



November 21, 2008
GDP 08-0026

Mr. Michael F. Weber
Director, Office of Nuclear Material Safety and Safeguards
Attention: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

**Paducah Gaseous Diffusion Plant (PGDP)
Docket No. 70-7001, Certificate No. GDP-1
Certificate Amendment Request (CAR) – Technical Safety Requirement (TSR) Change to Revise
Criticality Accident Alarm System Controls at the Paducah Gaseous Diffusion Plant (PGDP)**

Dear Mr. Weber:

In accordance with 10 CFR 76.45, the United States Enrichment Corporation (USEC) hereby submits a request for amendment to the Certificate of Compliance for PGDP. This CAR proposes to revise Technical Safety Requirements (TSRs) associated with the Criticality Accident Alarm System (CAAS). This proposed change will allow a buddy system to be used to alert personnel of a criticality in localized areas of inaudibility and will extend the CAAS surveillance frequency. Since this proposed change will require Nuclear Regulatory Commission (NRC) approval for an exclusion from CAAS audibility requirements, USEC is also submitting this request in accordance with 10 CFR 76.89(a).

USEC previously submitted an identical CAAS exclusion request for non-cascade facilities addressed in TSR 2.6.4.1b (Reference 1). This previous request was limited to facilities addressed in TSR 2.6.4.1b because it was initiated at the request of the Department of Energy (DOE) on an urgent basis. This change was needed to assist DOE in completing state mandated environmental remediation at PGDP. NRC subsequently approved this exclusion request (Reference 2). USEC is now requesting to extend this previously approved CAAS exemption to facilities addressed in TSRs 2.1.4.5b, 2.2.4.3b, 2.3.4.7b, and 2.4.4.2b. The justification for this CAAS exclusion request is identical to the request that was previously approved by NRC in Reference 2.

This proposed change will also extend the CAAS surveillance frequencies specified in TSRs 2.1.4.5b, 2.2.4.3b, 2.3.4.7b, 2.4.4.2b, and 2.6.4.1b to conform to the most current revision of ANSI/ANS 8.3.

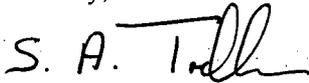
Enclosure 1 contains the Oath and Affirmation. Enclosure 2 provides a detailed description and justification for the proposed change. The justification provided in Enclosure 2 also applies to the CAAS exclusion request. Enclosure 3 is a copy of the revised TSR pages associated with this request for NRC approval. Enclosure 3 also contains related changes to the SAR that were evaluated in accordance with 10 CFR 76.68 and were determined to not require prior NRC approval. Enclosure 4 contains the basis for USEC's determination that the proposed change associated with the CAR is not significant.

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This proposed change is needed because the current CAAS TSR controls place a burden on plant operations without a commensurate safety benefit. When CAAS becomes inaudible in localized areas due to temporary high noise activities, current TSRs require fissile material operations be stopped. Extending use of the buddy system to other TSR controlled areas will allow operations to continue by providing an alternate method of alerting personnel if a criticality was to occur. The CAAS surveillance frequency change is needed because the current TSRs require a CAAS surveillance frequency that is more frequent than is required to ensure CAAS operability or to conform to industry standards. USEC requests NRC review of this CAR as soon as practical. The amendment should become effective 30 days after issuance.

Should you have any questions related to this submittal, please contact me at (301) 564-3250. There are no new commitments contained in this submittal.

Sincerely,



Steven A. Toelle
Director, Regulatory Affairs

- References:
1. Letter to Jack R. Strosnider (NRC) from Steven A. Toelle (USEC), "Criticality Accident Alarm System (CAAS) Exclusion Request and Certificate Amendment Request to Revise CAAS Audibility Requirements for Non-Cascade Facilities", GDP 06-0039, dated July 19, 2006.
 2. Letter from Gary S. Janosko (NRC) to Russell Starkey (USEC), "Amendment 8 -Paducah Gaseous Diffusion Plant – Change to TSR Requirement 2.6.4.1b, Criticality Accident Alarm System (CAAS) Audibility (TAC L52578), dated July 27, 2006.

