From: clayton.shedrow[redacted]
Sent: Monday, May 05, 2008 9:51 AM
To: Dimarzio, John A.
Cc: greg.burbage[redacted]; drew.grainger[redacted]; dianne.barnes[redacted]; betsy.westover[redacted]
linda.nass[redacted]; clayton.holloway[redacted] perjetta.hightower[redacted]
Subject: Fw: KAMS SEIS Data Call Information Provided:

Attachments: KAMS-KIS-CSSC Data Call-040408.doc

John

Additional KAMS-related data. If you have any questions, your technical contact is Greg Burbage ([redacted]).

[redacted]

Thanks.

C. Barry Shedrow
[redacted]

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----- Forwarded by Clayton Shedrow[redacted] on 05/05/2008 09:47 AM -----

Greg Burbage[redacted]

05/05/2008 09:43 AM

To Clayton Shedrow[redacted]
cc Dianne Barnes[redacted] Betsy Westover[redacted] Linda Nass[redacted], Clayton Holloway[redacted]
Subject KAMS SEIS Data Call Information Provided:

Barry,

I apologize for the information feed occurring in such a fragmented fashion, however, I desired to present it to SAIC as soon as it became available. The attachment that I am providing below is the KAMS-KIS-CSSC data call matrix from SAIC. The information specific to KIS and CSSC has already been provided. Therefore, this attachment is applicable to KAMS. Again, if there are questions from SAIC, have them offered back to me, or directly to the individual who provided response. With this attachment, I believe that the data call is 100% satisfied. I look forward to seeing the draft PuD SEIS in the near term. Meanwhile, keep me posted of any developments. Thanks.

KAMS/KIS/CSSC Information Request

(please provide numerical data in commonly reported units)

Information Requested	Facility		
	KAMS	KIS	CSSC
General			
Schedule - Construction or Modification - Operation - Deactivation and decommissioning	Schedule Dave Eisele 1) CX and/or mods. - complete 2) Operation – now thru 2019 3) D & D – N/A, part of Reactor D & D	Schedule Lance Traver 1) CX and/or mods. Completed June 2007. 2) Operation Hot Operations commenced in June 2007. 3) D & D TBD	Schedule Bob Bayer 1) CX and/or mods. 2) Operation 3) D & D B. Bayer provided separately
Description of facility including: - 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	Facility Description Dave Eisele 1) Floorplan – P-PG-K-2123 (2 pgs.) 2) Unauthorized entry features – Cat. 1 Facility; DBT Compliant 3) Malevolent acts prevention features – same as above 4) Fire protection – None credited 5) airborne release prevention features – No release facility 6) Criticality prevention features – 9975/3013 packaging; subcritical fully moderated infinite array; D & E Canal covered and stantioned to prevent drum entry 7) Liquid/non-liquid waste processing – N/A	Facility Description Lance Traver 1) Floorplan See Figure 2-2 in the KIS DSA Addendum. 2) Unauthorized entry features Physical security features comply with Procedure 301 of the WSRC 7Q Manual. 3) Malevolent acts prevention features See answer above. 4) Fire protection See Section 2.6 in the KIS DSA Addendum. 5) airborne release prevention features See Sections 2.3.5, 2.3.13, 2.3.15, and 2.5 in the KIS DSA Addendum. 6) Criticality prevention features See Section 6.0 in the KIS DSA Addendum. 7) Liquid/non-liquid waste processing. KIS does not include any liquid waste streams. Non-liquid waste streams are discussed in Section 2.10 of the KIS DSA Addendum.	Facility Description Bob Bayer 1) Floorplan 2) Unauthorized entry features 3) Malevolent acts prevention features 4) Fire protection 5) airborne release prevention features 6) Criticality prevention features 7) Liquid/non-liquid waste processing B. Bayer provided separately
Construction/modification			
Land disturbed for construction (acres or hectares)	NA	NA	Construction/mods Bob Bayer 1) Land disturbance B. Bayer provided separately

