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Disposition
H-Canyon/DWPF Information Request
(please provide numerical data in commonly reported units)

Information Requested	Process up to 6 MT of plutonium through H-Canyon/HB-Line and DWPF (No Immobilization) Alternative	
	H-Canyon/HB-Line (including labs)	HLW
General		
Schedule - Design - Construction or Modification - Operation - Deactivation and decommissioning	Dissolution of up to 6 MT of plutonium utilizing H-Canyon and HB-Line is expected to be performed using existing facilities with the addition of some new equipment. No change in H-Canyon or HB-Line facility footprints, new equipment will be installed in existing cells or gloveboxes. H-Canyon will change out or reconfigure some tanks and/or piping to increase plutonium storage volume/capacity. HB-Line will reactivate scrap recovery south line and change out some unused equipment and add additional equipment to implement vacuum salt distillation and sodium peroxide fusion to minimized equipment corrosion and increase dissolving throughput rates. As indicated in the latest Plutonium Disposition Study **(Y-AES-G-00009, Y-AES-K-00005-both OUO) ,** a plutonium processing rate of roughly 350 kg/yr in HB-Line will require the general processing schedule for the 6 MT option to operate until approximately 2022 to complete the HB-Line portion of the 6 MT scope. H-Canyon will also complete their portion of the 6 MT with co-processing of SNF prior by 2022.	H-Canyon/HB-Line mission currently involves dissolution, storage, and transfer to DWPF of surplus plutonium. Disposition of up to 6 MT of surplus plutonium into DWPF sludge batches is expected to be performed utilizing the same DWPF equipment. Transfer of up to 6 MT of plutonium will likely require the addition of a transfer bypass line around H Diversion Box # 7 (HDB-7) in the H-Tank Farm due to the volume of sludge batch preparation activity transfers through HDB-7. H-Canyon has already developed plans to increase plutonium storage/discard concentration and neutralization/transfer tank volumes. This may simplify the plutonium transfer strategy, and could preclude installing a dedicated transfer line bypassing HDB-7. Completion of H-Canyon/HB-Line processing by 2022 aligns with the current DWPF sludge processing completion of 2024.

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Information Requested	Process up to 6 MT of plutonium through H-Canyon/HB-Line and DWPF (No Immobilization) Alternative	
	H-Canyon/HB-Line (including labs)	**HLW**
Description of modifications to facility including: - Latitude and Longitude - Elevation above NGVD (units) - Floor space used (units) - Plot plan - 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	H-Canyon and HB-Line missions currently involve dissolution, storage, and transfer to DWPF of surplus plutonium. Description of H-Canyon facility is provided in Documented Safety Analysis (DSA), WSRC-SA-2001-00008, Revision 19 available via Document Control. A new upgrade to the H-Canyon DSA (S-DSA-H-00001, Revision 0, **UCNI)** has been approved, but is awaiting implementation. Description of HB-Line facility is provided in Documented Safety Analysis, WSRC-SA-2001-00009, Revision 8 (**UCNI**) available via Document Control. H-Canyon will change out or reconfigure some tanks and/or piping to increase plutonium storage volume/capacity. HB-Line will reactivate scrap recovery south line and change out some unused equipment and add additional equipment to implement vacuum salt distillation and sodium peroxide fusion to minimized equipment corrosion and increase dissolving throughput rates. These equipment and process changes will utilize the same facility confinement systems and are not expected to increase the annual air and water releases or release potential. However, the total quantity of airborne and water borne contaminants may increase for the 6 MT program as compared to a 2 MT program based on the additional years required to complete the campaign. H-Canyon and HB-Line missions currently involve dissolution, storage, and transfer to DWPF of surplus plutonium utilizing neutron poisons such as gadolinium for criticality control. To accomplish the disposition of 6 MT of surplus plutonium, H-Canyon/HB-Line have developed plans to process, store, and transfer plutonium at higher concentrations utilizing gadolinium neutron poisons. No changes would be expected to the existing facility, security features, or systems due to dissolution of additional surplus plutonium. Features and modifications to address the disposition of unirradiated Fast Flux Test Facility (FFTF) or similar fuel may require fuel disassembly and dissolution in H-Canyon. Another option may require disassembly in H-Canyon and transfer to K-Area for processing to disposition to WIPP. This option may require interim storage capabilities, yet to be identified, allowing storage until K-Area WIPP processing capabilities are completed. A third option would require fuel disassembly in K-Area, with respective K-Area modifications to support disassembly, and transport to H-Area for dissolution in H-Canyon. No decision on FFTF disposition option	H-Canyon and HB-Line missions currently involve dissolution, storage, and transfer to DWPF of surplus plutonium. Description of the DWPF facility is provided in Safety Analysis Report, WSRC-SA-6, Revision 28 available via Document Control. Description of Liquid Waste Tank Farm facilities are provided in Documented Safety Analysis, WSRC-SA-2002-00007, Revision 11 available via Document Control. Transfer of up to 6 MT of plutonium will likely require the addition of a transfer bypass line around H Diversion Box # 7 (HDB-7) in the H-Tank Farm due to the volume of sludge batch preparation activity transfers through HDB-7. H-Canyon has already developed plans to increase plutonium storage/discard concentration and neutralization/transfer tank volumes. This may simplify the plutonium transfer strategy, and could preclude installing a dedicated transfer line bypassing HDB-7. Disposition of up to 6 MT of surplus plutonium into DWPF sludge batches will require increasing the fissile mass loading limit in DWPF waste glass to approximately 6000 grams/cubic meter. To achieve these mass values, DWPF is pursuing crediting gadolinium as a neutron poison for processing and canister loading. Liquid Waste already credit gadolinium for sludge batch preparation. No additional new features have been identified to accomplish this plutonium mission in the Tank Farm or DWPF.