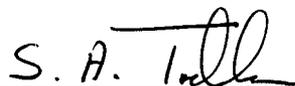
- Enclosures:
1. Oath and Affirmation
 2. United States Enrichment Corporation (USEC), Certificate Amendment Request – Technical Safety Requirement (TSR) Change to Revise Criticality Accident Alarm System Controls at PGDP, Detailed Description and Justification of the Changes
 3. Certificate Amendment Request, Paducah Gaseous Diffusion Plant, Letter GDP 08-0026, Removal/Insertion Instructions
 4. United States Enrichment Corporation (USEC), Certificate Amendment Request – Technical Safety Requirement (TSR) Change to Revise Criticality Accident Alarm System Controls at PGDP, Significance Determination

cc: J. Henson, NRC Region II Office
M. Miller, NRC Sr. Resident Inspector - PGDP
M. Raddatz, NRC Project Manager

Enclosure 1
GDP 08-0026
Oath and Affirmation

OATH AND AFFIRMATION

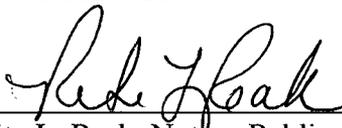
I, Steven A. Toelle, swear and affirm that I am the Director, Regulatory Affairs of the United States Enrichment Corporation (USEC), that I am authorized by USEC to sign and file with the Nuclear Regulatory Commission this Certificate Amendment Request for the Paducah Gaseous Diffusion Plant addressing revisions to the Technical Safety Requirements described in USEC letter GDP 08-0026, that I am familiar with the contents thereof, and that the statements made and matters set forth therein are true and correct to the best of my knowledge, information, and belief.



Steven A. Toelle

On this 21st day of November, 2008, the individual signing above personally appeared before me, is known by me to be the person whose name is subscribed to within the instrument, and acknowledged that he executed the same for the purposes therein contained.

In witness hereof I hereunto set my hand and official seal.



Rita L. Peak, Notary Public
State of Maryland, Montgomery County
My commission expires December 1, 2009

Enclosure 2
GDP 08-0026

USEC-01
Certificate Amendment Request
Technical Safety Requirement (TSR) Change to Revise
Criticality Accident Alarm System Controls at PGDP
Detailed Description and Justification of the Changes

**United States Enrichment Corporation (USEC)
Certificate Amendment Request
Technical Safety Requirement (TSR) Change to Revise
Criticality Accident Alarm System Controls at PGDP
Detailed Description and Justification of the Changes**

Description of Change

This proposed change will revise the applicability and basis statements in TSRs 2.1.4.5b, 2.2.4.3b, 2.3.4.7b and 2.4.4.2b to indicate that CAAS audibility requirements do not apply to localized areas of inaudibility. This proposed change will also revise the CAAS surveillance frequency in TSRs 2.1.4.5b, 2.2.4.3b, 2.3.4.7b, 2.4.4.2b and 2.6.4.1b from quarterly to annually and remove reference to the "new" CAAS system in the applicability statements.

The changes shown below are shown for TSR 2.1.4.5b but are typical for all TSRs being changed. New wording is shown as underlined and deleted wording is shown as a strikeout. For clarity, only the affected portions of the TSR are shown below.

APPLICABILITY: In areas where the maximum foreseeable absorbed dose in free air exceeds 12 rad, except areas in permit-required confined spaces and localized areas of inaudibility. ~~This LCO is applicable when the new criticality accident alarm system supplied by air accumulators is operable.~~

SURVEILLANCE REQUIREMENTS:

Surveillance	Frequency
SR 2.1.4.5b-1 Test the CAAS and building horns.	Quarterly <u>Annually</u>

BASIS:

The 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 those work areas which are potentially affected. Audibility is not provided for areas in permit-required confined spaces and localized areas of inaudibility resulting from 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 communication 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 complete revised TSR pages are shown in Enclosure 3, pages 2.1-24, 2.1-25, 2.1-26, 2.2-17, 2.2-18, 2.2-18a, 2.3-21, 2.3-22, 2.4-19, 2.4-20, 2.4-20a, 2.6-6, 2.6-7, and 2.6-8. The changes are noted with revision bars in the right hand margin. Please note that the CAAS exclusion portion of the above change was previously incorporated into TSR 2.6.4.1b in accordance with References 1 and 2.

