

November 4, 2008

MEMORANDUM TO: Thomas Hiltz, Chief  
Advanced Fuel Cycle, GDP Enrichment  
and Conversion Branch  
Division of Fuel Cycle Safety  
and Safeguards  
Office of Nuclear Material Safety  
and Safeguards

FROM: Michael Raddatz, Senior Project Manager **/RA/**  
Advanced Fuel Cycle, GDP Enrichment  
and Conversion Branch  
Division of Fuel Cycle Safety  
and Safeguards  
Office of Nuclear Material Safety  
and Safeguards

SUBJECT: STAFF REVIEW OF 10 CFR 76.68 CHANGES TO THE  
PORTSMOUTH GASEOUS DIFFUSION PLANT LICENSING  
DOCUMENTS MADE BETWEEN DECEMBER 2003 AND  
SEPTEMBER 2008

The headquarters staff, in consultation with the regional inspectors, has reviewed the changes made since issuance of the 2003 certificate, inclusive of Revision 91. We considered the following requirements of Title 10 of the *Code of Federal Regulations* (10 CFR), Section 76.68, while performing the review:

- the Corporation shall conduct a written safety analysis which demonstrates that the changes would not result in undue risk to public health and safety, the common defense and security, or to the environment;
- the changes must be authorized by responsible management and approved by a safety review committee;
- the changes may not decrease effectiveness of the plant's safety, safeguards, and security programs;
- the changes may not involve a change in any condition to the certificate of compliance;
- the changes may not involve a change to any condition to the approved compliance plan; and
- the changes may not involve an un-reviewed safety question.

The NRC staff has prepared a short summary of the 168 changes (Enclosure 1) and parsed them into the following categories:

1. Eighty seven (87) changes were documented of what staff considered administrative details such as organizational changes, clarifications and/or correction of errors, lease and sublease changes, chronological updates, revised references, and similar actions.
2. Forty six (46) changes were documented of modifications to process equipment or procedures.
3. Two (2) changes were documented of modifications to accommodate revision of Nuclear Criticality Safety requirements on the processes.
4. Seven (7) changes were documented of procedural and/or equipment utilized to enact the Fundamental Nuclear Material Control Plan.
5. Eight (8) changes were documented of procedural and/or equipment utilized to ensure plant security.
6. Eight (8) changes were documented of the physical plant facilities such as demolition, construction, or boundary/fence movements.
7. Eight (8) changes were documented of equipment and/or procedural modifications affecting emergency preparedness and/or fire protection.
8. Two (2) changes were documented in the area of radiation protection.

The change summaries were reviewed both by NRC staff to ensure that when taken as a whole, there is reasonable assurance that the changes did not degrade the safety basis for the facility.

The staff began the review by examining the process followed by the United States Enrichment Corporation (USEC) to make the changes authorized by 10 CFR 76.68. The staff found that the review process at PORTS is referred to as a Plant Change Review (PCR). The PCR is performed and documented by USEC within a document identified as the Request for Application Change (RAC). The process involves a systematic evaluation of plant changes to determine whether they alter any Certificate of Compliance Condition, Technical Safety Requirements (TSR), Transportation Certificates of Compliance, or involve a safety, safeguards or security program decrease in effectiveness, or an Unresolved Safety Question (USQ).

Performance of the PCR process evaluates changes and screens them to determine if a written safety analysis, Decreased in Effectiveness Evaluation and/or Unreviewed Safety Question Determination need to be performed. These evaluations are performed by the originator and a qualified reviewer. The completed evaluations are then approved by the Nuclear Safety Manager or, when appropriate, an approved functional organization manager. The PCR and associated documents, as required by TSR 3.10, are then reviewed by the Plant Operations Review Committee (PORC).

The PORC consists of a quorum made up of the chairman and technical representation from Operations, Engineering, Nuclear Criticality Safety Engineering, Radiological Safety, and

Quality Assurance. Other plant organizations such as Security or Nuclear Regulatory Affairs may also serve on the PORC or be present to provide additional technical assistance. The PORC will recommend to the General Manager the approval or disapproval of the item(s) under consideration. These 10 CFR 76.68 evaluations are quality records and are maintained in accordance with plant procedures and are available for inspection at the facility.

As part of the routine inspection program, region-based inspectors reviewed selected changes made to the facility throughout the assessment period, including revisions to the Safety Analysis Report (SAR), and verified that the certificate holder was complying with 10 CFR 76.68 requirements. On an annual basis USEC submits, to the NRC, all of the changes to licensing documents that resulted from the 10 CFR 76.68 reviews. The changes are accompanied by a short summary explaining what changed and why (Enclosure 1). Upon receipt, NRC staff reviews the change summaries. If the NRC staff the reviewer believes that a change(s) warrants further review, the staff has the option of requesting copies of the RAC packages. The majority of the changes are administrative in nature.

In order to establish reasonable assurance that the applicant was following its process, documenting its findings, and reaching reasonable conclusions, the NRC headquarters staff requested 5 specific RAC packages from USEC. These packages were chosen at random to reflect a cross section of the 10 CFR 76.68 changes made during the past 5 years. The individual results from the staff's review are documented in Enclosure 2.

Based on the above, the staff concludes that there is reasonable assurance that USEC has adequately described and documented the changes for its Certificate of Compliance, made since its 2003 recertification and through revision 91, under the provisions of 10 CFR 76.68, and that specific NRC approval of these changes was not required. Therefore, the staff finds that the applicant is in compliance with the requirements of 10 CFR 76.36 (c) (iii).

Enclosures: As stated

cc: D. Fogel, USEC-Portsmouth

PORC will recommend to the General Manager the approval or disapproval of the item(s) under consideration. These 10 CFR 76.68 evaluations are quality records and are maintained in accordance with plant procedures and are available for inspection at the facility.

