From: clayton.shedrow[redacted]
Sent: Tuesday, February 19, 2008 1:38 PM
To: Dimarzio, John A.
Cc: clayton.holloway[redacted]; greg.burbage[redacted]; perjetta.hightower[redacted]; drew.grainger[redacted]
Subject: Fw: Data Call Response for K-Area Immobilization Project

Attachments: PuBlockFlow.pdf; Conceptual Flowchart.pdf; glasscanst.pdf; SAIC Assessment of Immob Response-021208.doc; SAIC Assessment of Immob Response-021208.doc

John

Please see the attached partial response to the SEIS data call. If you have any questions, please give me or Clayton Holloway a call.

[redacted]

Thanks.

C. Barry Shedrow
[redacted]

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----- Forwarded by Clayton Shedrow[redacted] on 02/19/2008 01:35 PM -----

Clayton Holloway[redacted]

02/19/2008 12:51 PM

To Greg Burbage[redacted]

cc Clayton Shedrow[redacted], Joseph Damelio[redacted] Perjetta Hightower[redacted] Lee Carey[redacted], James Bel[redacted]

Subject Re: Fw: Data Call Response for K-Area Immobilization Project Link

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Attached is a copy of the process flow in cartoon and block flow diagram and a slide of the number of cans per year. Let me know if you need anything further.

Clayton Holloway
Mechanical Lead
PUDisp Project
[redacted]

Greg Burbage [redacted]

02/19/2008 10:08 AM

To John Hammond [redacted], Rick Spaulding [redacted] Betsy Westover [redacted] Clayton Holloway/ [redacted], Linda Nass [redacted], Dvernon Osteen/ [redacted] Kevin Durrwachter [redacted] Benjamin Morgan [redacted]

cc Clayton Shedrow [redacted], Joseph Damelio [redacted] Perjetta Hightower [redacted] Lee Carey/ [redacted], James Bell/ [redacted]

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Clayton Holloway - 16c
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02/15/2008 03:05 PM

To <clayton.shedrow[redacted]
cc "Groome, Chadi D." [redacted], <drew.grainger[redacted], <greg.burbage[redacted]
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----- Forwarded by Clayton Shedrow[redacted] on 02/14/2008 02:44 PM -----

Bruce Hewett/ [redacted]

02/14/2008 01:04 PM

To Greg Burbage [redacted]

cc Clayton Shedrow [redacted], John Monahan [redacted] Robert Shankle [redacted], Sue Tate [redacted], Donald Moody [redacted] Samuel Rush [redacted]

Subject Fw: Data Call Response for K-Area Immobilization Project

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Bruce Hewett
NMM Safeguards & Security
Division Information Security Officer
[redacted]

----- Forwarded by Bruce Hewett/[redacted] on 02/14/2008 10:17 AM -----

Greg Burbage/ [redacted]

02/13/2008 03:40 PM

To Dvernon Osteen [redacted] Bruce Hewett [redacted], Greg Burbage [redacted], Kevin Durrwachter [redacted] Linda Nass [redacted] John Hammond [redacted], Benjamin Morgan [redacted] Perjetta Hightower [redacted]

cc James Bel [redacted], Lee Carey [redacted] Joseph Damelio [redacted] Betsy Westover [redacted] Clayton Shedrow [redacted] Clayton Holloway [redacted]

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----- Forwarded by Greg Burbage [redacted] on 02/13/2008 03:03 PM -----

Lee Carey

02/13/2008 09:26 AM

To Greg Burbage, Betsy Westover, John Hammond

cc James Bel, Perjetta Hightower

Subject Fw: Data Call Response for K-Area Immobilization Project

Please look at the information being requested and based on the original 10 melter scope development provide the requested information in your particular areas.

Any questions or issues, please call me.

Copy PK, Ricky, and I on any information you provide to Grainger.

Lee

----- Forwarded by Lee Carey on 02/13/2008 09:23 AM -----

Michelle Ewart

02/13/2008 09:14 AM

To James Bell/BSR, Perjetta Hightower, Lee Carey

cc

Subject Fw: Data Call Response for K-Area Immobilization Project

This doesn't look good at all. Without this SEIS, we are dead in the water. Given the schedule constraints, we can not afford not to elevate this issue. If other organizations are not doing there part, I need to know today.

Thanks,

Michelle

----- Forwarded by Michelle Ewart on 02/13/2008 09:04 AM -----

Drew Grainger

02/12/2008 03:38 PM

To H Gunter, Michelle Ewart, Carl Lanigan

cc

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Savannah River Operations Office

----- Forwarded by Drew Grainger on 02/12/2008 03:36 PM -----

"Dimarzio, John A."

02/12/2008 03:16 PM

To <clayton.shedrow, <clayton.holloway

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Science Applications International Corporation
[redacted]

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----- Forwarded by Clayton Shedrow[redacted] on 02/19/2008 01:40 PM -----

Greg Burbage[redacted]

02/19/2008 01:25 PM

To Clayton Shedrow[redacted]
cc Perjetta Hightower[redacted]
Subject Fw: Data Call Response for K-Area Immobilization Project

Barry, I know that you have seen these, however, I am forwarding along with the updated information from the data call that I have to date (attachment). Please scrub these responses. I will forward you the others as I obtain.