Reason for the Change

Current CAAS TSRs for cascade facilities require that fissile operations be suspended if any area within the 12 rad zone does not have an audible criticality accident alarm system. The TSRs currently allow a "buddy system" to be used in lieu of an audible criticality accident alarm for areas that are permit-required confined spaces. This proposed change will allow the "buddy system" to also be applied to localized areas of inaudibility that result from activities that generate high noise levels. This will provide a mechanism to allow activities that generate high noise levels to be conducted safely without suspending facility operations. USEC has considered installing additional CAAS horns to provide audibility for areas that are affected by temporary noise sources; however, this alternative is not practical because the work activities generating high noise areas are transient in nature. Installation of additional CAAS horns to compensate for these high noise levels could also create sound levels that could potentially result in hearing damage to personnel who might be working in the area.

USEC previously obtained NRC approval to incorporate an identical change into TSR 2.6.4.1b [Reference 2] to assist DOE in completing state mandated environmental remediation at the PGDP. DOE needed to perform core drilling activities that generated high noise levels that could prevent personnel in the immediate vicinity of the equipment from hearing CAAS horns in the unlikely event of a criticality. Since activities that generate high noise levels can also occur in facilities addressed in TSRs 2.1.4.5b, 2.2.4.3b, 2.3.4.7b and 2.4.4.2b, USEC is now requesting to extend this previously approved CAAS exemption to facility areas controlled by these TSRs. The justification for this CAAS exclusion request is identical to the request that was previously approved by NRC in Reference 2.

USEC is also requesting to revise CAAS TSR controls to change the surveillance frequency from quarterly to annually. Current industry standards only require annual surveillance testing and PGDP experience has shown that CAAS reliability justifies a longer surveillance interval. Requiring CAAS testing more frequently than is needed to ensure CAAS operability or to conform to industry standards creates an unnecessary burden on plant operations without a commensurate safety benefit. This proposed change will extend CAAS surveillance frequencies to conform to the most current revision of ANSI/ANS 8.3.

Justification of the Changes

The justification for the proposed revisions to CAAS audibility requirements, CAAS surveillance frequency and removing reference to the new criticality accident alarm system is provided below.

CAAS Audibility

The "buddy system" proposed will provide an alternative means of notifying personnel within localized areas of inaudibility of a CAAS alarm. These localized areas of inaudibility may result from activities that generate high noise levels. The "buddy system" will require that one person (an attendant) remain outside the area of inaudibility in contact with personnel (entrants) inside the area to notify them if a CAAS alarm occurs. The "buddy system" will be consistent with current TSR requirements that allow use of the "buddy system" to notify personnel in permit-required confined spaces that a CAAS alarm has occurred. The appropriate method of contact between the attendant and entrant(s) [e.g., visual, voice, radio, physical] will be determined considering the work to be performed, the location of the work, and the personnel performing the work.

Recent industry guidance contained in ANSI/ANS 8.3-1997, "Criticality Accident Alarm System," indicates that for areas with high background noise or mandatory hearing protection, visual signals or other alarm means should be considered. The application of the "buddy system" to localized areas of inaudibility will provide an effective alternate alarm means for high background noise areas. The "buddy system" will require the attendant to be in contact with entrants into high noise areas and to notify the entrants to evacuate if a CAAS alarm occurs. The delay in notification introduced by the "buddy system" versus hearing a CAAS horn directly will be the same or less than the delay associated with using the "buddy system" for permit-required confined spaces (i.e., on the order of seconds). As a result, using the "buddy system" for high noise areas will not result in an increase in dose over the currently approved practice of using the "buddy system" for permit-required confined spaces. In addition, the PGDP nuclear criticality safety (NCS) program ensures that the probability of an inadvertent criticality event is low based on the design features and administrative controls that have been implemented for activities involving fissile material. The risk to personnel associated with criticality events will not increase as a result of this proposed change.