As part of the routine inspection program, region-based inspectors reviewed selected changes made to the facility throughout the assessment period, including revisions to the Safety Analysis Report (SAR), and verified that the certificate holder was complying with 10 CFR 76.68 requirements. On an annual basis USEC submits, to the NRC, all of the changes to licensing documents that resulted from the 10 CFR 76.68 reviews. The changes are accompanied by a short summary explaining what changed and why (Enclosure 1). Upon receipt, NRC staff reviews the change summaries. If the NRC staff the reviewer believes that a change(s) warrants further review, the staff has the option of requesting copies of the RAC packages. The majority of the changes are administrative in nature.

In order to establish reasonable assurance that the applicant was following its process, documenting its findings, and reaching reasonable conclusions, the NRC headquarters staff requested 5 specific RAC packages from USEC. These packages were chosen at random to reflect a cross section of the 10 CFR 76.68 changes made during the past 5 years. The individual results from the staff's review are documented in Enclosure 2.

Based on the above, the staff concludes that there is reasonable assurance that USEC has adequately described and documented the changes for its Certificate of Compliance, made since its 2003 recertification and through revision 91, under the provisions of 10 CFR 76.68, and that specific NRC approval of these changes was not required. Therefore, the staff finds that the applicant is in compliance with the requirements of 10 CFR 76.36 (c) (iii).

Enclosures: As stated

cc: D. Fogel, USEC-Portsmouth

DISTRIBUTION:

FCSS r/f M. Tschiltz B. Smith M. Bailey T. Liu

**ADAMS ACCESSION NUMBER: ML082800308**

OFC	FCSS/ECB	FCSS/ECB	FCSS/ECB	FCSS/AECB
NAME	M. Raddatz	V. Williams	T. Liu	T. Hiltz
DATE	10/09/08	10/22/08	11/03/08	11/04/08

**OFFICIAL RECORD COPY**

## 10 CFR 76.68 Changes Made to Licensing Documents

### Portsmouth Gaseous Diffusion Plant

December 2003 to September 2008

#### Administrative Nature

##### Revision 73

3. Application revised to reflect the NRC agency-wide initiative to improve the agency's effectiveness and efficiency by the consolidation of the fuel cycle inspection program activities into Region II.
5. Correct typographical error in SAR Chapter 1, Table 1-3 to change sealed source symbol from "Pr" to "Pm".
6. The same soil sample indicator RIS11 was shown on two different figures 5.1-17 and 5.1-20. Figure 5.1-17 shows "onsite soil and vegetation sampling points" while Figure 5.1-20 shows internal soil sampling points. The sampling indicator was removed from the incorrect figure 5.1-20.
7. USEC leased all or portions of X-3001, X-3012, X-7725, X-7726 and X-7727 to perform work under DOE regulatory authority in support of the Centrifuge Lead Cascade Project.
9. The lists of leased and non-leased facilities and associated figures are being updated to match the latest DOE Lease listing.
10. Typographical error corrected in TSRs 2.5.3.14 and 2.5.3.15. TSR 2.5.3.14, Condition A "operable" changed to "inoperable" and TSR 2.5.3.15 Required Actions A.2 removed one of two "at". The TSRs with the typographical errors do not concur with the TSRs approved by the NRC for SARUP TSRs. Correcting these changes will make the TSRs consistent with those previously approved by the NRC.
11. USEC de-leased the south half of X-3001 and X-3002 except for the transfer corridor.
12. SAR 5.2.2.3 stated that fissile material operations management signs the NCSA which is being revised to state that fissile material operations management "documents acknowledgment and agreement with the limits and controls". Also, this statement is being moved to the beginning of the description of the review and approval process.

#### **NOTE:**

The summary of the changes to the Safety Analysis Review (SAR), made by USEC, under the provisions of 10 CFR 76.68, listed in the following appendices may not be in numerical order within each appendix. This is because they are arranged within each appendix by the type of change, e.g., Administrative Change, Changes to Process, etc. For example, Revision 73 Changes 1 and 2 are found in Changes Made to Process Procedures/Equipment, while change 3 is found in Changes of Administrative Nature.

#### Revision 74

1. Appendix D was added to the QAP at the request of DOE in order to clarify the application of the PORTS QAP to the work associated with clean-up and removal of equipment in X-3001 in support of Lead Cascade project. Since the work is being performed under DOE regulatory authority Appendix D is not applicable to GDP activities performed under NRC certification.
2. Minor revisions were made to Appendix D of the QAP to address DOE comments.

#### Revision 75

1. Organizational changes were made as a result of the cessation of transfer and shipping activities at PORTS (To be performed at PGDP).
2. Within the Training organization “Mid-Level Managers and “Training Group Manager” positions have been eliminated. Training Manager has retained responsibility for these activities.
5. DOE request for de-leasing a portion of the X-745G cylinder yard resulted in the splitting of the cylinder yard in half, now referred to as X-745G-1 (DOE) and X-745G-2 (USEC).
9. SAR cylinder fill limit table changed for 5L, 5S and 2S cylinders to correct a pound to gram conversion error and to clarify that stamped 2S sample cylinders while safe to contain 2,222 g are being limited to a fill limit of 2,200 g by the TSR.
13. A section reference number in SAR 6.6 was corrected due to an editorial error during a previous change.
14. In SAR section 3.5 clarified the description of the USEC laboratory operations in the X-710 facility involving the uranium sampling and analysis areas to reflect that uranium material is in fact transferred from one container to another.

#### Revision 76

3. Security organization is no longer a part of Plant Services and now has a reporting matrix involving the Plant Manager and the new positions of Chief Information & Security Officer and Director of Corporate Security.
5. South half of the X-700 Weld Shop has been de-leased to DOE/DOE Contractors for general maintenance activities.
9. Updated 10 CFR references in the FNMCP by deleting 10 CFR 70.51 adding 10 CFR 74.19 and changing 70.51(d) to 74.19(c).

### Revision 77

1. Documents final changes to the Depleted Uranium Management Program (DUMP) and Decommissioning Funding Program (DFP) to reflect CY05 estimates of waste generation and disposal costs. Also changes to the list of Principle Officers were changed as follows William H. Timbers replaced by James R. Mellor and Morris Brown replaced by Russell B. Starkey Jr.