----- Forwarded by Greg Burbage[redacted] on 02/19/2008 01:21 PM -----

Clayton Holloway

02/19/2008 12:51 PM

To Greg Burbage

cc Clayton Shedrow, Joseph Damelio, Perjetta Hightower, Lee Carey/, James Bel

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Senior Environmental Scientist
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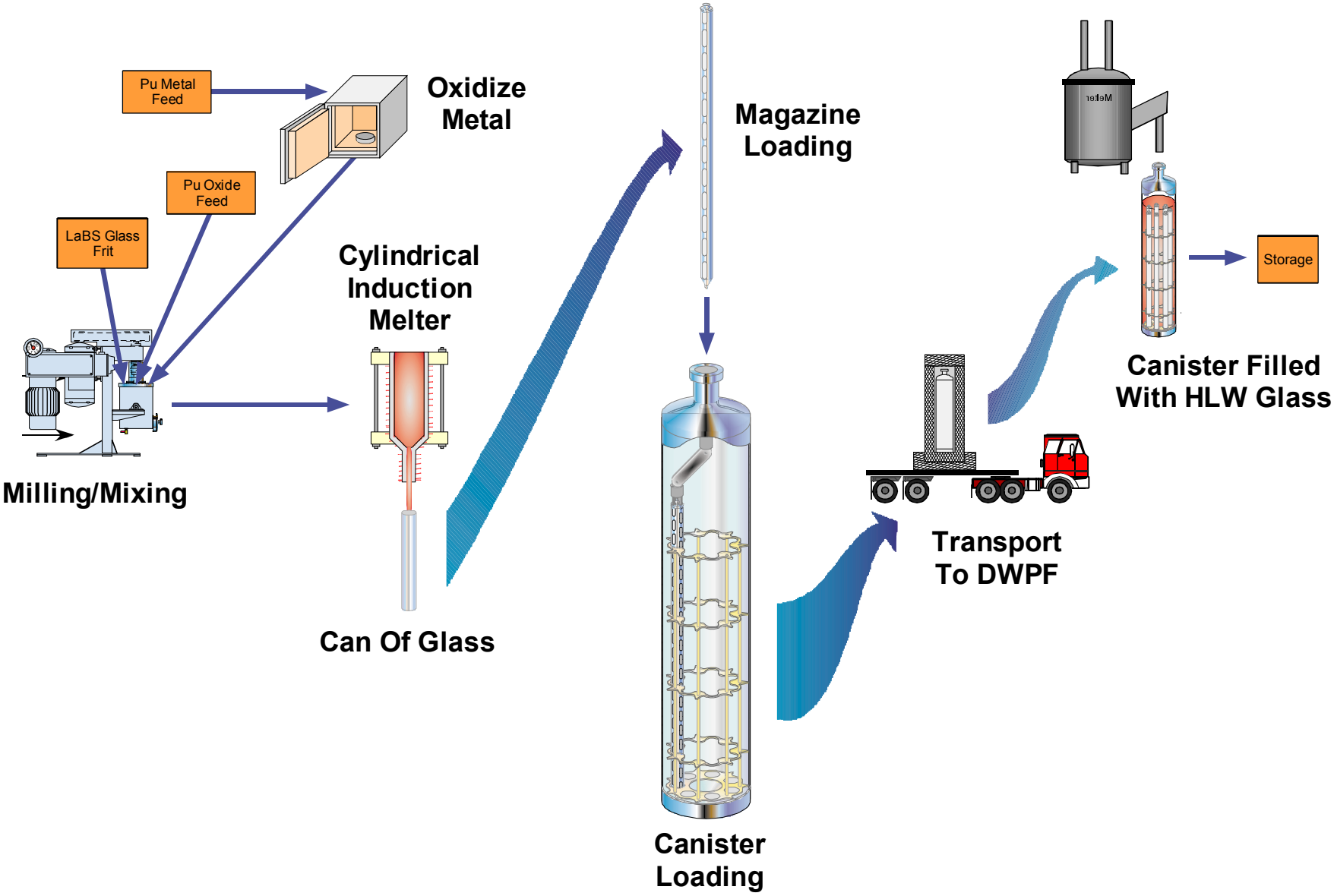
20201 Century Blvd
[redacted]