PGDP's current procedures require that potential high noise areas be evaluated for impact on CAAS audibility. This ensures that the boundary for localized areas of inaudibility will be defined so that the "buddy system" can be applied for the entrants and attendant. 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."

The NCS program described in SAR section 5.2.2.5, Criticality Accident Alarm System Coverage, currently indicates that audibility is not provided in localized areas of inaudibility resulting from temporary activities that generate high noise levels. The NCS program indicates the "buddy system" is used in these areas to ensure personnel are notified of CAAS alarms in order to evacuate. This change was incorporated into the NCS program when NRC approval was obtained to incorporate this CAAS exclusion into the TSR controls for non-cascade facilities (Reference 2).

CAAS Surveillance Frequency

This proposed change will revise the surveillance frequency for the CAAS audibility testing specified in TSRs from quarterly to annually. The current quarterly surveillance frequency is based on the 1986 version of ANSI/ANS 8.3, "American National Standard for Criticality Accident Alarm System". The quarterly surveillance testing of CAAS audibility recommended in this standard was incorporated into the SAR and TSRs during NRC's initial certification of PGDP. In 1997, ANS approved and released a new revision of ANSI/ANS 8.3. The new standard revised the recommended quarterly testing of the CAAS signal generators to allow testing annually. To ensure that the PGDP CAAS will remain as reliable with annual audibility testing as with quarterly testing, Engineering performed a review of the CAAS failure history. The review demonstrated that failures that cause the CAAS to be disabled or fail to function as designed are infrequent with only one instance of CAAS being discovered inoperable during quarterly surveillances in over seven years. This failure occurred nearly three years ago and was caused by an inadequately designed power switch which has been corrected. The details of the CAAS performance history review are provided below.

A review of Event Reports from 2000 until October 2008 was performed to identify instances where the CAAS was disabled or failed to function as designed. The review identified three Event Reports associated with CAAS inoperability that were identified during surveillance testing and were not otherwise self revealing. Self revealing events are not a significant factor for extending the surveillance interval because they would be promptly detected regardless of the surveillance frequency.

The first event occurred over eight years ago and involved the failure of a temperature control system that was designed to maintain a C-746Q-1 Waste Storage Facility CAAS cluster above the manufacturer's minimum recommended temperature of 14 °F. It was not known if this event had actually caused CAAS to become inoperable but the ambient temperature had been below 14 °F following the last successful surveillance. As a result, it was assumed that the cluster may have been disabled by cold weather and this was reported as Event Report ER 00-04 (March 30, 2000). Modifications were made to the CAAS temperature control system to correct this failure. The second event that occurred over seven years ago was documented in Event Report ER 01-01 (February 2001). This CAAS failure was the result of the C-337-A building horns being found plugged and unable to meet audibility requirements. Plant modifications were made to add strainers to prevent debris from entering the horns, and new preventative maintenance programs implemented to periodically inspect and clean the strainers. The third event occurred approximately three years ago and was reported as Event Report ER 05-03 (November 29, 2005). This event involved an instance where the C-337 building CAAS horns were found inoperable due to an incorrectly positioned switch. This was not a component failure, but a design issue since the switch did not provide positive indication that the CAAS horns would function as required. The deficiency has been corrected with the design and installation of an indicator light that positively informs the operator that the switch is in the correct position.

Three additional events that occurred over five years ago were also identified but they were self revealing and would be promptly detected regardless of the surveillance frequency. Operators were alerted to these failures when trouble alarms were received in the C-300 Central Control Facility. As a result, the discovery of these three events would not be dependent on the surveillance frequency. These events were documented in Event Reports ER 00-05 (April 10, 2000), ER 00-08 (August 30, 2000) and ER 02-03 (December 28, 2002).