### Revision 78

1. The following areas are being subleased from USEC to USEC Inc. and will be regulated by DOE under the Regulatory Oversight Agreement:  
  
X-3001, Train 3 and Train 6  
X-7727H, Transfer Corridor  
X-7726, CTTF (Partial)  
X-7725, R/A Buffer Storage (BJC storage areas A, M, and M1 & adjoining locker room areas)  
X-3012 North Half  
X-7726 2<sup>nd</sup> and 3<sup>rd</sup> floor office areas
3. The PTQAP Introduction Page was revised to show that 10 CFR 71.12(c)(2) was changed to 10 CFR 71.17(c)(2).
4. The following area in the X-7725 will be leased but regulated by DOE under the Regulatory Oversight Agreement: "aisle-way that runs north to south through the X-7725 adjoining the Buffer Storage area and locker rooms"
6. Editorial change to Table 1-1 in the Emergency Plan to correct the symbol for Promethium-147 from "Pr" to "Pm".
9. Correct SAR to reflect that the X-3001 a leased/subleased facility.
10. Additional changes that reflect more accurately leased "Common" areas that exist in the GCEP area that are regulated by DOE under the Centrifuge Lead Cascade Regulatory Oversight Agreement.

### Revision 79

1. In response to the following NRC issued License Condition against the American Centrifuge Lead Cascade the GDP Emergency Plan was revised:

The Portsmouth Gaseous diffusion Plant Emergency Plan shall be revised to appropriately address the American Centrifuge Lead Cascade Facility and the Emergency Plan Implementing Procedures encompassing these topics shall be implemented at 120 days prior to the introduction of UF<sub>6</sub> in the American Centrifuge Lead Cascade Facility.

3. The Centrifuge Lead Cascade title “Director, American Centrifuge Plant as noted in the Emergency Plan is being change to Director, Lead Cascade Construction and Operations.
5. Revised SAR 2.3.3 to provide a more useful discussion of the PORTS site meteorology with respect to relative humidity. Site relative humidity will be based on the NOAA Climatological Summary for the Greater Cincinnati Airport.
7. Corrected SAR 6.1 to implement previously approved changes that were in error due to utilizing the wrong file.
8. Corrected pagination errors in SAR 3.5.
9. In SAR 3.3 removed the following reference to a portion of X-705 being under DOE regulations:  
  
“Decontamination operations performed in the West Annex are under Department of Energy (DOE) jurisdiction in accordance with Portsmouth Gaseous Diffusion Plant (PORTS) Compliance Plan (DOE/ORO-2027/R3), Appendix A.4.”
10. Revised Table 11 of the Environmental Compliance Status Report to include five quarterly TLD readings that were inadvertently omitted.

#### Revision 80

1. Additional portions of Building X-7725 to be leased for centrifuge deployment efforts. Activity under DOE Regulation.
4. An organizational change now reflects that there are two section managers for X-705 Chemical Operations.
7. SAR 5.6 corrected to meet 29 CFR 1910.119 training requirements of initial and three year refresher. Clarified when OSHA PSM program applies.
12. The X-344G Russian Transparency Trailer was leased and relocated to the GCEP area as X-3000T1 IAEA Trailer.

#### Revision 82

3. Some of the references to 10 CFR 71 contained in SAR 5.2 and 6.9 are being updated/corrected to the latest version of 10 CFR 71.
7. Numerous site GCEP facilities were leased and subsequently subleased to USEC Inc. which falls under DOE regulation per the DOE Regulatory Oversight Agreement (ROA).
8. Added a reference to the two following ANSI standards (ANSI N509 and N510) into SAR 5.1.



9. Corrected a language discrepancy in the Chemical Safety section to change readiness review committee to readiness review team. The SAR or plant procedures make no reference to a readiness review committee.

#### Revision 83

1. The following two DOE owned (non-leased) facilities X-615 and X-616 are being demolished and removed.
5. USEC HQ Organizational changes along with some associated position qualifications changes are being incorporated into to the Application as appropriate. Due to the HQ changes some minor site reporting level changes are required.
6. Several editorial/clarification changes were made to the Transportation Security Plan.
7. USEC is restructuring their PORTS management team to reflect an alignment analogous to a profit center/functional organization. The "Plant Manager" and all "Organizational Manager" positions, except Security and NS&Q are being eliminated. They will be replaced with three functional "Directors" at the prior "Plant Manager" level who will assume associated responsibilities of the prior positions; these new positions will report directly to the General Manager.
8. The title of the SAR section on self assessments has been changed from "Organizational Self Assessments" to just "Self Assessments".
10. The GDPSP was for both GDP sites and is now being separated into two stand alone documents. The change is editorial in that only specific references to the PGDP are being removed.
12. The "Director, Nuclear Regulatory Affairs" position title has been changed to "Director, Regulatory Affairs" and the NRA Manager & Environmental Compliance/Waste Management/Industrial Safety Manager report to the Director, Technical Services.

#### Revision 84

6. SAR section 2.2.4 will be revised to reflect that NRC has assumed regulatory oversight of the GCEP Lead Cascade.
9. Several areas within the X-720 are being de-leased to the DOE.
10. Text changes to reflect DOE's change in definition of plant operation from "Cold Standby" i.e., maintain capability to restart enrichment activities to "Cold Shutdown".
12. The north half of the X-700 was de-leased to DOE.