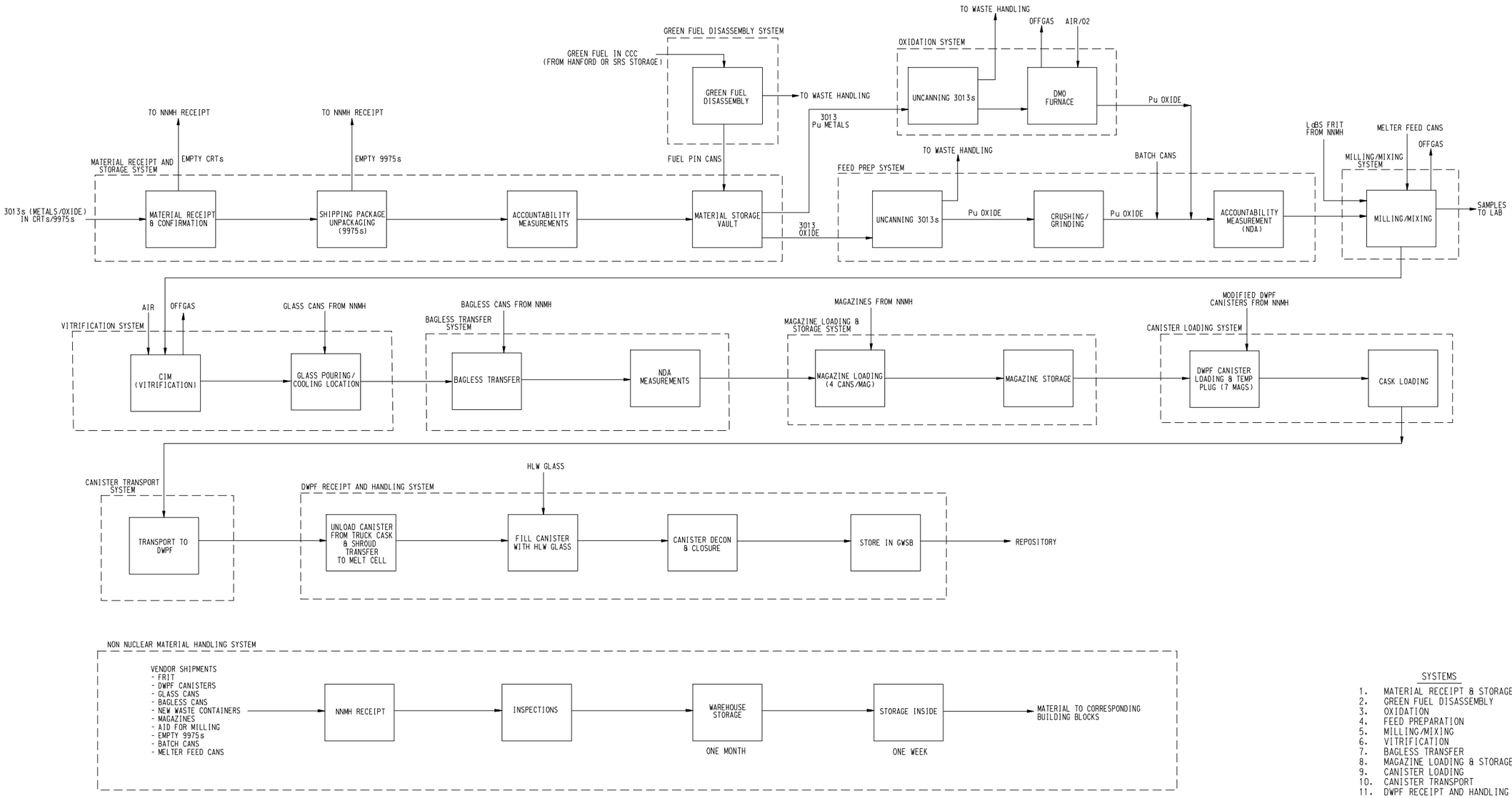
Conceptual Flowchart



DWPF Can-in-Canister (glass)

- Throughput (Ref: 2006 Alternative Study)
  - 6 year Pu vit facility operation
  - 22,100 cans glass / lifetime of facility
  - 28 cans glass (~16 kg Pu) / CIC
  - 132 CICs / year
  - 790 total CIC units
  - 95 additional DWPF canisters poured
- Mass of rack, magazines and cans: 450 kg

Pu DISPOSITION PRELIM
OVERALL BLOCK FLOW DIAGRAM
4/19/06
PuBlockFlow.dgn



SYSTEMS

1. MATERIAL RECEIPT & STORAGE
2. GREEN FUEL DISASSEMBLY
3. OXIDATION
4. FEED PREPARATION
5. MILLING/MIXING
6. VITRIFICATION
7. BAGLESS TRANSFER
8. MAGAZINE LOADING & STORAGE
9. CANISTER LOADING
10. CANISTER TRANSPORT
11. DWPF RECEIPT AND HANDLING
12. NON NUCLEAR MATERIAL HANDLING
13. WASTE HANDLING
14. HVAC
15. BOP
16. FIRE PROTECTION

Immobilization Facility Information Request

(please provide numerical data in commonly reported units)