Information Requested	Facility		
	KAMS	KIS	CSSC
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)	NA	NA	Construction Bob Bayer 1) Activities description B. Bayer provided separately
Describe type and quantity of air pollutant emitting equipment and frequency and duration of use.	NA	NA	Construction/mods Bob Bayer 1) Type and quantity air pollutants
Describe type and quantity of noise producing equipment and frequency and duration of use.	NA	NA	Construction/mods. Bob Bayer 1) Type and quantity of noise poll. B. Bayer provided separately
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	NA	NA	Construction/mods. Linda Nass 1) Stacks info. Construction emissions for interior building modifications would exit through existing facility HVAC. (The 105-K Main Stack currently has a maximum airflow of 107,000 CFM. Stack height 130 ft. diameter is 16 ft, exhaust air temperature is 78°F and exit velocity is 15 ft/sec. 2) Fugitive releases info. Fugitive emissions during the CX/mod phase of the project would be minimal. If seen, these would exit out the 105 –K Main Stack.
	NA	NA	

Information Requested	Facility		
	KAMS	KIS	CSSC
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)	NA	NA	Construction/mods. Greg Burbage 1) Discharge location/permits 2) Discharge rates 3) Discharge concentrations No construction phase liquid discharges anticipated for CSSC beyond minor wastewater associated with concrete cutting, D & R, etc.
Employment for each year (FTEs)	NA	NA	Construction/mods. Bob Bayer 1) FTEs per year(s) CX B. Bayer provided separately
Shifts	NA	NA	Construction/mods. Bob Bayer 1) Shifts info. B. Bayer provided separately
Worker radiological exposure - total dose (person-rem)	NA	NA	Construction/mods. Bob Bayer 1) Rad. Exposure.dose per person B. Bayer provided separately
Number of exposed workers	NA	NA	Construction/mods. Bob Bayer 1) # of Exposed workers B. Bayer provided separately
Utilities needed - Potable water (units/yr) - Non-potable water (units/yr) - Electricity (units) - Gasoline (units/yr) - Diesel Fuel (units/yr)	NA	NA	Construction/mods. Bob Bayer 1) Utilities – Potable water 2) Non-potable water 3) Electricity 4) Gasoline 5) Diesel B. Bayer provided separately

Information Requested	Facility		
	KAMS	**KIS**	**CSSC**
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)	NA	NA	Construction/mods. Bob Bayer 1) Surfaces – Concrete 2) Asphalt 3) Steel 4) Crushed stone 5) Sand and Gravel 6) Soil 7) Lumber 8) Chemicals 9) Gases 10) Other B. Bayer provided separately
Waste generated (provide solid and liquid separately) (units/yr): - TRU - LLW - MLLW - Hazardous - Non-Hazardous	NA	NA	Construction/mods.Betsy Westover TRU: 0 ft3 LLW: 450 ft3 MLLW: 0 ft3 Haz: 0 ft3 Non-haz: 1080 ft3 PCB: 45 ft3 Lead for reuse: 90 ft3
Operations			
Land occupied by completed facilities (acres or hectares)	Operations Dave Eisele 1) Area of land disturbance - None	Operations Lance Traver 1) Area of land disturbance None	Operations Bob Bayer 1) Area of land disturbance B. Bayer provided separately

Information Requested	Facility		
	KAMS	KIS	CSSC
Description of Process including: - Flowchart - Throughput (units/yr) - Number of cans filled per year	Operations Dave Eisele 1) Process Flowchart – no processing 2) Throughput – no throughput 3) Cans filled/year – no output	Operations Lance Traver 1) Process Flowchart See M-M5-K-01941 2) Throughput The 3013 surveillance program requires approximately 40 3013 Containers to be inspected each year. 15 of the 40 undergo DE as well as NDE. In addition to 3013 surveillance requirements, approximately 120 NDA measurements and approximately 30 repackaging operations are performed per year. 3) Cans filled/year Approximately 70.	Operations Bob Bayer 1) Process Flowchart 2) Throughput 3) Cans filled/year B. Bayer provided separately