### Revision 85

3. The following GCEP related facilities are leased/subleased:

- \* X-3001
- \* X-3012
- \* X-7725 (partial)
- \* X-7726 (partial)
- \* X-7727H
- \* X-3000T1

4. The following GCEP related facilities are leased/subleased:

- \* X-204 (partial)
- \* X-1000
- \* Vault Area
- \* X-326 RCRA Areas
- \* X-770 Grounds

### Revision 86

2. The SAR description for chemical treatments is expanded to provide an individual discussion for running cell treatments, static cell treatments and long-term, low-temperature treatments. These basic descriptions were in Revision 65 of the SAR which was replaced by the Chapter 3 Update revision in 2003.
4. SAR clarified to reflect that the PSS is responsible to notify DOE concerning events classified as occurrences within DOE managed property (USEC non-leased space).
11. SAR revised to note that ACP has received a Construction and Operation license which encompasses a number of facilities in the southwest quadrant of the plant (GCEP) for which security controls are the responsibility of USEC Inc.
12. It was determined that the PORTS Ohio Department of Health License for Radioactive Material is not now, nor has ever been utilized. This change removes any reference to a Ohio Department of Health Radioactive Material License.
13. The flow rates listed on the Chapter 5.1 figures are approximations that were used to illustrate the various contributors to total flows at the NPDES outfalls are being deleted. Actual effluents flows are used for any radionuclide release calculations.
14. QAP section 2.17 changed to clarify that the quality record requirements identified in applicable procurements documents applies to procured non-commercial items and services instead of services and non-commercial items.
15. A portion of the X-112 facility is being subleased by ACP to house computing and telecommunications equipment in support of the Lead Cascade and ACP communications infrastructure.

16. Correction of Regulatory Guide 1.109 issuance date from October 1988 to October 1977.

#### Revision 87

2. The sand blast facility which was previously considered as a part of X-700 will be given its own facility number.
3. A previous change to remove reference to a Ohio Department of Health License for Radioactive Material failed to capture all of the locations in the Application. This change removes the remaining references to this license.
4. The following site areas are being subleased to USEC Inc. for GCEP use: Corporation's Contractor Trailer Area, Department's Contractor Trailers and Area and Department's Contractor Laydown Area.
5. A Section Manager position is being added to the organization to provide support for the roles and responsibilities of the functional maintenance and Operations Manager.
6. The following holding ponds are being leased/subleased to USEC Inc.; X-2230M and X-2230N.
7. The following are being subleased to USEC Inc.: X-2202, GCEP Roads and Grassy Unimproved Areas.
9. Changed title of the NRC Division of Nuclear Security to NRC Division of Security Operations and clarified FOCl determinations are first sent to the NRC who then submits the request to the DOE.
10. As it relates to the American Centrifuge Plant potential export control information was removed from the GDP Application.

#### Revision 89

1. The following facilities had a status change (leased, de-leased, name change, etc.): X-744V, X-745B, X-746, X-747, X-745C, X-745 E, X-611A, X-747H1, X-747K, X-752AT1-6, X-2232-E, X-623T1, and X-738.
2. Revised qualifications for Operations and Maintenance First-Line managers to remove "GDP" experience required for utility type areas
3. The following facilities had a status change (leased, subleased, partial sublease): X-1020, X-7721, X-1107-F, X-2207-E, X-2207-F, X-3000, X-3346, X-7745S, XT-860A, and XT-860B. Relocated Lead Cascade descriptive information within Emergency Plan (section 1.2). X-1020 is no longer a "dedicated" facility now that ACP has subleased several rooms within the facility. Classified Matter Plan, removed reference to vault type rooms in X-7721 (subleased rooms to ACP).

4. Leased/subleased X-3002 South Half and X-7725A.
5. X-7721 rooms 28, 29, 30 subleased to ACP and X-7725 HVAC/mechanical rooms, south Lunch and Rest rooms were leased/subleased.
6. X-1000 and adjacent area (DOE) no a PPA.
11. The following facilities had a status change (leased/subleased): X-220N, X-7725, and X-7726.
12. Made allowance for personnel having direct work responsibility to still perform self-assessments for their area.
13. Organizationally moved Safety Services (Industrial Safety) from under Technical Services to General Manager.
14. The following facilities had a status change (leased/subleased): X-6000, X-6001, X-6001A, X-2230G, X-2232B, X-2232D, X-2232G, X-2230D, X-2232BD, and X-2240. Corrected plant air system design capacity due to sublease of X-6000. Removed X-6000 above ground diesel storage tank from SAR table.
15. The following facilities had a status change (leased/subleased): X-1107AV, X-1107BP, X-1107DP, X-1107DV and X-2208.
16. Title of ACP person responsible for Lead Cascade Recovery Operations was changed and corrected nitric acid storage tank volume.
17. Clarified the intended operation and interface of the Autoclave Shell High Pressure Containment Shutdown System and the Autoclave Shell High Steam Pressure Shutdown System.
18. X-2230J facility was subleased.
19. Organizationally moved "Field Services" from under Infrastructure Operations to Program Management and Strategic Planning.
21. The following facilities had a status change (de-leased, demolished): X-1007HW, X-120, X-747G, X-770, X-344D, X-701A, X-701C, X-701F, and X-7745R.
22. Environmental Compliance Status and Environmental Monitoring Report was updated in support of the 5 year Certificate Renewal.

## Process Procedures/Equipment

### Revision 73

1. Technetium (Tc) traps are currently installed in autoclave(s) (X-344) to reduce the Tc in the UF6 as it is transferred to a “daughter cylinder”. Once the traps are loaded they must be evacuated and removed from the autoclave in order to replace the trap material. The change evaluated was to taking of the removed Tc trap, mounting it in another autoclave and connecting it with a pigtail to the autoclave evacuation system in order to heat the traps with steam so any residual UF6 could be removed from the traps prior to placing new trap material in the traps.
2. SAR section 6.4 was revised to explicitly state that trend analysis is utilized for equipment as specified by Engineering and to identify sources of data that may be used by Engineering as part of equipment performance history for the evaluation of Preventive Maintenance tasks and frequencies such as predictive maintenance data, problem reports, work packages, operator and FLM logs, etc.
4. SAR section 1.0 Appendix A revised to reflect PORTS commitment/exceptions to the 2001 Edition of ANSI N14.1 , Uranium Hexafluoride – Packaging for Transport from the 1995/1990 Editions.
13. SAR 3.2 changed to reflect that cold and controlled feeding, i.e., TSR Modes V and VI are typical operations at the X-344.

