-haz	No changes in annual quantities[jd6]	See SPD EIS Table H-27 50m3/yr hazardous 5,300 m3/yr liq non-haz 120 m3/yr solid non-haz

Information Requested (Note: Original NEPA analysis is documented in DOE/EIS-0283-SA-1 and MOX FFF EIS, NUREG-1767)	PDCF		
	Update to Baseline Scope in Current NEPA Analysis (using B-PDCF-1-02-033 as baseline)	Up to 9MT of Additional Future Surplus Material	SPD EIS Data (1999)
Operations			
Land area occupied by the completed facility (acres or hectares)[jd7]			
Description of Process including: - Flowchart - Throughput (units/yr)	No changes in thrupt[jd8] Continual changes to process flow diagrams and P&IDs[jd9]	No changes	See SPD EIS Sections 2.4.1.1, 2.4.1.2 and Figures 2.8, 2.9
Emission release parameters - For stack releases - release location (latitude & longitude), stack height, stack diameter, stack exhaust velocity or flow rate, exhaust air temperature - For fugitive releases - release location and dimensions (including height) of vents or louvers from which release would occur - Emissions from emergency generators, boilers, and other ancillary equipment	Stack height is under review, potential change No changes to fugitive emissions No changes from generators	No changes	See SPD EIS 4.4
Air emissions - Criteria Pollutants (metric tons/yr) - HAPs (kilograms/yr) - Radioisotopes (curies/yr)[jd10]	Grouting concentrated liquids from analytical lab [jd11]so reduced nitrogen oxides and sulfur oxides	No changes	See SPD EIS Tables G-59 through G-60
Liquid effluents - Location(s) of outfall(s) - Rate(s) of discharge(s) (units/day) - Concentrations of contaminants (picocuries/liter or micrograms/liter)	Condensate/blowdown new discharge point No changes in volumes	No changes	The only liquid waste estimate made in SPD EIS was for non-hazardous liquid, see page F-17. See SPD EIS Table H-28 for non-hazardous liquid waste estimate.

Information Requested (Note: Original NEPA analysis is documented in DOE/EIS-0283-SA-1 and MOX FFF EIS, NUREG-1767)	PDCF		
	Update to Baseline Scope in Current NEPA Analysis (using B-PDCF-1-02-033 as baseline)	Up to 9MT of Additional Future Surplus Material	SPD EIS Data (1999)
Employment (FTEs)	Peak of 550 FTEs [jd12]in first full year of operation. Just under 500 FTEs for remaining years.	No changes	See SPD EIS Table E-6
Shifts	24/7 for 200 days per year; remainder for inventory, maintenance, holidays	No changes	Not provided
Employee radiological exposure - total dose (person-rem)	No change in previous calculation.	No changes	See SPD EIS Section 4.4.2.4
Number of exposed workers	Not calculated	Same as base case	See SPD EIS Section 4.4.2.4
Utilities needed - Potable water (units/yr) - Non-potable water (units/yr) - Electricity (kw/hr) - Natural gas (units/yr) - Coal (units/yr) - Gasoline (units/yr) - Diesel Fuel (transportation) (units/yr) - Heating fuel oil (units/yr)	No changes[jd13]	No changes	See SPD EIS Table E-7
Resources needed - Metals (units/yr) - Chemicals (units/yr) - Gases (units/yr) - other materials (units/yr)	Small cylinder of sulfur dioxide added to lab for calibrations – not part of baseline yet	No changes	See SPD EIS Table E-7
Waste generated (solid or liquid) (units/yr): - TRU - Mixed TRU - LLW - MLLW - Hazardous - Non-Hazardous	No changes[jd14]	Annual volumes stay the same	See SPD EIS Table H-28