Information Requested	Response
Immobilization Facility	**Modification of K-Reactor Building for immobilization of up to 13 metric tons surplus plutonium using the glass can-in-canister approach**
General	
Schedule - Design - Construction or Modification - Operation - Deactivation and decommissioning	**Source: Data Call Response – 10/4/07** Design complete – 2009 Construction complete – 2013 Operations – 6 years ending in 2019 Deactivation and Decommissioning – Begins 2019
Description of facility including: - Building number - Latitude and Longitude - Elevation above NGVD (units) - Area (units) - Plot plan - Floorplan 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	Old K-Reactor Building 1) Vernon O'Steen – can you provide a lat & longitude generally in front of KAC? 2) Vernon O'Steen – do you have elevation capability? 3) Vernon O'Steen – do you have acreage/hectares assessment capability? 4) Not applicable Data Call Response – 10/25/07, file "Vitrification System" and "Oxidation System" 5) Bruce Hewett – is there a document/plan/description that we can provide SAIC? **DOE Orders along with SRS 7Q Security Manual Procedures identify the Facility Security Requirements. Security & Safeguard Features, to include DBT Upgrades, are controlled information.** Data Call Response – 10/25/07, file "ICS and MCA" Data Call Response – 10/25/07, file "Fire Protection" Data Call Response – 10/25/07, file "Vitrification System" and "HVAC" 6) Greg Burbage – description to describe building sumps/pumps (Randy Sears) 7) Kevin Durrwachter – please provide document/information that prevents KAC criticality. Data Call Response – 10/25/07, file "Waste Management" and "Waste Study" (SK-DA-WM-0001)
Construction/modification	
Land disturbed for laydown (acres or hectares)	2 acres **Source: Data Call Response – 10/25/07, file "Site Work"**
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)	Data Call Response – 10/4/07 & Data Call Response – 10/25/07, file "Waste Study" (SK-DA-WM-0001)

Information Requested	Response
Describe type and quantity of air pollutant emitting equipment and frequency and duration of use.	Data Call Response – 10/25/07, file "Construction Equipment"
Describe type and quantity of noise producing equipment and frequency and duration of use.	Data Call Response – 10/25/07, file "Construction Equipment"
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	8) Linda Nass – describe, if applicable/quantifiable, emissions released during CX/mod. phase of project? 9) Linda Nass – describe, if applicable/quantifiable, fugitive emissions during CX/mod. phase of project?
Air emissions (point source and fugitive): - Criteria Pollutants (metric tons/yr) - HAPs (kilograms/yr) - Radioisotopes (curies/yr)	10) Linda Nass – are there any point source or fugitive source releases for criteria pollutants, HAPs, or radioisotopes during CX/mod. phase of the project?
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)	11) Greg Burbage – describe liquid emissions (locations, permits, rates, concentrations, contaminants) created during CX/mod. phase of the project?
Employment for each year (FTEs)	12) John Hammond – do you have employment numbers for the CX/mod. phase of the project? Maximum FTE's (Year/FTE): FY09/99, FY10/151., FY11/119, FY12/0, FY13/0, FY14/182, FY15/330, FY16/307, FY17/340., FY18/210, FY19/241, FY20/169, FY21/179 & FY22/76 Average FTE's (Year/FTE): FY09/83, FY10/99., FY11/75, FY12/0, FY13/0, FY14/90, FY15/263, FY16/281, FY17/231., FY18/161, FY19/169, FY20/132, FY21/128 & FY22/47
Shifts	13) John Hammond – do you have shifts information for the CX/mod. phase of the project? Day and night shifts will be required to achieve schedule completion dates.
Worker radiological exposure - total dose (person-rem)	14) Ben Morgan – is radiological exposure information during CX phase of the project available?
Number of exposed workers	15) John Hammond – can you estimate a number of workers exposed for the CX/mod. phase of the project? Average FTE's: FY09/83, FY10/99 (Note: The D&R was scheduled during FY09 & FY10. It is assumed that after D&R is completed that the sources will be removed and the work areas will be rolled back. Therefore, no radiological exposure is expected after the D&R phase is completed.

<table>
<tr><th>Information Requested</th><th>Response</th></tr>
<tr><td>Utilities needed
- Potable water (units/yr)
- Non-potable water (units/yr)
- Electricity (units)
- Gasoline (units/yr)
- Diesel Fuel (units/yr)</td><td>16) John Hammond – can you estimate in annual usage for the CX/mod. phase of the project of potable water, non-potable water, electricity, gasoline, and diesel fuel? (As provided by Rick Spaulding, CX Mngr).
<table>
<tr><th></th><th>FY09</th><th>FY10</th><th>FY11</th><th>FY12/13</th><th>FY14</th><th>FY15</th><th>FY16</th><th>FY17</th><th>FY18</th><th>FY19</th><th>FY20</th><th>FY21</th><th>FY22</th></tr>
<tr><td>Pot Water (gal)</td><td>0</td><td>0</td><td>0</td><td>0</td><td>500</td><td>500</td><td>500</td><td>500</td><td>500</td><td>500</td><td>500</td><td>500</td><td>500</td></tr>
<tr><td>Non-Pot (gal)</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1000</td><td>1000</td><td>1000</td><td>1000</td><td>1000</td><td>1000</td><td>1000</td><td>1000</td><td>1000</td></tr>
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</table>
NOTE: Minimal to no impact on existing electrical utilities during construction phase</td></tr>
<tr><td>Resources needed
- Concrete (units)