### Revision 75

3. A new “flexible” type of UF6 pigtail constructed of Monel and stainless steel was engineered and TSR tested for use in the X-344 autoclaves due to the restricted area between a 14 ton cylinder and the Tc traps.
4. SAR changed to reflect completion of placing appropriate cascade equipment in cold standby or shutdown condition, change of autoclave operational reference from “toll transfer to “typical transfer” and that X-326 PW and ERP are in cold standby condition.
6. The change involves the emptying of nominal 1500 pound cylinder heels of near normal enrichment utilizing the X-343 autoclaves. The material is transferred to cascade storage drums, were upon it will be transferred to the ERP station for removal. This re-packaging activity involved no enriching operations.
7. Revised the DOE Activities section of the SAR to reflect the movement of centrifuge machines from Train 3 and 4 areas of X-3001.
8. Revised the DOE Activities section of the SAR to reflect the removal of valves from Train 3 and 4 areas of X-3001.

10. Revised DOE Activities section of the SAR to reflect the removal of service modules and associated ductwork, piping and equipment from Train 3 and 4 areas of X-3001.
11. As a follow-up change to that discussed in item 6 above text changes have been made to better define "Cold Standby" Operations as it pertains to the X-340 Complex and Cascade Withdrawal facilities. While the current mission of these facilities has changed since shutdown there original functions and safety basis remain unchanged.

#### Revision 76

1. X-705 South Annex purging equipment modification that will permit Tc-99 traps removed from the autoclaves to be safely purged of any residual UF<sub>6</sub> and HF prior to opening the traps for refurbishment.
6. The X-611E automatic residual chlorine monitor has been abandon in place due obsolescence and will be replaced with an OEPA approved portable monitoring device. Monitoring will be on a 4 hour frequency.
7. Ongoing DOE activities revised to reflect disassembly of centrifuge machines and support equipment removal. Centrifuge machines and components will be packaged for disposal and transported to the X-3002 for disposal by DOE contractor personnel.

#### Revision 78

2. The X-627 facility has replaced the non-leased X-622T facility as the treatment facility for the sump water from the X-705 and X-700 facilities with discharge of treated wastewater to the X-6619. The X-622T will be dismantled and packaged as required for disposal.
5. Permit the Isolation of the X-344 autoclave air elimination system during the initial heating cycle in order to perform TSR 2.1.3.6.1 surveillance which requires the verification that the cavity between the rupture disk and the relief valve is  $\leq 2$  psig once steam has been introduced into the autoclave.
8. Modified RCW blowdown piping at the X-333/X-633 to allow for the bypassing of these facilities so they can be isolated, drained and placed in cold standby.

#### Revision 79

2. Three X-330 Cascade diesel generators associated with shutdown units 31-1, 31-2, 31-3, 31-4 and 31-5 were to be removed and sent to PGDP.
4. SAR 2.0 was revised to describe the operation of the Centrifuge Lead Cascade in GCEP facilities/areas subleased to USEC Inc. for the purpose of testing of Lead Cascade equipment and components including centrifuge machines.

### Revision 80

9. Due to some problems with cylinder lifting lugs the requirement to use belly bands when lifting cylinders with lifting lugs which are damaged or impaired in some manner.

### Revision 81

1. A SAR change was made to revise the description of the buffer pressure for shutdown equipment to match that described in the TSR. TSRs 2.2.3.15 and 2.7.3.14 in their respective Basis Statement discuss that deposits that are greater than a safe mass and not in a fluorinating environment are to have a dry gas blanket over the deposit at  $\geq 14$  psia. The SAR previously described the buffer as being at "Slightly above atmospheric pressure" which is greater than or equal to the TSR required 14 psia. The slightly above atmospheric pressure value was desired when the cascade was initially shutdown to provide additional operating margin and for the protection of the cascade equipment should there be a future need to restart the equipment. Now that there is no longer a need for a total cascade restart, there is no longer an equipment protection need to maintain the buffer above atmospheric pressure.

### Revision 82

2. USEC has contracted with DOE to process near-normal enriched  $UF_6$  contaminated with Tc-99 that may be in cylinders that do not meet ANSI standards and therefore require repackaging. While all of the operations required for this overall task have been performed in the past the SAR needs added description of these activities to more clearly define those activities which are aligned with the previous enrichment operations and those now being performed under Cold Standby.
4. This change corrects a previous SAR change that had addressed the repackaging of non-compliant PGDP feed cylinders being performed for DOE. The correction is that the cylinders to be repackaged are non-compliant with DOT shipping regulations with regard to having a minimum wall thickness of 0.250 inch but are not necessarily non-compliant with ANSI N14.1. Based on engineering inspections and evaluations cylinders are determined to be acceptable for normal heating to remove the contents or require the use of Controlled Feeding to safely remove their contents.
5. X-343 autoclave number 6 is being modified to for controlled feeding capability by replacing one of the existing steam regulator valves with a smaller steam control valve controlled by cylinder wall temperature. The new steam control system will have a steam feed rate of approximately 10% of the existing system.
6. The electrical heaters used on the pigtailed attaching sample containers to autoclave manifolds are no longer commercially available. Engineering has determined that the heaters are not necessary and pigtail connectors can be fabricated without heat tracing. Instead serpentine heaters can be installed by Operations prior to each sampling operation in order to prevent "freeze out."

10. Changes are being made to indicate that controlled feeding to the cascade can occur in either the X-343 or X-342 and to describe the steam control system added to the X-342 autoclaves to accommodate controlled feed operations.
11. The X-6000 facility being operated in support of the GCEP Lead Cascade requires that a new automatically controlled copper corrosion inhibitor system be installed.

#### Revision 83

2. SAR clarified to reflect that during Cold Standby Operations the Continuous Vent Monitor Composite Samples are not being analyzed for fluorides. Both the Federal and Ohio EPAs have no applicable rules limiting requirements. Since the GDP has ceased enrichment operations and historic public complaints of odor are no longer an issue this analysis is no longer needed. In addition the Continuous Vent Monitor samples are collected weekly and screened for early detection but are not necessarily analyzed weekly for uranium and Technetium.
9. The DOE facility X-701D is being prepared for demolition.