Information Requested	Facility		
	KAMS	**KIS**	**CSSC**
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	Operations Linda Nass 1) Stacks info. 2) Fugitive releases info. 3) Emergency generators, etc. No impact. No releases since material is stored in sealed containers and would not be opened in K Area.	Operations Linda Nass 1) Stacks info. 2) Fugitive releases info. 3) Emergency generators, etc. 1) Information on stack as listed in bullets 1 & 2 would need to be provided by Design/Projects. 2) Fugitive emissions would be minimal compared to the project. KIS was considered to be a subset of CSSC. When CSSC started, KIS would be shutdown or incorporated into the CSSC process. Therefore, the calculation for interim surveillance and storage is compiled in the CSSC evaluation. 3) A 20 kW DG would be installed for emergency operation. Calculated emissions: SOx 1.47E-02 tpy PM 1.57E-02 tpy PM-10: 1.57E-02 tpy CO: 4.81E-02 tpy VOC 1.92E-02 tpy NOx: 2.23E-01 tpy Lead: 3.01E-06 tpy	Operations Linda Nass 1) Stacks info. 2) Fugitive releases info. 3) Emergency generators, etc. 1) Information on stack as listed in bullets 1 & 2 would need to be provided by Design/Projects. 2) When environmental calculations were performed, it was not clear whether the airflow would exhaust out the current 105-K Main Stack, through the Assembly Area vent. The furnace exhaust gas flow rate was used in the release calculations; it assumed an exit velocity of 1 CFM (or 28,316.74 cc/min). This calculation was based upon only **one** furnace in operation. 3) Opening/emptying, metal to oxide conversion and stabilization will be performed inside gloveboxes. There should be no fugitive emissions; if otherwise, emissions would be minimal. 4) The KIS diesel would become part of the CSSC project and be used for emergency operation (see emissions from KIS DG).

<table>
<tr><th rowspan="2">Information Requested</th><th colspan="3">Facility</th></tr>
<tr><th>KAMS</th><th>KIS</th><th>CSSC</th></tr>
<tr>
<td>Air emissions
- Criteria Pollutants (metric tons/yr)
- HAPs (kilograms/yr)
- Radioisotopes (curies/yr)</td>
<td>Operations Linda Nass
1) Air - Criteria pollutants
2) HAPs
3) Radisotopes

No impact since material is stored in sealed containers which will not be opened.</td>
<td>Operations Linda Nass
1) Air - Criteria pollutants
2) HAPs
3) Radisotopes

Since storage and surveillance (including NDE) is part of CSSC, KIS was considered a subset of CSSC. See CSSC emissions.</td>
<td>Operations Linda Nass
1) Air - Criteria pollutants
2) HAPs
3) Radisotopes

Based upon a full year's operation, emissions would be as follows:
1) Other than PM, there are no 'Criteria' pollutants.
2) HAPS:
Ni 3.461E-16 kg/yr
NiO 2.3351E-11 kg/yr

PSD pollutants:
Be 1.466E-02 kg/yr
BeO 1.708E-11 kg/yr
F 9.098E+00 kg/yr
3) Radionuclides:
<table>
<tr><th>Nuclides</th><th>Curies/yr</th></tr>
<tr><td>Pu^{238}</td><td>2.476E-05</td></tr>
<tr><td>Pu^{239}</td><td>2.650E-06</td></tr>
<tr><td>Pu^{240}</td><td>2.963E-06</td></tr>
<tr><td>Pu^{241}</td><td>1.191E-03</td></tr>
<tr><td>Pu^{242}</td><td>1.439E-10</td></tr>
<tr><td>Total</td><td>1.221E-03</td></tr>
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Information Requested	Facility		
	KAMS	KIS	CSSC
Liquid effluents - Location(s) of outfall(s) - Rate(s) of discharge(s) (units/day) - Concentrations of contaminants (picocuries/liter or micrograms/liter)	Operations Greg Burbage 1) Liquids – Location 2) Discharge rates 3) Discharge concentrations No liquid waste discharges associated with KAMS operations.	Operations Greg Burbage 1) Liquids – Location 2) Discharge rates 3) Discharge concentrations No liquid waste discharges associated with KIS operations.	Operations Greg Burbage 1) Liquids – Location Primary liquid waste discharges associated with CSSC operations would be from an installed cooling tower (to support HVAC). These discharges would be routed to the current SCDHEC permitted NPDES Outfall K-18. 2) Discharge rates Discharge rates from the cooling tower contribution expected to be <100 gpm. 3)Discharge concentrations Potential metals from cooling tower operation expected to be within SCDHEC guidelines based on present river water contribution to K-18. No permitting issues anticipated.
Employment (FTEs)	Operations Dave Eisele 1) FTEs – 8 FTEs	Operations Lance Traver 1) FTEs Approximately 30	Operations Bob Bayer 1) FTEs B. Bayer provided separately
Shifts	Operations Dave Eisele 1) Shifts info. – 24/7	Operations Lance Traver 1) Shifts info. KIS currently operates on a 2-shift rotation. This is being increased to a three-shift rotation. It is possible that we could go to a 4-shift (i.e., 24/7 coverage) sometime in the future. However, there are no plans to implement a 4-shift rotation at this point.	Operations Bob Bayer 1) Shifts info. B. Bayer provided separately
Employee radiological exposure - total dose (person-rem)	Operations Wayne Farrell 1) Exposure – dose/person	Operations Wayne Farrell 1) Exposure – dose/person	Operations Wayne Farrell 1) Exposure – dose/person – 20.0 rem/yr.
Number of exposed workers	Operations Wayne Farrell 1) # of Workers exposed	Operations Wayne Farrell 1) # of Workers exposed	Operations Wayne Farrell 1) # of Workers exposed - 32