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Information Requested	Process up to 6 MT of plutonium through H-Canyon/HB-Line and DWPF (No Immobilization) Alternative	
	H-Canyon/HB-Line (including labs)	HLW
Construction/modification		
Land disturbed (acres or hectares)	N/A. Dissolution of additional material in H-Canyon is expected to be performed using existing facilities within the facility footprint and utilizing essentially the same process with a few enhancements. No land disturbances are expected.	Installation of a transfer line bypassing HDB-7, if required and buried, may constitute a land disturbance.
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)	To support current H-Canyon and HB-Line plutonium mission campaigns, a large bi-cell tank is currently planned to be installed for enhanced plutonium storage capability. An additional receipt tank (for HBL dissolved Pu, like Tank 11.1) will be utilized and a larger neutralization and transfer tank to H-Area Tank Farm will be employed. To support the 6 MT mission, HB-Line will reactivate scrap recovery south line and change out some unused equipment and add additional equipment to implement vacuum salt distillation and sodium peroxide fusion to minimized equipment corrosion and increase dissolving throughput rates utilizing existing gloveboxes.	Transfer of up to 6 MT of plutonium will likely require the addition of a transfer bypass line around H Diversion Box # 7 (HDB-7) in the H-Tank Farm due to the volume of sludge batch preparation activity transfers through HDB-7. H-Canyon has already developed plans to increase plutonium storage/discard concentration and neutralization/transfer tank volumes. This may simplify the plutonium transfer strategy, and could preclude installing a dedicated transfer line bypassing HDB-7.
Describe type and quantity of air pollutant emitting equipment and frequency and duration of use.	H-Canyon / HB-Line missions currently involve dissolution, storage, and transfer to DWPF of surplus plutonium. No changes are expected in the type and quantity of air pollutant emitting equipment and frequency and duration of use due to dissolution of surplus plutonium.	H-Canyon / HB-Line missions currently involve dissolution, storage, and transfer to DWPF of surplus plutonium. No changes are expected in the type and quantity of air pollutant emitting equipment and frequency and duration of use due to dissolution of surplus plutonium.
Describe type and quantity of noise producing equipment and frequency and duration of use.	H-Canyon / HB-Line missions currently involve dissolution, storage, and transfer to DWPF of surplus plutonium. No changes are expected in the type and quantity of noise producing equipment and frequency and duration of use.	H-Canyon / HB-Line missions currently involve dissolution, storage, and transfer to DWPF of surplus plutonium. No changes are expected in the type and quantity of noise producing equipment and frequency and duration of use.
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	See Operations Section below.	See Operations Section below.