#### Revision 84

2. The change reflects the completion of the GCEP Cleanout project by USEC as noted in section 2.2.4 of the SAR. Facility maintenance will continue preserving the GCEP facilities for eventual sublease to USEC Inc. under a commercial plant lease and eventual regulation by NRC under a Part 70 ACP Construction and Operating License.
4. In order to address a legacy issue from previous revisions, the reference to autoclave roll motor buffer air supply lines for X-343 autoclaves 3 & 4 are being removed. The SAR already notes that these autoclaves have no roll capability and are no longer used as autoclaves.
5. Further clarified that X-343 autoclaves 3 & 4 are not for heating cylinders but are used as dump/surge volume. Text changes are being made to clearly reflect the current operation of these autoclaves.
8. The plant dry air dew point value is being changed from -60 °F to -25 °F. The NCSA(s) already define the limiting dew point at 0 °F. The new value will better align with the instrument tolerances and still provide for a small operational buffer.
11. As-found condition addressed where an error in the design documentation prepared by PGDP (cylinder design authority) whereby the outside corners of the cylinder lugs have radius of curvature of 1/8 inch instead of the 3/4 inch specified in the ANSI N14.1, 2001 edition. Engineering determined that this was a minor deviation from the ANSI standard and that it had no safety significance.
13. The title of the form used to document equipment history is being changed from "Equipment History Form" to "Work In Progress Log" which represents a change in the method of how the history is maintained.



14. Since the shutdown of enrichment operations the processing cell treatment gases has been performed in Cold Recovery. With the level of cell treatments being increased the use of the cascade/purge cascade equipment in the disposal of cell treatment gases is being resumed.

#### Revision 85

2. In order to address an as-found condition involving a check valve location in the X-344 #1 and #2 buffer air supply line to the roll motor, the SAR was changed to reflect that the check valve is locate outside the Q containment boundary.
5. The X-100 air conditioning system had been converted from a once through cooling system to a closed loop cooling system. The SAR was not revised at the time of the change to reflect the elimination of this effluent to the X-617 holding pond. Under this evaluation the SAR is being revised to reflect current plant conditions.
6. New GP waste containers made from Schedule 40, nominal 4 inch PVC pipe are being introduced into plant service. They will be designated as K and T containers.
7. Cell buffer air pressure when required to be used was specified at "slightly above atmospheric pressure". This was established primarily for equipment protection when the cascade was initially shutdown. The buffer air requirement is now "14.0 psia or greater". Associated with this change when submitted as part of the annual submittal a NRC question was addressed in USEC letter GDP 07-0029.

#### Revision 86

1. Two refurbished/new plant air compressors are being installed in the X-330 to replace the capacity of five older compressors that are out of service.
8. X-343 autoclaves 3 & 4 are not used as autoclaves but as surge volume/dump cylinder locations therefore several of the monitored field devices whose functions are needed only for autoclave operations are being jumpered out to minimize invalid alarms.
9. In preparation for demolishing DOE owned X-105 and X-770 two safety related systems are being removed, CAAS and HPFWS.
10. GDPSP revised to address the proper handling of Part 2 of the QSPs. In addition, other changes include enhanced definitions, classification stamp example change, clearer portion marking guidance, improved X-705 and X-344 descriptions, and some minor administrative changes.

#### Revision 89

7. X-100 East Wing now a flex CAA/PPA to accommodate daytime training in the area.

## Revision 90

1. TSR 2.7.3.5, Cell Treatment Monitoring was revised to change Condition A to reflect a different monitoring time frame when conducting LTLT type treatments. In addition a new surveillance was added to address LTLT sampling. DOE contracted with USEC to remove residual deposits of HEU and MEU from the X-326 that are currently held up in installed equipment. These deposits were left following DOE's initial removal of legacy HEU and MEU holdup material as part of the DOE HEU suspension project. Deposit removal will be conducted by in situ static chemical treatment of cells and other cascade equipment with the subsequent down blending to LEU. These changes were submitted to the NRC on January 7, 2008 (GDP 08-0001) and approved on May 30, 2008 as Amendment 8.

## **Nuclear Criticality Safety Requirements**

### Revision 80

8. Based on NCSA changes to the NCSA for small UF6 cylinder cleaning the SAR 3.3 and 5.2A were revised to limit the cylinder contents to 10% enrichment and remove the NCS controls for requiring a cadmium shield and dual NDA mass measurements and to make other minor process description changes. The cleaning process still complies with the Double Contingency Principle.

### Revision 89

9. In support of NCSA/E change that allows, under prescribed NCS controls, for the use of water, nitric acid or boric acid in the cleaning of large cylinders.

## **Fundamental Nuclear Material Control Plan (FNMCP)**

### Revision 75

15. This change transfers responsibility for activities involving nuclear materials in Material Balance Area (MBA) #19 (XT-847 Waste Management Staging Facility) from the Environmental Compliance/Waste Management and Industrial Safety to the X-340 Group.

### Revision 76

2. FNMCP changed to require review of training modules for accuracy and completeness from once every three years to prior to each presentation of the module. Thereby ensuring training materials are current for each training application.

### Revision 78

7. Deleted text in FNMCP describing PORTS participation in Safeguards Measurement Exchange Program administered by New Brunswick Laboratory (NBL). However, USEC analytical laboratory continues to participate in other inter-laboratory control programs.

### Revision 80

6. Due to the physical condition of some PGDP cylinders the contents can not be liquefied and it is necessary to take a gas over solid sample for the confirmation of shipper's enrichment value. Since there is no separation of the uranium isotopes between the vapor and liquid phases the gas sample will provide a representative enrichment value. Therefore there is no decrease in the effectiveness of the FNMCP.
11. Laboratory accountability balance L21 was replaced with a newer model that was determined to be equivalent.

### Revision 82

1. FNMCP was revised to align the plan described process (section 10) to perform assessments of the NMC&A program with requirements of the QAP, specifically sections 2.18, Audits and 2.16, Corrective Actions.

### Revision 89

20. FNMCP changed to reflect new scale in X-326.

## **Plant Security**

### Revision 75

12. The GDPSP, Physical Security Plan was changed to revise the language describing the exit-only roto-gate near the X-100, add that additional standard exit roto-gates can be installed along the CAA fence and some PGDP specific information was removed.