In addition to reviewing Event Reports, the PGDP corrective action system database was searched to identify CAAS audibility system issues. Each issue was reviewed for component failures, rework issues, and other deficiencies that may impact CAAS audibility system reliability and operability. Except for the Event Reports identified above, none of the component failures or other issues identified (e.g., cluster backup battery low voltages, beacon failures, electronic horns failures, UPS battery failures, etc.) resulted in the CAAS system being declared inoperable. In all cases the failed component had a redundant component that continued to function and provide audibility. The CAAS system is not specifically designed to have redundancy for all potential failures; however, this review demonstrates the CAAS design is robust. The component failures that have occurred, except for the event reports discussed above, have not caused the CAAS to be disabled or fail to function as designed.

The search did not identify instances where the CAAS system was ever unknowingly disabled other than the instance documented in Event Report ER 05-03. Instances where disabled components were discovered during post maintenance testing (PMT) were identified; however, the purpose of PMT is to identify these types of problems prior to placing the CAAS inservice.

The above review of CAAS failure history demonstrates that failures that cause the CAAS to be disabled or fail to function as designed are infrequent with no instances occurring in almost three years. Except for the instance involving the improperly design power switch (ER 05-03) there have not been any instances where CAAS has been disabled or failed to function as designed in over seven years. This reliability history provides adequate assurance that CAAS will remain operable between annual surveillance intervals. Therefore, the proposed change in surveillance frequency for CAAS audibility from quarterly to annually will not impact CAAS reliability and will not adversely affect how the system will perform its safety function.

Remove Reference To The New Criticality Accident Alarm System

The applicability statements for TSRs 2.1.4.5b, 2.2.4.3b, 2.3.4.7b, 2.4.4.2b and 2.6.4.1b contain words indicating that the TSR is only applicable when the “new” criticality accident alarm system is operable. These words were incorporated into the TSR applicability statement to account for modifications that were being made to the CAAS system. The word “new” was used during the installation time period to clarify that these TSR controls only applied to a CAAS after installations were completed. There is no longer any reason to continue to refer to the “new” systems since the modifications have been completed and maintained in accordance with these TSRs. This change is administrative only and is only being done to clean up text that no longer is relevant. Since this change does not have any affect on the current TSR controls or how they are implemented, this change will not be discussed further.

Changes to the SAR that are associated with this proposed change are provided in Enclosure 3. SAR Chapter 1, Appendix A is being revised to reference the 1997 edition of ANSI/ANS 8.3 and to delete reference to an exception that requires CAAS to withstand seismic stress. The 1986 edition of ANSI/ANS 8.3 which currently applies to PGDP requires CAAS to withstand seismic stress. An exception to this requirement was added to the SAR because the PGDP CAAS does not meet this requirement. The 1997 edition of ANSI/ANS 8.3 that is being adopted does not have the seismic requirement and this exception is no longer needed. SAR 3.12.6.3 is being revised to change the surveillance frequency from quarterly to annually. Changes to the TSR basis statements also include the addition of SAR section 5.2.2.5, Criticality Accident Alarm System Coverage, as a reference for the CAAS TSR Basis. A spelling correction in the basis for TSR 2.4.4.2b is also being made. These changes have been evaluated under 10 CFR 76.68, and determined not to require NRC review and approval. The changes are noted with a revision bar in the right-hand margin.

Certificate Amendment Request Paducah Gaseous Diffusion Plant Letter GDP 08-0026 Removal/Insertion Instructions	
Remove Pages	Insert Pages
APPLICATION FOR UNITED STATES NUCLEAR REGULATORY COMMISSION CERTIFICATION VOLUME 1	
SAR Chapter 1, Appendix A Page A-2	SAR Chapter 1, Appendix A Page A-2
SAR Section 3.12 Page 3.12-11	SAR Section 3.12 Page 3.12-11
APPLICATION FOR UNITED STATES NUCLEAR REGULATORY COMMISSION CERTIFICATION VOLUME 4	
TSR Section 2.1 Pages 2.1-24, 2.1-25, 2.1-26	TSR Section 2.1 Pages 2.1-24, 2.1-25, 2.1-26
TSR Section 2.2 Pages 2.2-17, 2.2-18, 2.2-18a	TSR Section 2.2 Pages 2.2-17, 2.2-18, 2.2-18a
TSR Section 2.3 Pages 2.3-21, 2.3-22	TSR Section 2.3 Pages 2.3-21, 2.3-22
TSR Section 2.4 Pages 2.4-19, 2.4-20, 2.4-20a	TSR Section 2.4 Pages 2.4-19, 2.4-20, 2.4-20a
TSR Section 2.6 Pages 2.6-6, 2.6-7, 2.6-8	TSR Section 2.6 Pages 2.6-6, 2.6-7, 2.6-8

