

July 27, 2006

Mr. Russell Starkey, Vice President, Operations
United States Enrichment Corporation
2 Democracy Center
6903 Rockledge Drive
Bethesda, MD 20817

SUBJECT: AMENDMENT 8 - PADUCAH GASEOUS DIFFUSION PLANT - CHANGE TO
TECHNICAL SAFETY REQUIREMENT 2.6.4.1b, CRITICALITY ACCIDENT
ALARM SYSTEM (CAAS) AUDIBILITY (TAC L52578)

Dear Mr. Starkey:

In accordance with your application dated July 19, 2006, and pursuant to Part 76 to Title 10 of the Code of Federal Regulations, Certificate of Compliance GDP-1 is hereby amended. Specifically, within Technical Safety Requirement (TSR) 2.6.4.1, "Criticality Accident Alarm System (CAAS)," the "APPLICABILITY" and "BASIS" statements for Limiting Condition of Operation (LCO) 2.6.4.1b, are modified to read as proposed in your application, with the addition of the word "temporary" before the word "activities," in the third sentence of the "BASIS" statement. This change will allow temporary areas of localized CAAS inaudibility, due to activities that generate high noise levels, to be treated the same as permit-required confined spaces, to provide notification of a CAAS alarm. This will be accomplished by employing a "buddy system" requiring one person who is outside the area of inaudibility to maintain contact with personnel inside the area to notify them of a CAAS alarm. This approval also constitutes the granting of an exclusion from the requirements of 10 CFR 76.89, as also requested in your application, with the addition of the word "temporary" before the word "activities" in the first sentence of the exclusion as requested.

The addition of the word "temporary" to the "BASIS" statement and exclusion was agreed to in a telephone conversation between Steve Cowne, USEC, and Dennis Morey, U.S. Nuclear Regulatory Commission (NRC), on July 26, 2006.

Accordingly, Condition 9 is revised to include the date July 19, 2006.

All other conditions of Certificate of Compliance GDP-1 shall remain the same.

This amendment is effective upon issuance of this letter.

Enclosed are copies of the revised Certificate of Compliance and the staff's Compliance Evaluation Report that describes the basis for the staff's review and conclusion.

If there are any questions regarding this action, please contact the Project Manager, Dan E. Martin, by telephone at (301) 415-7254, or by email at dem1@nrc.gov.

In accordance with 10 CFR 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 (PARS) component of NRC's document system Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Gary S. Janosko, Chief
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket: 70-7001
Certificate: GDP-1
Amendment 8

Enclosures: 1. Compliance Evaluation Report
2. Certificate of Compliance GDP-1

cc: Steven A. Toelle, USEC-Headquarters
Randall M. DeVault, DOE-Oak Ridge
Steve Penrod, Paducah

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Closes TAC NO. L52578

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Compliance Evaluation Report

DOCKET NUMBER: 70-7001

CERTIFICATE HOLDER: United States Enrichment Corporation
Paducah Gaseous Diffusion Plant
Paducah, KY

SUBJECT: COMPLIANCE EVALUATION REPORT: CERTIFICATE
AMENDMENT REQUEST DATED JULY 19, 2006, CHANGE TO
TECHNICAL SAFETY REQUIREMENT 2.6.4.1b, CRITICALITY
ACCIDENT ALARM SYSTEM (CAAS) AUDIBILITY (TAC L52578)

PROPOSED CHANGES

This certificate amendment request (CAR) was submitted by letter dated July 19, 2006, to the U.S. Nuclear Regulatory Commission (NRC). The principal purpose of this request is to change Technical Safety Requirement (TSR) 2.6.4.1 to allow the Paducah Gaseous Diffusion Plant (PGDP), operated by the United States Enrichment Corporation (USEC), to provide criticality accident alarm system (CAAS) alarm notification to personnel in localized temporary areas of high noise, produced by other activities, by employing a "buddy system." This would be accomplished by changing the APPLICABILITY and BASIS statements of Limiting Condition of Operation (LCO) 2.6.4.1b. The changes would add the text "and localized areas of inaudibility" following "confined spaces," in the APPLICABILITY statement, and add "and localized areas of inaudibility resulting from temporary activities that generate high noise levels" following "confined spaces," in the BASIS statement. On July 26, 2006, Steve Cowne, USEC, agreed to the addition of the word "temporary" before "activities" in the "BASIS" statement.

The revised APPLICABILITY and BASIS statements would read as follows (new text is bolded):

APPLICABILITY: In areas of the facilities listed in 2.6.4.1a where the maximum foreseeable absorbed dose in free air exceeds 12 rad, except areas in permit-required confined spaces **and localized areas of inaudibility**.....

BASIS: CAAS is used to warn plant personnel of a criticality or radiation accident. This system is designed to detect radiation and provide a distinctive, audible signal which will alert personnel to move from work areas which are potentially affected. Audibility is not provided in permit-required confined spaces **and localized areas of inaudibility resulting from temporary activities that generate high noise levels**. A "buddy system" is used to ensure personnel working in these areas are notified of alarms in order to evacuate. One person remains outside the area and maintains contact with personnel in the area. Evacuation of the area of inaudibility and restricting access to those areas will eliminate the potential for increased consequences due to personnel not hearing an alarm.....