- Asphalt (units)
- Steel (units)
- Crushed stone (units)
- Sand & Gravel (units)
- Soil (units)
- Lumber (units)
- Chemicals (units)
- Gases (units)
- Other construction materials (units)</td><td>Data Call Response – 10/4/07 (concrete volumes)
Data Call Response – 10/25/07, file “CSA Outside PIDAS” (concrete volumes for fan house, sand filter and stack)

16a) John Hammond (or Rick Spaulding if delegated) – can you provide the construction phase demands for asphalt, steel, crushed stone, sand & gravel, soil, lumber, chemicals, gases, and other, as requested at left?</td></tr>
<tr><td>Waste generated (provide solid and liquid separately) (units/yr):
- TRU
- LLW
- MLLW
- Hazardous
- Non-Hazardous</td><td>Data Call Response – 10/25/07, file “Waste Study” (SK-DA-WM-0001) volumes not provided

16b) Betsy Westover – can you please provide construction phase waste generated for TRU, LLW, MLLW, Hazardous, Non-hazardous?</td></tr>
<tr><td>Operations</td><td></td></tr>
<tr><td>Description of Process including:
- Flowchart
- Throughput (units/yr)
- Number of cans filled per year</td><td>16c) Clayton Holloway – can you provide a Operations process description flowchart to me for SAIC?
Five 3013 cans per day Source: Data Call Response – 10/25/07, file “Preliminary Assumptions”
16d) Clayton Holloway – can you provide the number of cans filled per year during Operations of PuD?</td></tr>
<tr><td>Please provide:
- Number of DWPF canisters needed
- Additional DWPF canisters created</td><td>790 CIC units per Pu Disposition Alternatives Analysis (Y-AES-G-00001)
95 additional canisters per Pu Disposition Alternatives Analysis (Y-AES-G-00001)</td></tr>
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Information Requested	Response
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	17) Linda Nass – describe emissions released during operation of PuV for stack, stack height, stack diameter, exhaust velocity, temp, etc.? 18) Linda Nass – describe fugitive emissions released during operation of PuV, and dimensions of fugitive sources? 19) Linda Nass – describe emissions released during operation for PuV from emergency generators, boilers, else?
Air emissions - Criteria Pollutants (metric tons/yr) - HAPs (kilograms/yr) - Radioisotopes (curies/yr)	 19a) Linda Nass – can you provide Operations phase criteria pollutants released in metric tons per year? Data Call Response – 10/25/07, file "Emissions Calculation" Data Call Response – 10/25/07, file "Emissions Calculation"
Liquid effluents - Location(s) of outfall(s) - Rate(s) of discharge(s) (units/day) - Concentrations of contaminants (picocuries/liter or micrograms/liter)	20) Greg Burbage – describe liquid releases during PuV ops. (locations, rates, concentration of contaminants)?
Employment (FTEs)	34 (24 vit process operators plus 10 waste management) **Source: Data Call Response – 10/25/07, file "Preliminary Assumptions"**
Shifts	Operates 24 hrs/day; 7 days/week with 12 hr shifts **Source: Data Call Response – 10/25/07, file "Preliminary Assumptions"**
Employee radiological exposure - total dose (person-rem)	21) Ben Morgan – during operations do you know total dose for employee radiological exposure?
Number of exposed workers	22) Ben Morgan – during operations do you know the number of workers exposured?
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)	23) P.K. Hightower – do you know the POC for utilities? Please ask that they respond for this anticipated usage during operations phase of PuV.

Information Requested	Response
Resources needed - Metals (units/yr) - Frit (units/yr) - Ceramic precursors (units/yr) - Chemicals (units/yr) - Gases (units/yr) - other materials (units/yr)	24) P.K. Hightower – do you know the POC for resources? Please ask that they respond for this anticipated usage during operations phase of PuV.
Waste generated (solid or liquid) (units/yr): - TRU - LLW - MLLW - Hazardous - Non-Hazardous	**Source: Data Call Response – 10/25/07, file "Waste Study" (SK-DA-WM-0001)** 460 m3/yr 250 m3/yr 80 m3/yr 80 m3/yr 50 m3/yr No liquid waste expected.
Please provide any safety documentation (e.g., safety assessments, safety analysis reports) for these facilities.	25) Kevin Durrwachter – please provide safety doc.s (electronically)requested so that I may forward to SAIC.
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:	26) Kevin Durrwachter – please provide any accident scenarios in existing safety doc.s that must be changed for PuV ops. (please provide per below table criteria).
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	26) continued, Kevin Durrwachter

Information Requested	Response
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.	27) continued, Kevin Durrwachter. May require that you interview Dave Eisele.
Design basis earthquake frequency and intensity	28) continued Kevin Durrwachter
Earthquake frequency that would result in loss of structural integrity	29) continued Kevin Durrwachter
Other natural phenomena that would result in loss of structural integrity and their frequency	30) continued Kevin Durrwachter
Aircraft crash frequency	31) continued Kevin Durrwachter
Deactivation and Decommissioning	
General description of the D&D process and end state achieved after D&D	32) P.K. Hightower – assume that PuV processes will be removed at the end state of project need? Please confirm.

