May 6, 2011

Mr. Steven A. Toelle
Director, Nuclear Regulatory Affairs
U. S. Enrichment Corporation
2 Democracy Center
6903 Rockledge Drive
Bethesda, MD 20817

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION RELATED TO AMENDMENT REQUEST REGARDING THE USE OF C-745-X FOR STORAGE OF PROCESS EQUIPMENT CONTAINING PONTENTIALLY FISSILE MATERIAL, PADUCAH GASEOUS DIFFUSION PLANT (TAC NO. L32769)

Dear Mr. Toelle:

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the February 14, 2011 (Agencywide Documents Access and Management System [ADAMS] Accession Number ML110530055), certificate amendment request, as supplemented by letter dated April 4, 2011, submitted by United States Enrichment Corporation (USEC), Paducah Gaseous Diffusion Plant (PGDP or certificate holder), concerning USEC-PGDP's proposed revision to its Technical Safety Requirement, Section 2.6.4.1, Safety Analysis Report Sections 4.2 and 4.3.2.6 to allow use of C-745-X for storage of process equipment containing potentially fissile material. Based on the review to date, the staff has identified that additional information is needed before final action can be taken on your submittal.

Your response to the request for additional information, specified in the enclosure, should be provided to the NRC within 10 business days from the date of this letter. This time frame has been agreed upon between NRC staff and USEC-PGDP representatives during the telephone conference held on May 2, 2011.

In accordance with Title 10 of the *Code of Federal Regulations*, Section 2.390 of the NRC's Rules of Practice, a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of the NRC's ADAMS. ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

If there are any questions regarding this action, please contact me at 301-492-3217 or via e-mail to tilda.liu@nrc.gov.

Sincerely,

/RA/

Tilda Y. Liu, Senior Project Manager
Conversion, Deconversion
and Enrichment Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Enclosure:
As stated

Docket No. 70-7001
Certificate No. GDP-1

cc w/enclosure:

Mr. Vernon Shanks, USEC-Paducah
Paducah Gaseous Diffusion Plant
PO Box 1410
Paducah, KY 42001

Mr. Randall M. DeVault
U.S. Department of Energy – Oak Ridge
PO Box 2001
Oak Ridge, TN 37832

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PO Box 2001
Oak Ridge, TN 37832

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REQUEST FOR ADDITIONAL INFORMATION

PADUCAH GASEOUS DIFFUSION PLANT

REVSION TO TECHNICAL SAFETY REQUIREMENTS SECTION 2.6.4.1, SAFETY ANALYSIS REPORT SECTIONS 4.2 AND 4.3.2.6 TO ALLOW USE OF C-745-X FOR STORAGE OF PROCESS EQUIPMENT CONTAINING POTENTIALLY FISSILE MATERIAL

Request for Additional Information (RAI) 1

The supplemental responses dated April 4, 2011, only referred to outdoor storage of Uncomplicated Handling (UH) components. There is no mention of a control preventing outdoor storage of Planned Expeditious Handling (PEH) components. What ensures that only UH components will be stored outside? The information is needed because the criticality evaluation only considers intrusion of rain or snow into UH components. Assurance of subcriticality under normal and credible abnormal conditions requires that either the analysis adequately covers outdoor storage of PEH components, or PEH components be banned in the Safety Analysis Report or Technical Safety Requirements from being stored outdoors.

Title 10 of the *Code of Federal Regulations* (10 CFR) 76.85 states that the Corporation must "perform an analysis of potential accidents and consequences," and that they must provide "assurance that plant operation will be conducted in a manner to prevent or mitigate the consequences from a reasonable spectrum of postulated accidents which include internal and external events and natural phenomena in order to ensure adequate protection of the public health and safety." This information is necessary to ensure that there is adequate protection of public health and safety from the consequences of criticality accidents.

RAI 2

The only scenario considered specifically for outdoor storage of UH components is 4.5.20 in Nuclear Criticality Safety Evaluation 120. That relies only on a single administrative control and the natural and credible course of events. The certificate holder is requested to address the following: (1) failure of operators to cover openings with waterproof covers, when unattended or in inclement weather; (2) improper classification of removed process equipment as UH; (3) improper movement of PEH onto the C-745-X storage pad; and (4) [since covers do not have to be fireproof] failure due to a fire on the C-745-X storage pad. Reasonable assurance of safety with outdoor storage of UH components necessitates that failure mechanisms associated with the administrative controls be considered.

10 CFR 76.85 states that the Corporation must "perform an analysis of potential accidents and consequences," and that they must provide "assurance that plant operation will be conducted in a manner to prevent or mitigate the consequences from a reasonable spectrum of postulated accidents which include internal and external events and natural phenomena in order to ensure adequate protection of the public health and safety." This information is necessary to ensure that there is adequate protection of public health and safety from the consequences of criticality accidents.

RAI 3

What provisions will there be for initially and periodically verifying correct installation, and continued effectiveness, of waterproof covers on UH equipment? Because these covers are the only control preventing criticality, reasonable assurance of safety necessitates that sufficient measures be established to ensure they will perform their safety function when needed.

10 CFR 76.85 states that the Corporation must "perform an analysis of potential accidents and consequences," and that they must provide "assurance that plant operation will be conducted in a manner to prevent or mitigate the consequences from a reasonable spectrum of postulated accidents which include internal and external events and natural phenomena in order to ensure adequate protection of the public health and safety." This information is necessary to ensure that there is adequate protection of public health and safety from the consequences of criticality accidents.

RAI 4

The C-746Q Critically Accident Alarm System (CAAS) Audibility Building Checklist indicates that the CASS sufficiently exceeds the background noise level at 500 hertz, for each survey location. However, in several cases, the broadband level is stated as not being acceptable, or not applicable. The listening check was also reported as not applicable for each survey location. There are also no units listed in the table [staff assumes these are in decibel (dB)]. Explain the table and how it demonstrates acceptable CAAS audibility on the C-745-X pad. ANS-8.3-1997, Section 4.3.6, specifies that horns should be at least 10 dB above background in order to ensure they will be adequate to initiate personnel evacuation.

10 CFR 76.85 states that the Corporation must "perform an analysis of potential accidents and consequences," and that they must provide "assurance that plant operation will be conducted in a manner to prevent or mitigate the consequences from a reasonable spectrum of postulated accidents which include internal and external events and natural phenomena in order to ensure adequate protection of the public health and safety." This information is necessary to ensure that there is adequate protection of public health and safety from the consequences of criticality accidents.