Proposed

1.3 ANSI/ANS 3.1, Selection, Qualification, and Training of Personnel for Nuclear Power Plants, 1987 Edition

PGDP satisfies only the following section of this standard:

Section 4.3.3 - The qualifications of the Radiation Protection Manager identified in SAR Section 6.1 satisfy the requirements of this section of the standard.

1.4 ANSI/ANS 3.2, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants, 1994 Edition

The extent to which PGDP satisfies the requirements of this standard is outlined in SAR Section 6.11.1 and Appendix B to SAR Section 6.11.

1.5 ANSI/ANS 8.1, Nuclear Criticality Safety in Operations With Fissionable Materials Outside Reactors, 1983 Edition

PGDP satisfies the requirements of this standard.

For references to this standard, see SAR Sections 4.3.2.6, 5.2.2.1, 5.2.2.3, 5.2.3.2, 5.2.4.1, and Table 6.9-1.

1.6 ANSI/ANS 8.3, Criticality Accident Alarm System, 1997 Edition

The recommendations of this standard were used as guidance only for the design of the CAAS. PGDP satisfies the requirements of this standard with the following exceptions:

Section 4.4.1 - The CAAS alarm is not audible in all permit-required confined spaces, cell housings associated with cells that are running, 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.

Section 4.4.2 - An alarm signal with a complex sound wave or modulation is not provided.

Section 5.3 - Delete text.

Section 5.5 - Not all CAAS alarms are capable of producing the desired signal within one-half second of activation by the minimum accident of concern. All CAAS alarms are capable of producing the alarm signal within two seconds of activation by the minimum accident of concern.

Section 7.2.2 - Instead of acquainting all employees with the alarm signal by actual demonstration at their work location, a recording of the alarm signal will be used to familiarize employees.

For references to this standard, see SAR Sections 3.12.6, 3.15.7.1, and 4.3.2.6.

3.12.6.2 Instrumentation, Controls, and Alarms

The detector module monitors three alarms states: Normal, Fault Alarms, and Radiation Alarms. If only one detector module alarms, the cluster logic module considers it a malfunction and generates a trouble alarm on the RASC. If two detector modules alarm at the same time, the cluster logic module considers it genuine and generates a radiation alarm. If two detector modules are already in the Fault State and the third detector module alarms, the cluster logic module generates a Radiation Alarm.

When a cluster enters a Radiation Alarm condition, the following events occur:

- A signal is transmitted to the RASC.
- The radiation warning lights are actuated.
- The CAAS building horns are actuated.
- The CAAS building horns and radiation warning light(s) in slaved buildings, if applicable, are actuated.

A trouble alarm will be transmitted to the RASC whenever any of the following occurs:

- Line power failure
- Module removal
- Cable separation
- Loss of air accumulator supply pressure (where applicable)
- Loss of signal at a detector module
- Indication of radiation detection by only one detector module
- Loss of power to horn circuits and UPS (where applicable)
- External temperature below cluster's specified minimum operating temperature (where applicable).

3.12.6.3 Maintenance and Testing Requirements

Annual verification of operability of the clusters is performed using a radiation source. Annual verification of local alarm operability is performed. An integrated test of the entire CAAS is performed on an annual basis in accordance with ANSI/ANS 8.3, Section 6.4.

Accumulator air pressure is checked quarterly to verify it is greater than that necessary to sound the horns for at least two minutes. All CAAS batteries/UPSs are tested annually and the horns are sounded annually.