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Information Requested	Process up to 6 MT of plutonium through H-Canyon/HB-Line and DWPF (No Immobilization) Alternative	
	H-Canyon/HB-Line (including labs)	HLW
Air emissions (point source and fugitive): - Criteria Pollutants (metric tons/yr) - HAPs (kilograms/yr) - Radioisotopes (curies/yr)	See Operations Section below.	See Operations Section below.
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)	See Operations Section below.	See Operations Section below.
Employment for each year (FTEs)	H-Canyon /HB-Line missions currently involve dissolution, storage, and transfer to DWPF of surplus plutonium. No changes expected in facility staffing levels (FTEs) due to processing of additional surplus plutonium.	H-Canyon /HB-Line missions currently involve dissolution, storage, and transfer to DWPF of surplus plutonium. No changes expected in facility staffing levels (FTEs) due to processing of additional surplus plutonium.
Shifts	No changes expected in facility shift schedule due to processing of surplus Plutonium. Facility currently works a 4-shift rotation schedule to provide 24-hour coverage, 365 days per year.	No changes expected in facility shift schedule due to processing of surplus Plutonium. Facility currently works a 4-shift rotation schedule to provide 24-hour coverage, 365 days per year.
Worker radiological exposure - total dose (person-rem)	See Operations Section below.	See Operations Section below.
Number of exposed workers	See Operations Section below.	See Operations Section below.
Utilities needed - Potable water (units/yr) - Non-potable water (units/yr) - Electricity (units) - Gasoline (units/yr) - Diesel Fuel (units/yr)	See Operations Section below.	See Operations Section below.
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)	See Operations Section below.	See Operations Section below.

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Information Requested	Process up to 6 MT of plutonium through H-Canyon/HB-Line and DWPF (No Immobilization) Alternative	
	H-Canyon/HB-Line (including labs)	**HLW**
Waste generated (provide solid and liquid separately) (units/yr): - TRU - LLW - MLLW - Hazardous - Non-Hazardous	See Operations Section below.	See Operations Section below.
Operations	Descriptions of H-Canyon operations are provided in Documented Safety Analysis, WSRC-SA-2001-00008, Revision 19 available via Document Control. Descriptions of HB-Line operations are provided in Documented Safety Analysis, WSRC-SA-2001-00009, Revision 8 (UCNI) available via Document Control.	Descriptions of DWPF operations are provided in Safety Analysis Report, WSRC-SA-6, Revision 28 available via Document Control. Descriptions of Liquid Waste Tank Farm operations are provided in Documented Safety Analysis, WSRC-SA-2002-00007, Revision 11 available via Document Control.
Land area occupied by the completed facility (acres or hectares)	No change to the H-Canyon/HB-Line footprint.	No change to the current Tank Farm footprint.
Description of Process including: - Flowchart - Throughput (units/yr) - Number of DWPF canisters needed	HB-Line estimated dissolving throughput rate starting in 2013, with South Line operational is estimated to be approximately 350 kg plutonium per year. H-Canyon throughput differs depending on the material and dissolver used to dissolve it and simultaneous co-processing of uranium containing UNF. Disposition of up to 6 MT of plutonium without crediting gadolinium as a neutron poison in DWPF would generate an estimated 48 additional DWPF waste glass canisters. IF gadolinium is credited, then the estimate of additional canisters would be approximately 20 DWPF waste glass canisters.	DWPF nominal throughput rates are given in the SRS Life-cycle Liquid Waste Disposition System Plan, SRR-LWP-2009-00001, Revision 15. Disposition of up to 6 MT of plutonium without crediting gadolinium as a neutron poison in DWPF would generate an estimated 48 additional DWPF waste glass canisters. IF gadolinium is credited, then the estimate of additional canisters would be approximately 20 DWPF waste glass canisters.
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	No changes expected in emission release parameters. Dissolution, storage and transfer of surplus Plutonium is currently being performed under existing permits.	No changes expected in emission release parameters. Dissolution, storage and transfer of surplus Plutonium is currently being performed under existing permits.

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Comment: Not sure this is true. If we had to add iron to achieve the needed ratio for criticality control, I believe this would be significant to disposition 6 MT.