Information Requested (Note: Original NEPA analysis is documented in DOE/EIS-0283-SA-1 and MOX FFF EIS, NUREG-1767)	PDCF		
	Update to Baseline Scope in Current NEPA Analysis (using B-PDCF-1-02-033 as baseline)	Up to 9MT of Additional Future Surplus Material	SPD EIS Data (1999)
Please provide any safety documentation (e.g., safety assessments, safety analysis reports) for this facility.	See Rev B – Internal Draft [jd15]	None developed	See SPD EIS Appendix K
List any accident scenarios (in existing safety or NEPA documents) that need to be modified because of changes produced by the proposed action. For any new or modified scenarios provide the information listed below:	No changes	No changes	Does not apply
Radiological accidents - Accident description (include release pathways and mitigating factors) - Accident frequency - Material at risk - Material characteristics - Source term released to environment (curies by isotope) - Release parameters: release fractions, release timing, location, release height, release duration, and heat of release - Filtration (specify efficiency) - Number of involved workers	Does not apply	Does not apply	Does not apply

Information Requested (Note: Original NEPA analysis is documented in DOE/EIS-0283-SA-1 and MOX FFF EIS, NUREG-1767)	PDCF		
	Update to Baseline Scope in Current NEPA Analysis (using B-PDCF-1-02-033 as baseline)	Up to 9MT of Additional Future Surplus Material	SPD EIS Data (1999)
Chemical inventory for chemical accident analysis - List chemicals, total facility inventory, and annual usage of the chemical - Size and location of largest tank (storage container) for each chemical. Include floor area or diked area that would contain the spill when applicable. - Concentration of chemical in largest tank (identify if this is the highest concentration of the chemical being stored). If not, also list the other storage locations, size of tank and concentration of chemical being stored.	Does not apply	Does not apply	Does not apply
Design basis earthquake frequency and intensity	No changes	No changes	See SPD EIS Appendix K
Earthquake frequency that would result in loss of structural integrity	No changes	No changes	See SPD EIS Appendix K
Other natural phenomena that would result in loss of structural integrity and their frequency	No changes	No changes	See SPD EIS Appendix K
Aircraft crash frequency	No changes	No changes	See SPD EIS Appendix K

The text below was copied from the PDCF Waste Management Plan, Rev 1, June 30, 2005, Q-PRP-F-00001 (Construction air emissions)

The concentrations were estimated using the Industrial Source Complex, Short-Term, Version 3 (ISCST3) computer code based on hourly atmospheric data from 1992 through 1996. The 399 receptor locations used in the analysis were taken from the Mixed Oxide Fuel Fabrication Facility Environmental Report (NNSA 2001) and are at the SRS boundary. Fugitive, diesel, concrete batch plant, and vehicle emissions were modeled as volume sources. PDCF process area emissions were modeled as a point source.

The impacts from construction were based on a 60-month schedule and included the following: fugitive emissions, emissions from diesel construction equipment, a concrete batch plant, and employee vehicles. Fugitive emissions were based on AP-42, Compilation of Air Pollutant Emission Factors, Section 13.2.3. Emission factors for diesel construction equipment and employee vehicles were taken from the Mixed Oxide Fuel Fabrication Facility Environmental Report. Concrete batch plant emissions were based on AP-42, Section 11.12, and represent controlled emissions from a central mix concrete facility.

The impacts from operations considered potential emissions from the process area, diesel generators, and employee vehicles. Emission factors for employee vehicles were taken from the Mixed Oxide Fuel Fabrication Facility Environmental Report. Emission factors for diesel generators were taken from AP-42, Section 3.3. Process area emissions were taken from XCLC-F-00277 (WGI 2003h). The vehicle emissions dominated both the construction and operations categories because, conservatively, all vehicle emissions were modeled as coming from a volume source located at the PDCF.

Resources Needed – this is an undocumented estimate

	Pu Process Building	PDCF
Concrete	90,000 CY	128,000 CY
Reinforcing Steel	15,000 tons	21,000 tons
Conduit	168,000 LF	467,000 LF
Cable Tray	11,000 LF	16,000 LF
Power/Control Cable	2,000,000 LF	2,700,000
Piping	53,000 LF	97,000 LF
Facilities	126,000 Sq Ft	280,000 Sq Ft

Resources Needed – this is an undocumented estimate

Resource	SPD EIS	PDCF Estimate
Coal (t)	2,400	0
Fuel oil (l)	38,000	17,000
Water (l)	48,000,000	61,000,000
Hydrogen (m ³)	450	0
Nitrogen (m ³)	2,200	20,000
Oxygen (m ³)	330	1
Argon (m ³)	14,000	95,000
Chlorine (m ³)	62	0
Helium (m ³)	4,800	14,000