Immobilization Facility Information Request

(please provide numerical data in commonly reported units)

Information Requested	Response
Immobilization Facility	**Modification of K-Reactor Building for immobilization of up to 13 metric tons surplus plutonium using the glass can-in-canister approach**
General	
Schedule - Design - Construction or Modification - Operation - Deactivation and decommissioning	**Source: Data Call Response – 10/4/07** Design complete – 2009 Construction complete – 2013 Operations – 6 years ending in 2019 Deactivation and Decommissioning – Begins 2019
Description of facility including: - Building number - Latitude and Longitude - Elevation above NGVD (units) - Area (units) - Plot plan - Floorplan 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	 Old K-Reactor Building 1) Vernon O'Steen – can you provide a lat & longitude generally in front of KAC? 2) Vernon O'Steen – do you have elevation capability? 3) Vernon O'Steen – do you have acreage/hectares assessment capability? 4) Not applicable Data Call Response – 10/25/07, file "Vitrification System" and "Oxidation System" 5) Bruce Hewett – is there a document/plan/description that we can provide SAIC? ***DOE Orders along with SRS 7Q Security Manual Procedures identify the Facility Security Requirements. Security & Safeguard Features, to include DBT Upgrades, are controlled information.*** Data Call Response – 10/25/07, file "ICS and MCA" Data Call Response – 10/25/07, file "Fire Protection" Data Call Response – 10/25/07, file "Vitrification System" and "HVAC" 6) Greg Burbage – description to describe building sumps/pumps (Randy Sears) 7) Kevin Durrwachter – please provide document/information that prevents KAC criticality. Data Call Response – 10/25/07, file "Waste Management" and "Waste Study" (SK-DA-WM-0001)
Construction/modification	
Land disturbed for laydown (acres or hectares)	2 acres **Source: Data Call Response – 10/25/07, file "Site Work"**

Information Requested	Response
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)	Data Call Response – 10/4/07 & Data Call Response – 10/25/07, file "Waste Study" (SK-DA-WM-0001)
Describe type and quantity of air pollutant emitting equipment and frequency and duration of use.	Data Call Response – 10/25/07, file "Construction Equipment"
Describe type and quantity of noise producing equipment and frequency and duration of use.	Data Call Response – 10/25/07, file "Construction Equipment"
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	8) Linda Nass – describe, if applicable/quantifiable, emissions released during CX/mod. phase of project? ***A stack location or height has not been determined. A final determination has not been made. Emissions could go out the existing 105-K Reactor Main Stack or a new stack could be built or separate buildings could be built (each with their own stack/vent) outside of the 105-K Reactor Building. The operating 105-K Main Stack currently has a maximum airflow of 107,000 CFM. Stack height is 130 ft from ground level (75 ft above the structure) / Diameter of this stack is 16 ft / and exhaust air temperature is 78°F, exit velocity is 15 ft/sec. (The exit temperature could change with the introduction of the PuVit process depending upon which stack would be used. Air would need to be cooled prior to exiting the gloveboxes/Hepa filters.)*** 9) Linda Nass – describe, if applicable/quantifiable, fugitive emissions during CX/mod. phase of project? ***Fugitive emissions during the CX/mod phase of the project would be minimal. If seen, these would exit out the 105-K Reactor Main Stack (info provided above).***
Air emissions (point source and fugitive): - Criteria Pollutants (metric tons/yr) - HAPs (kilograms/yr) - Radioisotopes (curies/yr)	10) Linda Nass – are there any point source or fugitive source releases for criteria pollutants, HAPs, or radioisotopes during CX/mod. phase of the project? ***None. If any, they would be in the noise range. Work on HX removal, Bingham pump removal, etc would be done in a containment hut so potential emissions would be minimal. At the most an increase of 10% over current stack emissions may be seen; current emissions from the 105-K Reactor Main Stack were 4.92E-04 mrem/yr for CY07 (or 3.51E-02 Ci) seen mostly as tritium.***
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)	11) Greg Burbage – describe liquid emissions (locations, permits, rates, concentrations, contaminants) created during CX/mod. phase of the project?
Employment for each year (FTEs)	12) John Hammond – do you have employment numbers for the CX/mod. phase of the project? ***Maximum FTE's (Year/FTE): FY09/99, FY10/151., FY11/119, FY12/0, FY13/0, FY14/182, FY15/330, FY16/307, FY17/340., FY18/210, FY19/241, FY20/169, FY21/179 & FY22/76 Average FTE's (Year/FTE): FY09/83, FY10/99., FY11/75, FY12/0, FY13/0, FY14/90, FY15/263, FY16/281, FY17/231., FY18/161, FY19/169, FY20/132, FY21/128 & FY22/47***