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Information Requested	Process up to 6 MT of plutonium through H-Canyon/HB-Line and DWPF (No Immobilization) Alternative	
	H-Canyon/HB-Line (including labs)	HLW
Air emissions - Criteria Pollutants (metric tons/yr) - HAPs (kilograms/yr) - Radioisotopes (curies/yr)	No changes expected in air emissions for H-canyon and HB-Line. Dissolution of surplus Plutonium currently being performed under existing permits. If 3rd dissolver is installed in H-Canyon the total rate of emissions would be expected to increase for the facility but would be expected to remain well below the current emission limits in the existing permits. Radioisotope emissions from plutonium dissolution, storage and transfer are minimal compared to overall H-Canyon emission rates. Note that the addition of a 3rd dissolver is not tied to processing of surplus plutonium. Non-RAD Emissions The modeled non-rad emissions rates (lbs/hr) for 291-H Stack (SRS Title V Permit Source ID HSP0002) are listed below: TSP (Total suspended particulate) - 0.0740 PM_{10} (Particulate Matter, aerosols or fine particules, $\leq$ 10 µm) - 0.0740 SO_2 (Sulfur Dioxide) - 0.0 NO_x(Oxides of Nitrogen) - 33.58 CO (Carbon Monoxide) - 0.0 The annualized rates are determined by multiplying by 8760 hrs/yr. However, the lb/hr. emission rates above are regulatory limits. Diesel Generators The 254-19 H 800 kW diesel generators are denoted as H019 and H020. The opacity limit is 20% for both diesel generators. The annual fuel consumption rate for each diesel generator is 287,220 gallons/year. The 900 kW diesel generators are denoted as H021 and 12GH. The annual fuel consumption rate for each diesel generator is 16900 gallons/year with an opacity limit of 20%. The 221-H 1000 kW diesel generator has an annual fuel consumption limit of 18, 250 gallons/year with an opacity limit of 40%. RAD Emissions The radiological emissions effective dose equivalent (EDE) was extracted from the "SRS Radioactive Release Report". The 291-H Isokinetic Sampling System dose rate for 2007 was 2.40E-03 mrem. Currently, H Canyon is a PIC 2 source (Potential EDE > 0.1 mrem, Actual EDE $\leq$ 0.01 mrem). This means that the current sampling configuration (continuous with offline analysis) is acceptable (i.e., grandfathered per old ANSI N13.1).	No changes expected in air emissions. Dissolution of surplus Plutonium currently being performed under existing permits.

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Information Requested	Process up to 6 MT of plutonium through H-Canyon/HB-Line and DWPF (No Immobilization) Alternative	
	H-Canyon/HB-Line (including labs)	HLW
Liquid effluents - Location(s) of outfall(s) - Rate(s) of discharge(s) (units/day) - Concentrations of contaminants (picocuries/liter or micrograms/liter)	No changes expected in liquid effluents being discharged for H-Canyon and HB-Line. Dissolution, storage and transfer of surplus Plutonium is currently being performed under existing permits. If 3rd dissolver is installed in H-Canyon the total rate of emissions would not be expected to increase for the facility and would be expected to remain well below the current emission limits in the existing permits. Liquid effluents do not contain solutions from plutonium processing. Cooling water, which is in contact with vessels used for plutonium processing via cooling coils, does not contain plutonium materials unless a coil failure occurs. In those conditions, the failure is detected and cooling water diverted from the outfall prior to release. Note that the addition of a 3rd dissolver is not tied to processing of surplus plutonium.	No changes expected in liquid effluents being discharged. Dissolution, storage and transfer of surplus Plutonium is currently being performed under existing permits
Employment (FTEs)	No changes expected in facility staffing levels (FTEs) due to processing of surplus plutonium. H-Canyon/HB-Line (HMD) staffing is at approximately 600 total FTEs (including support organizations approximately 1,000 FTEs) in FY10. HB-Line staffing is essentially assigned to surplus Pu processing exclusively, where as H-Canyon staffing is required to support UNF processing activities with incidental plutonium mission duties. No additional staffing is anticipated to support the 6 MT plutonium disposition mission. Current staffing levels in H-Canyon are sufficient to support simultaneous UNF and Pu operations with no staffing changes expected to support operation of a 3rd dissolver if needed.	No changes expected in DWPF or Tank Farm facility staffing levels (FTEs) due to processing of surplus plutonium. No staffing would be expected to be assigned to surplus Pu processing exclusively. Staffing would support full suite of missions, including plutonium activities along with legacy sludge disposition mission.
Shifts	No changes expected in facility shift schedule due to processing of surplus Plutonium. Facility currently works a 4-shift rotation schedule to provide 24-hour coverage, 365 days per year.	No changes expected in facility shift schedule due to processing of surplus Plutonium. Facility currently works a 4-shift rotation schedule to provide 24-hour coverage, 365 days per year.