### Revision 80

2. GDPSP changes that clarified: that fence material could be heavier than 11 gauge, that under Key Control individuals other than Protective Force can be responsible, and some added flexibility for the fabrication and issuance of Temporary and Photo Badges. Changes were not substantial enough to cause a decrease in the plan's effectiveness.
3. The X-112 is no longer required to be staffed on a 24 hour basis. The facility classified systems have removable hard drives that are secured within security containers when the facility is not staffed. The plan to protect classified matter is not decreased.
5. The following changes to the Application were made in support of the implementation of the security plan for the American Centrifuge Lead Cascade Facility: Rooms 28, 29 & 30 in the X-7721 have been modified as vault type rooms with appropriate security measures for the storage of S-RD and C-RD matter, and the CAA fencing in the GCEP area has been expanded.
10. Based on 10 CFR 95.25 the frequency of security key audits/inventories has been increased from annual to monthly. In addition information was added regarding the use of the NSI stamp.

### Revision 83

3. The CAA boundary fence is being altered such that the DOE cylinder yards X-745C, X-745E and X-745G-1 are located outside the CAA. The USEC X-745G-2 along with the DOE X-745G-1 cylinder yards which are outside the CAA are fenced to restrict access to only those with official business.

### Revision 86

7. DOE requested the de-leasing of the Northeast Bypass Road (Fog Road), at which time they upgraded the road and opened it to the public. USEC moved the North Access Road security check to just North of the East Access Road. ICMs were reviewed and discussed with NRC.

## Revision 88

1. The American Centrifuge Plant (ACP) NRC license was issued on April 13, 2007. With issuance of the ACP license, the GCEP Area which is located in the southwest quadrant of the PORTS site will, in the near future, come under ACP control and become the ACP Controlled Access Area (CAA). Subsequently, the ACP CAA will have access controls based on the USEC Inc. Security Program contained in the ACP License Application. As a result of issuance of the ACP license, the total site CAA will be separated into two portions: the GDP CAA and the ACP CAA. Several facilities, leased to USEC under the GDP lease, three of which contain SNM-LSS or classified matter will be located within the ACP CAA. The Physical Security Plan and the Classified Matter Plan were revised to reflect changes needed as a result of the new ACP CAA. This change was submitted to the NRC for approval on May 22, 2007 (GDP 07-0016) and approval was granted on November 2, 2007 as Amendment 7.

## Facility Changes

### Revision 76

4. The X-627, Groundwater Treatment Facility is a new un-leased facility operated by DOE/DOE Contractors for the treatment of ground water from the X-705 sumps that will discharge to the X-6619 Sewage Treatment Plant.

### Revision 83

11. The following three DOE facilities are to be demolished: X-230J1, X-230J8 and X-740.
13. DOE facilities X-344C, X-344E and X-344F are to be demolished.

### Revision 84

1. DOE facility X-701D to be demolished.
3. DOE facility X-105 to be demolished.
7. DOE facilities X-106B, X-342C and X-720A are to be demolished.

### Revision 86

3. The proposed addition of a natural gas pipeline to supply the UF<sub>6</sub> Conversion Facility was evaluated for any affect on the GDP.

### Revision 89

10. X-705 installation of de-ionized water supply.

## **Fire Protection/Emergency Preparedness**

### **Fire Protection:**

#### Revision 85

1. In order to supply the DUF<sub>6</sub> Conversion Facility with fire water a tie-in will be made into the High Pressure Fire Water System.

#### Revision 86

5. The UF<sub>6</sub> Conversion Facility requires a second tie-in to the High Pressure Fire Water system.
6. The existence of a PORC Fire Protection Subcommittee is being deleted. PORC if it requires any additional review support will still be able to appoint a subcommittee.

### **Emergency Preparedness:**

#### Revision 73

8. New CAAS nitrogen strombos horns are to be installed at the X-7725 in order to provide adequate audibility for the area of the X-7745R storage pad.

#### Revision 79

6. Emergency Plan revised to correctly reflect testing frequencies as currently specified in the SAR and TSRs.

#### Revision 83

4. EPlan revised to reflect that not all Non-USEC site personnel receive their GET training from the USEC Training organization but that they can receive their biennial training on the six Emergency Plan elements by attending GET delivered by approved DOE, DOE Contractor, USEC Inc., etc. training modules.

#### Revision 87

1. The pressure regulator associated with the CAAS horn cabinet can be replaced with a pressure snubber (i.e., calibrated orifice) to address leaking regulators. The system should be more reliable and require less maintenance.

#### Revision 89

8. X-7725/X-7745 CAAS cluster and slave alarms removed after DOE material removal.



## **Radiation Protection**

### Revision 76

9. Baseline Effluent Quantities (BEQ) for the X-343 and X-344A have been revised. Following the last annual BEQ re-evaluation, effluent data and associated BEQ calculations were submitted to the Radiation Protection Committee. The committee approved these slightly different changes.

### Revision 87

8. The BEQ values for the cascade vents due to a permanent operation change (no enriching) are being updated.

## Request for Application Change (RAC) Reviews Performed by NRC Staff

**Review of USEC PORTS Revision 75 No. 3: A new “flexible” type of UF6 pigtail constructed of Monel and stainless steel was engineered and TSR tested for use in the X-344 autoclaves due to the restricted area between a 14 ton cylinder and the Tc traps.”**

### Regulatory Requirement

10 CFR 76.68 (a) “Plant changes” states: The Corporation may make changes to the plant or to the plant's operations as described in the safety analysis report without prior Commission approval provided all the provisions of this section are met. The staff has reviewed the Package associated with the change and made the following findings:

### Findings

Has the corporation conducted a written safety analysis which demonstrates that the changes would not result in undue risk to public health and safety, the common defense and security, or to the environment?

YES  NO

Are the changes authorized by responsible management approved by a safety review committee?

YES  NO

Do the changes decrease effectiveness of the plant's safety, safeguards and security programs?

YES  NO

Do the changes involve a change in any condition to the certificate of compliance?