<table>
<tr><th>Information Requested</th><th>Response</th></tr>
<tr><td>Shifts</td><td>13) John Hammond – do you have shifts information for the CX/mod. phase of the project? Day and night shifts will be required to achieve schedule completion dates.</td></tr>
<tr><td>Worker radiological exposure - total dose (person-rem)</td><td>14) Ben Morgan – is radiological exposure information during CX phase of the project available?</td></tr>
<tr><td>Number of exposed workers</td><td>15) John Hammond – can you estimate a number of workers exposed for the CX/mod. phase of the project? Average FTE’s: FY09/83, FY10/99 (Note: The D&R was scheduled during FY09 & FY10. It is assumed that after D&R is completed that the sources will be removed and the work areas will be rolled back. Therefore, no radiological exposure is expected after the D&R phase is completed.</td></tr>
<tr><td>Utilities needed
- Potable water (units/yr)
- Non-potable water (units/yr)
- Electricity (units)
- Gasoline (units/yr)
- Diesel Fuel (units/yr)</td><td>16) John Hammond – can you estimate in annual usage for the CX/mod. phase of the project of potable water, non-potable water, electricity, gasoline, and diesel fuel? (As provided by Rick Spaulding, CX Mngr).
<table>
<tr><th></th><th>FY09</th><th>FY10</th><th>FY11</th><th>FY12/13</th><th>FY14</th><th>FY15</th><th>FY16</th><th>FY17</th><th>FY18</th><th>FY19</th><th>FY20</th><th>FY21</th><th>FY22</th></tr>
<tr><td>Pot Water (gal)</td><td>0</td><td>0</td><td>0</td><td>0</td><td>500</td><td>500</td><td>500</td><td>500</td><td>500</td><td>500</td><td>500</td><td>500</td><td>500</td></tr>
<tr><td>Non-Pot (gal)</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1000</td><td>1000</td><td>1000</td><td>1000</td><td>1000</td><td>1000</td><td>1000</td><td>1000</td><td>1000</td></tr>
<tr><td>Gas (gal)</td><td>200</td><td>200</td><td>200</td><td>0</td><td>200</td><td>1000</td><td>1000</td><td>1000</td><td>500</td><td>500</td><td>500</td><td>300</td><td>200</td></tr>
<tr><td>Diesel (gal)</td><td>400</td><td>400</td><td>400</td><td>0</td><td>400</td><td>5000</td><td>5000</td><td>5000</td><td>3000</td><td>2000</td><td>1000</td><td>1000</td><td>400</td></tr>
</table>
NOTE: Minimal to no impact on existing electrical utilities during construction phase</td></tr>
<tr><td>Resources needed
- Concrete (units)

- Asphalt (units)
- Steel (units)
- Crushed stone (units)
- Sand & Gravel (units)
- Soil (units)
- Lumber (units)
- Chemicals (units)
- Gases (units)
- Other construction materials (units)</td><td>Data Call Response – 10/4/07 (concrete volumes)
Data Call Response – 10/25/07, file “CSA Outside PIDAS” (concrete volumes for fan house, sand filter and stack)

16a) John Hammond (or Rick Spaulding if delegated) – can you provide the construction phase demands for asphalt, steel, crushed stone, sand & gravel, soil, lumber, chemicals, gases, and other, as requested at left?
<table>
<tr><th></th><th>FY09</th><th>FY10</th><th>FY11</th><th>FY12/13</th><th>FY14</th><th>FY15</th><th>FY16</th><th>FY17</th><th>FY18</th><th>FY19</th><th>FY20</th><th>FY21</th><th>FY22</th></tr>
<tr><td>ASPHALT (TONS)</td><td>0</td><td>0</td><td>200</td><td>0</td><td>0</td><td>0</td><td>500</td><td>100</td><td>100</td><td>50</td><td>50</td><td>0</td><td>0</td></tr>
<tr><td>STEEL (TONS)</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1000</td><td>1000</td><td>200</td><td>200</td><td>100</td><td>50</td><td>25</td><td>0</td></tr>
<tr><td>CRUSHED STONE (TONS)</td><td>200</td><td>200</td><td>200</td><td>0</td><td>200</td><td>200</td><td>200</td><td>100</td><td>100</td><td>100</td><td>50</td><td>0</td><td>0</td></tr>
<tr><td>SAND&GRAVEL (TONS)</td><td>0</td><td>0</td><td>0</td><td>0</td><td>100</td><td>100</td><td>100</td><td>50</td><td>50</td><td>50</td><td>50</td><td>0</td><td>0</td></tr>
<tr><td>SOIL (CY)</td><td>0</td><td>0</td><td>0</td><td>0</td><td>7000</td><td>7000</td><td>8000</td><td>0</td><td>0</td><td>500</td><td>500</td><td>0</td><td>0</td></tr>
<tr><td>LUMBER (BOARD FEET)</td><td>2000</td><td>2000</td><td>2000</td><td>0</td><td>5000</td><td>5000</td><td>5000</td><td>2000</td><td>1000</td><td>1000</td><td>1000</td><td>500</td><td>0</td></tr>
</table>
NOTE: Minimal to no impact with chemicals, gases and other construction materials.</td></tr>
</table>