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Information Requested	Process up to 6 MT of plutonium through H-Canyon/HB-Line and DWPF (No Immobilization) Alternative	
	H-Canyon/HB-Line (including labs)	HLW
Employee radiological exposure - total dose (person-rem)	No changes expected in worker radiological exposure due to processing of surplus Plutonium. H-Canyon missions currently involve dissolution, storage, and transfer to DWPF of surplus plutonium and controls are in place for controlling personnel total dose. Projected doses are estimated for each material type prior to start of campaign. As described above, there is no data on projected future doses. Doses are estimated prior to each campaign by material type since these vary. For PuBe material which is being processed at this time, the projected dose was documented in M&O-MDO-2007-00340, rev 1, dated August 13, 2007 This document can be provided but does not reflect doses for future Pu disposition material. Total dose for PuBe material was conservatively estimated at 728 mrem total dose to all fissile handlers involved for approximately 0.05 MT. The future dose could be estimated at 16 Rem/MT based on PuBe material, however, this dose is highly dependent on the material included with the plutonium. Typical doses will run lower than projected values. Dose values are checked routinely and if the projection is not within +/- 25% of the estimated dose, the discrepancy is reviewed by our site ALARA committee.	No changes expected in worker radiological exposure due to processing of surplus Plutonium. H-Canyon missions currently involve dissolution, storage, and transfer to DWPF of surplus plutonium and controls are in place for controlling personnel total dose. Projected doses are estimated for each material type prior to start of campaign.

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Information Requested	Process up to 6 MT of plutonium through H-Canyon/HB-Line and DWPF (No Immobilization) Alternative	
	H-Canyon/HB-Line (including labs)	HLW
Number of exposed workers	No changes expected in number of exposed workers due to processing of surplus Plutonium. Existing qualified fissile material handlers will be used as needed to process material. Dose estimates as described in document above involved a maximum of 3 workers at a time handling the material. Since the facility operates 24/7, the pool of workers is larger than 3. Current facility watchbill shows 9 qualified material handlers and 37 fuel receiving operators. Both positions are qualified to handle surplus plutonium material for processing. Facility workers are not assigned full time to material handling positions but rather have this function in addition to other responsibilities such as building operator or crane operator. Workers are assigned to specific job assignments on a daily basis depending on overall facility work and priorities. As stated previously, staffing levels would not be expected to increase due to Pu processing. This number could increase or decrease as facility needs dictate. Given the dose above, the dose/worker would exceed the SRS annual guidelines, therefore either the doses would change or the number of qualified workers would be increased. Note that actual worker exposure is monitored and tracked such that individual doses would be known on a routine basis to not exceed any guidelines.	No changes expected in number of exposed workers due to processing of surplus Plutonium. Existing qualified fissile material handlers will be used as needed to process material.

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Information Requested	Process up to 6 MT of plutonium through H-Canyon/HB-Line and DWPF (No Immobilization) Alternative	
	H-Canyon/HB-Line (including labs)	HLW
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 expected in utilities needed due to processing of additional surplus Plutonium. Facility use of utilities is not expected to change overall due to dissolution of additional surplus Plutonium. Operation of balance of plant requires use of utilities. Additional steam expected to facilitate the dissolution process. Steam use estimate 6,000,000 pounds of steam per MT surplus plutonium based on 5,000 pounds per hour during dissolution. Utility estimates are provided monthly by the site Utilities Department and. These estimates do not call out specific utility costs for Pu missions but rather a total facility cost. As described above, the only significant utility cost associated specifically with Pu missions would be the steam used for dissolution and this value is still less than 3% of the total steam usage. The annual forecast for utilities is as follows and would be expected to remain approximately the same for the duration of the surplus Pu processing window. Note: These projections are for both H-Canyon and HB-Line (NMD). The steam estimate below would include the 6,000 klbs for Pu dissolution. Electricity Mwhs 23,433 Steam Klbs 208,166 Domestic Water Kgals 34,115 Sanitary Water Kgals 34,114	No changes expected in utilities needed due to processing of additional surplus Plutonium. Facility use of utilities is not expected to change overall due to dissolution of additional surplus Plutonium. Operation of balance of plant requires use of utilities. Additional steam expected to facilitate the dissolution process. Steam use estimate 6,000,000 pounds of steam per MT surplus plutonium based on 5,000 pounds per hour during dissolution.