The proposed TSR changes are requested in conjunction with a request for an exclusion, as permitted by 10 CFR 76.89, at NRC discretion. The requested exclusion is stated below, including the addition of the word "temporary" before "activities," as agreed to by Steve Cowne, USEC, on July 26, 2006:

In lieu of an audible criticality accident monitoring system in localized areas of inaudibility resulting from temporary activities that generate high noise levels, a buddy system shall be used. The buddy system shall require that one person remain outside the area (area of inaudibility) in contact with personnel inside the area to notify them of a CAAS alarm.

The combined effect of the requested changes is to allow USEC to employ a buddy system, to provide CAAS alarm notification, to personnel in areas of high ambient noise produced by other activities, in the same manner as currently allowed for confined spaces. The changes would apply only to the non-cascade facilities which are addressed by TSR 2.6.4.1. These changes are not requested for, and would not apply to, cascade facilities.

BACKGROUND

The proposed changes would eliminate a situation causing USEC to cease activities in building C-400 while the Department of Energy (DOE) conducts core drilling in approximately 45 sites on the south side of C-400. The DOE drilling activity is a high priority activity in support of groundwater plume mapping and eventual groundwater remediation. The drilling equipment, when operated, produces ambient noise making the CAAS alarm system inaudible in the immediate area (out to about 75 feet) of the drill rig. Currently, when the drill rigs are operated within the CAAS immediate evacuation area (the 12 rad zone), USEC must enter LCO 2.6.4.1b which requires cessation of activities in Building C-400.

To accommodate the current conflict, USEC has been ceasing operations in Building C-400 from 1400 hours to 0200 hours the following day, and on weekends. DOE has been restricted to performing its drilling operations in these time frames. The result is a loss of efficiency and an increase in cost in the DOE drilling operation, and restrictions on USEC's use of Building C-400. There is also concern over meeting a schedule for the drilling which DOE is committed to achieve, and bound to under an agreement with the Kentucky Department of Environmental Protection (KDEP).

Although USEC's proposed changes are stimulated by the current situation, there may be unanticipated future needs to deal with temporary ambient equipment noise making the CAAS alarm system inaudible. Therefore, USEC has asked for approval of the changes on a permanent basis.

DISCUSSION

The proposed changes would allow the use of a "buddy system" to provide an alternative means of notifying personnel, located within localized areas of inaudibility, of a CAAS alarm. USEC states that the buddy system will require that one person remain outside the area of inaudibility, in contact with personnel inside the area, to notify them if a CAAS alarm occurs. The use of a buddy system is consistent with current TSR requirements for non-cascade facilities that allow buddy system use for permit-required confined spaces. USEC is experienced in the use of a buddy system, as currently allowed for such confined spaces. USEC intends to determine the appropriate method of contact (e.g., visual, voice, radio, or physical) considering the work to be performed, the location of the work, and the personnel performing the work.

USEC states that recent industry guidance contained in ANSI/ANS 8.3-1997, "Criticality Accident Alarm System," indicates that for high areas with high background noise or mandatory hearing protection, visual signals or other alarm means should be considered. The buddy

system will require contact with entrants into high noise areas to notify them of a CAAS alarm. USEC states that the delay in notification introduced by use of the buddy system for localized areas of inaudibility will be the same or less than the delay associated with use of the buddy system for confined spaces (i.e., on the order of seconds), and will not result in an increase in dose over the currently approved practice of using the buddy system for confined spaces. USEC points out that the probability of an inadvertent criticality event is low, and maintained low, due to the Paducah GDP's nuclear criticality safety program, and concludes that the risk to personnel associated with criticality events will not increase as a result of the proposed TSR changes and exclusion. The staff agrees with USEC's conclusion.

The Paducah GDP's current procedures require that potential high noise areas be evaluated for impact on CAAS audibility and ensure that the boundaries of localized areas of inaudibility will be defined so the buddy system can be employed as necessary. USEC states that existing procedures will be revised to specifically address the extension of the buddy system to localized areas of inaudibility, and appropriate training will be conducted to ensure personnel understand their responsibilities for implementing the buddy system.

USEC's application also provides associated changes to the Safety Analysis Report that USEC has evaluated under the requirements of 10 CFR 76.68 and determined do not require prior NRC approval. The staff has reviewed these changes and finds them consistent with USEC's request.

It is concluded that USEC's proposal to modify TSR 2.6.4.1 is acceptable, and that the proposed change is consistent with the requirements of 10 CFR Part 76 and should be approved. Similarly, the staff recommends approval of the companion request for an exclusion as provided for by 10 CFR 76.89.

ENVIRONMENTAL REVIEW

Approval of this amendment is subject to the categorical exclusion provided in 10 CFR 51.22(c)(19) and will not have a significant impact on the human environment. Therefore, in accordance with 10 CFR 51.22(b), neither an environmental assessment nor an environmental impact statement is required for the proposed action.

CONCLUSION

Based on review and evaluation of the information provided by USEC in its CAR, dated July 19, 2006, the NRC staff finds that the proposed revision to Paducah TSR 2.6.4.1, is acceptable, is in compliance with the requirements of 10 CFR Part 76, and should be approved. The staff also recommends approval of USEC's request for an exclusion as provided for by 10 CFR 76.89.

Principal Contributors:

Dan E. Martin
Kevin Morrissey

Certificate of Compliance