YES  NO

Do the changes involve a change to any condition to the approved compliance plan?

YES  NO

Do the changes involve an un-reviewed safety question?

YES  NO

### Conclusion

This RAC addresses the work activities associated with design and construction of a new “pig tail” to be utilized at the facility. The purpose of equipment is to transfer UF6 from a 14 ton cylinder to the cascade. The staff has reviewed the RAC submitted by the licensee and agrees with the above determinations. The staff concludes that the RAC demonstrates compliance with 10 CFR 76.68.

### Reviewer

Michael Raddatz

**Review of USEC PORTS Revision 80 No. 8: “Based on NCSA changes to the NCSA for small UF6 cylinder cleaning the SAR 3.3 and 5.2A were revised to limit the cylinder contents to 10% enrichment and remove the NCS controls for requiring a cadmium shield and dual NDA mass measurements and to make other minor process description changes.”**

**Regulatory Requirement**

10 CRR 76.68 (a) “Plant changes” states: The Corporation may make changes to the plant or to the plant’s operations as described in the safety analysis report without prior Commission approval provided all the provisions of this section are met. The staff has reviewed the Package associated with the change and made the following findings:

**Findings**

Has the corporation conducted a written safety analysis which demonstrates that the changes would not result in undue risk to public health and safety, the common defense and security, or to the environment?

YES  NO

Are the changes authorized by responsible management approved by a safety review committee?

YES  NO

Do the changes decrease effectiveness of the plant’s safety, safeguards, and security programs

YES  NO

Do the changes involve a change in any condition to the certificate of compliance?

YES  NO

Do the changes involve a change to any condition to the approved compliance plan?

YES  NO

Do the changes involve an un-reviewed safety question?

YES  NO

**Conclusion**

The staff has reviewed the package and independently verified that the cleaning process still complies with the Double Contingency Principle, does not decrease effectiveness of a program, or involve an USQ. The staff has reviewed the RAC submitted by the licensee, and agrees with its determinations. The staff concludes that the RAC demonstrates compliance with 10 CFR 76.68.

**Reviewer**

Michael Raddatz

**Review of USEC PORTS Revision 84 No. 11: “As-found condition addressed where an error in the design documentation prepared by PGDP (cylinder design authority) whereby the outside corners of the cylinder lugs have radius of curvature of 1/8 inch instead of the 3/4 inch specified in the ANSI N14.1, 2001 edition.”**

**Regulatory Requirement**

10 CFR 76.68 (a) “Plant changes” states: The Corporation may make changes to the plant or to the plant’s operations as described in the safety analysis report without prior Commission approval provided all the provisions of this section are met. The staff has reviewed the Package associated with the change and made the following findings:

**Findings**

Has the corporation conducted a written safety analysis which demonstrates that the changes would not result in undue risk to public health and safety, the common defense and security, or to the environment?

YES  NO

Are the changes authorized by responsible management approved by a safety review committee?

YES  NO

Do the changes decrease effectiveness of the plant’s safety, safeguards, and security programs

YES  NO

Do the changes involve a change in any condition to the certificate of compliance?

YES  NO

Do the changes involve a change to any condition to the approved compliance plan?

YES  NO

Do the changes involve an un-reviewed safety question?

YES  NO

**Conclusion**

Engineering determined that this was a minor deviation from the ANSI standard and that it had no safety significance. The staff has reviewed the RAC submitted by the licensee and agrees with the above determinations. The staff concludes that the RAC demonstrates compliance with 10 CFR 76.68.

**Reviewer**

Michael Raddatz

**Review of USEC PORTS Revision 91 No. 08-X0017: “Change SAR 3.2.4.5, (Lifting Liquid UF6 Cylinders in X-344) to remove the reference to “Technetium Cleanup.”**

**Regulatory Requirement**

10 CFR 76.68 (a) “Plant changes” states: The Corporation may make changes to the plant or to the plant’s operations as described in the safety analysis report without prior Commission approval provided all the provisions of this section are met. The staff has reviewed the Package associated with the change and made the following findings:

**Findings**

Has the corporation conducted a written safety analysis which demonstrates that the changes would not result in undue risk to public health and safety, the common defense and security, or to the environment?

YES  NO

Are the changes authorized by responsible management approved by a safety review committee?

YES  NO

Do the changes decrease effectiveness of the plant’s safety, safeguards, and security programs

YES  NO

Do the changes involve a change in any condition to the certificate of compliance?

YES  NO

Do the changes involve a change to any condition to the approved compliance plan?

YES  NO

Do the changes involve an un-reviewed safety question?

YES  NO

**Conclusion**

This change involved editing of the SAR to remove specific reference to the word “Technetium” as that portion of cleanup project that is nearing completion. The staff concludes that the RAC represents an editorial change and demonstrates compliance with 10 CFR 76.68.

**Reviewer**

Michael Raddatz

**Review of USEC PORTS Revision 73 No. 8: “New CAAS nitrogen strombos horns are to be installed at the X-7725.”**

**Regulatory Requirement**

10 CFR 76.68 (a) “Plant changes” states: The Corporation may make changes to the plant or to the plant’s operations as described in the safety analysis report without prior Commission approval provided all the provisions of this section are met. The staff has reviewed the Package associated with the change and made the following findings:

**Findings**

Has the corporation conducted a written safety analysis which demonstrates that the changes would not result in undue risk to public health and safety, the common defense and security, or to the environment?

YES  NO

Are the changes authorized by responsible management approved by a safety review committee?

YES  NO

Do the changes decrease effectiveness of the plant’s safety, safeguards, and security programs

YES  NO

Do the changes involve a change in any condition to the certificate of compliance?

YES  NO

Do the changes involve a change to any condition to the approved compliance plan?

YES  NO

Do the changes involve an un-reviewed safety question?

YES  NO

**Conclusion**

This change was required In order to provide adequate audibility of the horns for the area of the X-7745R storage pad. The staff concludes that the RAC represents an editorial change and demonstrates compliance with 10 CFR 76.68.

**Reviewer**

Michael Raddatz