Proposed

SECTION 2.1 SPECIFIC TSRS FOR TOLL TRANSFER AND SAMPLING FACILITY C-360

2.1.4 GENERAL LIMITING CONDITIONS FOR OPERATION

2.1.4.5 CRITICALITY ACCIDENT ALARM SYSTEM

LCO 2.1.4.5b: Criticality accident alarm shall be operable (audible).

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

ACTIONS:

Condition	Required Action	Completion Time
<p>A. Area does not have an audible criticality accident alarm.</p>	<p>A.1 Implement the following for areas, equipment, or processes where a criticality accident could result in a maximum foreseeable dose exceeding 12 rad in the area of inaudibility and LCO 2.1.4.5a applies.</p>	<p>Immediately</p>
	<p>A.1.1 Discontinue movement of cylinders containing UF₆ enriched to ≥ 1 wt % ²³⁵U.</p>	
	<p><u>AND</u> A.1.2 Complete the current transfer and/or sampling operation and place transfer or sampling autoclaves processing cylinders containing UF₆ enriched to ≥ 1 wt % ²³⁵U in Mode-2.</p>	
	<p><u>AND</u> A.1.3 Roll cylinders containing UF₆ enriched to ≥ 1 wt % ²³⁵U with valves not in the 12 o'clock position to place the cylinder valve in the 12 o'clock position.</p>	
	<p><u>AND</u> A.1.4 Discontinue movement of uranium enriched to ≥ 1 wt % ²³⁵U.</p>	
	<p><u>AND</u> A.2.1 Evacuate area of inaudibility applicable to this LCO.</p>	
	<p><u>AND</u> A.2.2 Restrict access to area evacuated in A.2.1.</p>	
	<p><u>AND</u> A.3 Provide personnel allowed into the area that would be restricted under Action A.2.1 with an alternate means of criticality alarm notification, such as a device that will alarm on sensing a 10mr/hr dose rate, or a radio in constant communication with the Central Control Facility.</p>	<p>Immediately</p>
<p>B. Area does not have an audible criticality accident alarm.</p>	<p>B.1 Restore criticality accident alarm to operable status. TSR 1.6.2.2d is not applicable.</p>	<p>Prior to reinitiating activities</p>

Proposed

**SECTION 2.1 SPECIFIC TSRs FOR TOLL TRANSFER AND SAMPLING
FACILITY C-360**

2.1.4 GENERAL LIMITING CONDITIONS FOR OPERATION

2.1.4.5 CRITICALITY ACCIDENT ALARM SYSTEM (continued)

SURVEILLANCE REQUIREMENTS:

Surveillance		Frequency
SR 2.1.4.5b-1	Test the CAAS and building horns.	Annually
SR 2.1.4.5b-2	Verify that the CAAS air accumulators supply pressure to the building horns is at least 125 psig.	Quarterly
SR 2.1.4.5b-3	Verify that the condition of the battery backups to the electronic horns is sufficient to power the horns for at least 120 seconds.	Annually

BASIS:

The 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 those work areas which are potentially affected. Audibility is not provided for areas 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 communication 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 design of the system, three detection modules per cluster, provides protection for criticality events even with partial losses of required equipment. The CAAS provides detection coverage in most areas by using an overlapping pattern of individual cluster units. Criticality concerns with the C-360 facility are associated with movement of fissile materials. The action items maintain the facility in steady state operations to limit the potential for these concerns to the extent possible. The alarm signal is provided by sounding building horns which sound upon a signal from any cluster. Providing another means of coverage (i.e., portable detector/alarm, personal alarm device, etc.), restricting operations, or restricting access to the area in the event of the loss of alarm will establish protection.

The CAAS air accumulators provide for 120 seconds of horn actuation when at their minimum acceptable pressure of 125 psig. Electronic horns are also installed in some areas. These horns have battery backup power supplies which will provide for at least 120 seconds of horn actuation even if off-site power is lost.