Comment: Not sure this applies to HLW.

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Information Requested	Process up to 6 MT of plutonium through H-Canyon/HB-Line and DWPF (No Immobilization) Alternative	
	H-Canyon/HB-Line (including labs)	HLW
Resources needed - Metals (units/yr) - Chemicals (units/yr) - Gases (units/yr) - other materials (units/yr)	No significant changes expected in overall resources needed due to processing of additional surplus plutonium except as noted below. Minimal physical modifications needed utilizing metals and construction materials. Additional chemicals expected to facilitate the dissolution of additional surplus Plutonium and discard to DWPF. Estimate of 600,000 pounds of acidified water; 16,000 pounds of gadolinium nitrate crystals; 8,000 pounds of Potassium Fluoride crystals; 1,000,000 pounds of 50% by weight nitric acid, 1,000,000 pounds of 50% by weight sodium hydroxide, 34,000 L of 64 wt% nitric acid; 9000 L of 34% Aluminum Nitrate solution per MT of Plutonium. The overall facility budget for chemicals is not broken down to that level for individual chemicals. Note that this projection will include all chemicals projected/budgeted. The estimate above for chemical usage attributed to processing of surplus Pu is based on existing Pu processing flowsheets. There is not a specific document created for this projection but only an estimate based on existing flowsheets. As states above, the overall chemical usage and resources needed would not be expected to change significantly over current operations.	No significant changes expected in overall chemical, gases, and general resources needed due to processing of additional surplus plutonium in Tank Farm and DWPF. Construction materials needed to install a dedicated HDB-7 bypass transfer line from H-Canyon to Tank Farm have not been evaluated to date.

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Information Requested	Process up to 6 MT of plutonium through H-Canyon/HB-Line and DWPF (No Immobilization) Alternative	
	H-Canyon/HB-Line (including labs)	HLW
Waste generated (solid or liquid) (units/yr): - TRU - Mixed TRU - LLW - MLLW - Hazardous - Non-Hazardous	No changes expected in the generation of TRU, LLW, MLLW, Hazardous or non-Hazardous waste due to processing of additional surplus plutonium. Discard of Pu solutions as feed to DWPF expected to be considered Mixed TRU and considered hazardous based on final pH of solution. Solution generated estimated as 75,000 gallons of mixed TRU per MT of Plutonium based on 4 g/l plutonium in material transferred to DWPF. With plutonium solutions transferred to DWPF, no changes are expected in HLW generated. Current H-Canyon solid waste forecast LLW 1155 m3/yr, MLLW 2 m3/yr, TRU 12 m3/year. Hazardous waste is minimal/year. Non-hazardous (sanitary) waste is not currently tracked but not expected to change with surplus plutonium mission. Pu discards from H-Canyon to DWPF are directed to tanks which feed DWPF (typically tank 51) and are not associated with feed to Saltstone. This is controlled by physical configuration changes, Waste Compliance Plans/Waste Acceptance Criteria, etc. The tank farm may or may not mix additional HLW material with the Pu solutions prior to feeding to DWPF. Typically, the Pu solutions are mixed with additional HLW to make a sludge batch for feed to DWPF. As an estimate, assume minimal or 0 m3/year hazardous waste. For non-hazardous (sanitary waste) assume 200,000 m3/year. Solid Waste Forecasts are per the SRS Solid Waste integrated Forecasting Tool (SWIFT) database maintained on shrine/"swift"/quick search. Therefore, there is not a separate document which contains solid waste forecast data. Through 2022, HB-Line solid waste forecast is estimated LLW 200 m3/yr, MLLW 0.4 m3/yr, and TRU 75 m3/yr.	No changes expected in the generation of the TRU, LLW, MLLW, Hazardous or non-Hazardous waste due to processing of additional surplus plutonium in Tank Farm and DWPF.
Please provide any safety documentation (e.g., safety assessments, safety analysis reports) for this facility.	H-Canyon Documented Safety Analysis Report available via DCC (WSRC-SA-2001-00008, revision 19). HB-Line facility is provided in Documented Safety Analysis, WSRC-SA-2001-00009, Revision 8 (UCNI) available via Document Control.	DWPF facility Safety Analysis Report, WSRC-SA-6, Revision 28 available via Document Control. Liquid Waste Tank Farm Documented Safety Analysis, WSRC-SA-2002-00007, Revision 11 available via Document Control.