Information Requested	Facility		
	KAMS	KIS	CSSC
Public MEI dose (mrem)	Operations Wayne Farrell 1) Public MEI - See SAR	Operations Wayne Farrell 1) Public MEI - See SAR	4 x 10^{-4} mrem (DOE/EA-1538; page 20)
Population Dose (person-rem)	Operations Wayne Farrell 1) Population dose - See SAR	Operations Wayne Farrell 1) Population dose - See SAR	Operations Wayne Farrell 1) Population dose - See SAR
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)	Operations Dave Eisele 1) Utilities needed – Potable water 2) Non-potable water 3) Electricity 4) Natural Gas 5) Coal 6) Gasoline 7) Diesel 8) Heating oil #1-2, 4-8 none #3 Lights/security equipment (minimal)	Operations Lance Traver 1) Utilities needed – Potable water 2) Non-potable water 3) Electricity 4) Natural Gas 5) Coal 6) Gasoline 7) Diesel 8) Heating oil See Sections 2.2, 2.7, 2.8, and 2.9 of the KIS Addendum.	Operations Bob Bayer 1) Utilities needed – Potable water 2) Non-potable water 3) Electricity 4) Natural Gas 5) Coal 6) Gasoline 7) Diesel 8) Heating oil B. Bayer provided separately
Resources needed - Metals (units/yr) - Frit (units/yr) - Ceramic precursors (units/yr) - Chemicals (units/yr) - Gases (units/yr) - other materials (units/yr)	Operations Dave Eisele 1) Resources – Metals 2) Frit 3) Ceramic 4) Chemicals 5) Gases 6) Other #1-6 none needed	Operations Lance Traver 1) Resources – Metals 2) Frit 3) Ceramic 4) Chemicals 5) Gases 6) Other None	Operations Bob Bayer 1) Resources – Metals 2) Frit 3) Ceramic 4) Chemicals 5) Gases 6) Other B. Bayer provided separately
Waste generated (solid or liquid) (units/yr): - TRU - Mixed TRU - LLW - MLLW - Hazardous - Non-Hazardous	0 (Westover; 2/25/08) 0 (Westover; 2/25/08)	0.4 m3 (Westover; 2/25/08) 15-20 m3 (Westover; 2/25/08) Haz: 0.05 m3/yr Non-hazardous: 21 m3/yr	Operations Betsy Westover TRU: 1.0 m3/yr MTRU: 0 m3/yr LLW: 50 m3/yr MLLW: 0 m3/yr Haz: 0.1 m3/yr Non-hazardous: 21 m3/yr
Please provide any safety documentation (e.g., safety assessments, safety analysis reports) for these facilities.	Operations Dave Eisele 1) Safety Doc. – DSA (WSRC-2002-00005); TSR (WSRC-TR-96-20)	Operations Lance Traver 1) Safety Doc. See KIS Addendum and TSRs.	WSRC-TR-2005-00392 already provided to SAIC