Information Requested	Response
Waste generated (provide solid and liquid separately) (units/yr): - TRU - LLW - MLLW - Hazardous - Non-Hazardous	Data Call Response – 10/25/07, file "Waste Study" (SK-DA-WM-0001) volumes not provided 16b) Betsy Westover – can you please provide construction phase waste generated for TRU, LLW, MLLW, Hazardous, Non-hazardous?
Operations	
Description of Process including: - Flowchart - Throughput (units/yr) - Number of cans filled per year	16c) Clayton Holloway – can you provide a Operations process description flowchart to me for SAIC? Five 3013 cans per day **Source: Data Call Response – 10/25/07, file "Preliminary Assumptions"** 16d) Clayton Holloway – can you provide the number of cans filled per year during Operations of PuD?
Please provide: - Number of DWPF canisters needed - Additional DWPF canisters created	790 CIC units per *Pu Disposition Alternatives Analysis* (Y-AES-G-00001) 95 additional canisters per *Pu Disposition Alternatives Analysis* (Y-AES-G-00001)
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	17) Linda Nass – describe emissions released during operation of PuV for stack, stack height, stack diameter, exhaust velocity, temp, etc.? ***A determination had not been made whether to use the current (105-K Reactor Main) stack, to build one for the entire vitrification process or to have separate stacks associated with various buildings designed/built outside of the 105-R Reactor building. However, in determining the emissions in mrem/yr, the dose release factors which would provide the largest emissions were utilized; these were the factors for zero elevation. Information for the current operating stack is provided below:*** ***Current stack dimensions (note: the stack height was reduced by 70 ft)*** ***Height: 130 ft above ground (75 ft above structure)*** ***Diameter: 16 ft*** ***Exit Temp: 78°F*** ***Exit Velocity: 15 ft/sec*** ***UTM: N – 3,674,754.903; E – 438,113.483*** ***PuV Project:*** ***The furnace exhaust gas flow rate was used in these release calculations; it assumed an exit velocity of 1 CFM (or 28,316.74 cc/min).*** 18) Linda Nass – describe fugitive emissions released during operation of PuV, and dimensions of fugitive sources? ***Opening/emptying , milling/mixing, metal to oxide conversion, and vitrification will be performed inside gloveboxes. There should be no fugitive emissions; if otherwise, emissions would be minimal.*** 19) Linda Nass – describe emissions released during operation for PuV from emergency generators, boilers, else? ***Emissions from emergency equipment should be minimal. At present it is unknown whether there will be or how many and what size diesel generators would available for emergency use.***

<table>
<tr><th>Information Requested</th><th>Response</th></tr>
<tr><td>Air emissions
- Criteria Pollutants (metric tons/yr)
- HAPs (kilograms/yr)
- Radioisotopes (curies/yr)</td><td>19a) Linda Nass – can you provide Operations phase criteria pollutants released in metric tons per year?
Other than PM, there are no ‘Criteria’ pollutants.
HAPS:
Ni/NiO = 6.337E-05 kg/yr
Radionuclides =
<table><tr><th>Nuclides</th><th>Curies</th></tr><tr><td>Np^{237}</td><td>8.531E-08</td></tr><tr><td>Pu^{238}</td><td>4.749E-06</td></tr><tr><td>Pu^{239}</td><td>5.081E-07</td></tr><tr><td>Pu^{240}</td><td>5.683E-07</td></tr><tr><td>Pu^{241}</td><td>1.427E-05</td></tr><tr><td>Pu^{242}</td><td>2.757E-09</td></tr><tr><td>Am^{241}</td><td>6.777E-05</td></tr><tr><td>Total</td><td>8.795E-05</td></tr></table>
PSD pollutants: Be/BeO, Fluorides, and PM/PM-10 (all are well below trigger levels)
SCDHEC Std 8 (Toxic Pollutants): HCl, Be/BeO, Ni/NiO
Data Call Response – 10/25/07, file “Emissions Calculation”
Data Call Response – 10/25/07, file “Emissions Calculation”</td></tr>
<tr><td>Liquid effluents
- Location(s) of outfall(s)
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Information Requested	Response
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)	23) P.K. Hightower – do you know the POC for utilities? Please ask that they respond for this anticipated usage during operations phase of PuV.
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Please provide any safety documentation (e.g., safety assessments, safety analysis reports) for these facilities.	25) Kevin Durrwachter – please provide safety doc.s (electronically)requested so that I may forward to SAIC.
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:	26) Kevin Durrwachter – please provide any accident scenarios in existing safety doc.s that must be changed for PuV ops. (please provide per below table criteria).

Information Requested	Response
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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.	27) continued, Kevin Durrwachter. May require that you interview Dave Eisele.
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Earthquake frequency that would result in loss of structural integrity	29) continued Kevin Durrwachter
Other natural phenomena that would result in loss of structural integrity and their frequency	30) continued Kevin Durrwachter
Aircraft crash frequency	31) continued Kevin Durrwachter
Deactivation and Decommissioning	
General description of the D&D process and end state achieved after D&D	32) P.K. Hightower – assume that PuV processes will be removed at the end state of project need? Please confirm.