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Information Requested	Process up to 6 MT of plutonium through H-Canyon/HB-Line and DWPF (No Immobilization) Alternative	
	H-Canyon/HB-Line (including labs)	**HLW**
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 expected to existing H-Canyon and HB-Line safety documents in order to dissolve surplus plutonium. Existing DSA accidents cover dissolution, storage and transfer of plutonium solutions. However, the installation of additional plutonium storage volume at increased concentration (~4 g/l), vacuum salt distillation, and sodium peroxide fusion have yet to be evaluated and the list of accident scenarios updated (if necessary).	No changes expected to existing DWPF and Tank Farm safety documents in order to dissolve surplus plutonium. Existing safety analysis accidents cover the transfer of plutonium solutions and processing in DWPF to waste glass.
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	No significant changes expected. Existing H-Canyon DSA is written to cover dissolution, storage and transfer of plutonium solutions to tank Farm and DWPF.	No changes expected. Existing DWPF and Tank Farm safety analysis documentation written to cover transfer of plutonium solutions from H-Canyon to DWPF.
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.	H-Canyon currently dissolves, stores and transfers surplus plutonium to DWPF. Existing facility DSA contains listing of chemicals, quantities, vessels and sizes, and Material at Risk. No changes are expected to chemicals and concentrations, and the majority of the vessels used. A large bi-cell tank is currently planned to be installed for enhanced plutonium storage capability. An additional HB-Line receipt tank (like Tank 11.1) will be utilized and a larger neutralization and transfer tank to H-Area Tank Farm will be employed.	Existing facility DWPF and Tank Farm safety analysis documentation contains listing of chemicals, quantities, vessels and sizes, and Material at Risk. No changes are expected to chemicals used, tanks/vessels used, concentrations, or storage locations for this dissolution campaign. H-Canyon currently dissolves, stores and transfers surplus plutonium to DWPF. No changes are expected due to processing of additional surplus plutonium.

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Information Requested	Process up to 6 MT of plutonium through H-Canyon/HB-Line and DWPF (No Immobilization) Alternative	
	H-Canyon/HB-Line (including labs)	HLW
Design basis earthquake frequency and intensity	No change. This information is contained in the existing H-Canyon and HB-Line facility DSAs. Frequency is 5.0E-04/year. The intensity is a PC-3 event per WSRC-TM-95-1. (MM VIII)	No change. This information is contained in the existing DWPF and Tank Farm facility safety analysis documentation. Frequency is 5.0E-04/year. The intensity is a PC-3 event per WSRC-TM-95-1. (MM VIII)
Earthquake frequency that would result in loss of structural integrity	No change. This information is contained in the existing facility DSA. No earthquake events result in loss of structural integrity for the H-Canyon facility. The DSA discusses the damage that occurs (cracking, etc.) but that the structure remains intact.	No change. This information is contained in the existing DWPF and Tank Farm facility safety analysis documentation.
Other natural phenomena that would result in loss of structural integrity and their frequency	No change. This information is contained in the existing H-Canyon and HB-Line facility DSAs. No other NPH events result in loss of structural integrity for the H-Canyon facility.	No change. This information is contained in the existing DWPF and Tank Farm facility safety analsysi documentation.
Aircraft crash frequency	No change. This information is contained in the existing H-Canyon and HB-Line facility DSAs. There are separate frequencies for different type of aircraft (helicopter, light plane, etc.) S-CLC-G-00278, Aircraft Impact Frequencies for SRS Facilities, is available in DCC.	No Change. This information is contained in the existing DWPF and Tank Farm facility safety analysis documentation. There are separate frequencies for different type of aircraft (helicopter, light plane, etc.) S-CLC-G-00278, Aircraft Impact Frequencies for SRS Facilities, is available in DCC.

DWPF = Defense Waste Processing Facility
UNF = Used Nuclear Fuel