Information Requested	Facility		
	KAMS	KIS	CSSC
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:	Operations Dave Eisele 1) Accident scenarios due to changes - None	Operations Lance Traver 1) Accident scenarios due to changes None	Operations Bob Bayer 1) Accident scenarios due to changes B. Bayer provided separately
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	Operations Wayne Farrell 1) Rad. Accidents – Descriptions 2) Accident frequency 3) Material at risk 4) Material characteristics 5) Source term released 6) Release parameters 7) Filtration 8) # of Involved workers - See SAR	Operations Wayne Farrell 1) Rad. Accidents – Descriptions 2) Accident frequency 3) Material at risk 4) Material characteristics 5) Source term released 6) Release parameters 7) Filtration 8) # of Involved workers - See SAR	Operations Wayne Farrell 1) Rad. Accidents – Descriptions 2) Accident frequency 3) Material at risk 4) Material characteristics 5) Source term released 6) Release parameters 7) Filtration 8) # of Involved workers - See SAR
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.	Operations Betsy Westover 1) Chemical inventory – List 2) Size/location largest tank 3) Chemical concentration * Only liquid nitrogen is used routinely in KAMS for NDA equipment. Small (30L) Dewars are taken in to charge the system. No large tanks of chemicals utilized for KAMS. Annual usage of liquid nitrogen is estimated to be 180 L per year (this is best guess lacking better data as this chemical is not required to be tracked to any further detail). * Other chemicals may be taken in periodically for minor maintenance activities, but have not been captured separately from overall facility (KAC) inventory/usage (unlike KIS below). Chemicals are not stored within KAMS. Usage is minor.	Operations Betsy Westover 1) Chemical inventory – List 2) Size/location largest tank 3) Chemical concentration * The only tank involved is for the Diesel Fuel for the generator which is located outside the building. It contains 145 gallons of fuel. The diked area around the diesel generator was constructed to contain the volume of the diesel generator tank plus a 6" rain event.	Operations Bob Bayer 1) Chemical inventory – List 2) Size/location largest tank 3) Chemical concentration B. Bayer provided separately

Information Requested	Facility		
	KAMS	**KIS**	**CSSC**
Design basis earthquake frequency and intensity	Operations Dave Eisele 1) Earthquake frequency/intensity - See S-CLC-K-00212 and S-CLC-K-00221	Operations Lance Traver 1) Earthquake frequency/intensity See S-CLC-K-00212 and S-CLC-K-00221	Operations Bob Bayer 1) Earthquake frequency/intensity B. Bayer provided separately
Earthquake frequency that would result in loss of structural integrity	Operations Dave Eisele 1) Quake freq. loss of struc. Integrity - See S-CLC-K-00212 and S-CLC-K-00221	Operations Lance Traver 1) Quake freq. loss of struc. Integrity See S-CLC-K-00212 and S-CLC-K-00221	Operations Bob Bayer 1) Quake freq. loss of struc. Integrity B. Bayer provided separately
Other natural phenomena that would result in loss of structural integrity and their frequency	Operations Dave Eisele 1) Natural phenomena (other) - See S-CLC-K-00212 and S-CLC-K-00221	Operations Lance Traver 1) Natural phenomena (other) See S-CLC-K-00212 and S-CLC-K-00221	Operations Bob Bayer 1) Natural phenomena (other) B. Bayer provided separately
Aircraft crash frequency	Operations Dave Eisele 1) Aircraft crash frequency - See S-CLC-K-00212 and S-CLC-K-00221	Operations Lance Traver 1) Aircraft crash frequency See S-CLC-K-00212 and S-CLC-K-00221	Operations Bob Bayer 1) Aircraft crash frequency B. Bayer provided separately
Deactivation and Decommissioning			
General description of the D&D process and end state achieved after D&D	D & D Dave Eisele 1) General description – Tied to Reactor D & D	D & D Lance Traver 1) General description None	D & D Bob Bayer 1) General description B. Bayer provided separately