Proposed

**SECTION 2.1 SPECIFIC TSRS FOR TOLL TRANSFER AND SAMPLING
FACILITY C-360**

2.1.4 GENERAL LIMITING CONDITIONS FOR OPERATION

2.1.4.6 CRITICALITY ACCIDENT ALARM SYSTEM (continued)

BASIS (continued):

Requiring the cylinders be rotated to place the cylinder valve in the 12 o'clock position ensures that if the outage continues long enough that UF₆ solidifies in the affected cylinder(s), the cylinder valve will be above the surface of the solid.

The annual surveillance of the CAAS building horns consists of placing the cluster in the test mode with a keyswitch, and manually causing two detector modules to generate radiation readings above the alarm setpoint. The cluster electronics determines that this meets the high radiation alarm criteria and propagates a high radiation alarm signal to the rest of the system. This signal activates the high radiation alarm light and bell in C-300 and activates the building CAAS horns. Each horn is qualitatively verified to be operating. This test is a horn functional test and each module combination is tested to generate the high radiation signal. [SAR Section 3.15.7.1, 4.3.2.6, 5.2.2.5]

Proposed

SECTION 2.2 SPECIFIC TSRS FOR UF₆ FEED FACILITIES (C-333-A AND C-337-A)

2.2.4 GENERAL LIMITING CONDITIONS FOR OPERATION

2.2.4.3 CRITICALITY ACCIDENT ALARM SYSTEM (continued)

LCO 2.2.4.3b: Criticality accident alarm shall be operable (audible).

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

ACTIONS:

Condition	Required Action	Completion Time
A. Area does not have an audible criticality accident alarm.	A.1 Implement the following for areas, equipment, or processes where a criticality accident could result in a maximum foreseeable dose exceeding 12 rad in the area of inaudibility and LCO 2.2.4.3a or 2.4.4.2a applies.	Immediately
	A.1.1 Discontinue movement of cylinders containing UF ₆ enriched to ≥ 1 wt % ²³⁵ U.	
	A.1.2 Cylinder processing with UF ₆ enriched to ≥ 1 wt % ²³⁵ U will be discontinued. [In-progress cylinder operating cycle(s) may be completed, stopped and/or re-started as necessary, as long as the in-progress autoclave(s) remain in mode 5, 7, or 8. However, these autoclaves may be placed in mode 2 at any time.]	
	A.1.3 Perform Required Actions A.1.1 through A.1.6 of TSR 2.4.4.2b.	
	A.1.4 Discontinue movement of uranium enriched to ≥ 1 wt % ²³⁵ U.	Immediately
	<u>AND</u>	
	A.2.1 Evacuate area of inaudibility applicable to this LCO.	
A.2.2 Restrict access to area evacuated in A.2.1.	Immediately	
<u>AND</u>		
A.3 Provide personnel allowed into the area that would be restricted under Action A.2.1 with an alternate means of criticality alarm notification, such as a device that will alarm on sensing a 10 mr/hr dose rate, or a radio in constant communication with the Central Control Facility.		
B. Area does not have an audible criticality accident alarm.	B.1 Restore criticality accident alarm to operable status. TSR 1.6.2.2d is not applicable.	Prior to reinitiating activities

Proposed

SECTION 2.2 SPECIFIC TSRS FOR UF₆ FEED FACILITIES (C-333-A AND C-337-A)

2.2.4 GENERAL LIMITING CONDITIONS FOR OPERATION

2.2.4.3 CRITICALITY ACCIDENT ALARM SYSTEM (continued)

SURVEILLANCE REQUIREMENTS:

Surveillance		Frequency						
SR 2.2.4.3b-1	Test the CAAS and building horns.	Annually						
SR 2.2.4.3b-2	Verify that the CAAS air accumulator supply pressure to the building horns is greater than or equal to that necessary to sound all building horns for at least 120 seconds based on the number of accumulators in service. (Note: The air accumulator supply for C-333-A is in C-333 and the supply for C-337-A is in C-337.)	Quarterly						
	<table border="0"> <tr> <td><u>Number of accumulators in service</u></td> <td><u>Minimum pressure</u></td> </tr> <tr> <td>4</td> <td>137 psig</td> </tr> <tr> <td>3</td> <td>143 psig</td> </tr> </table>	<u>Number of accumulators in service</u>	<u>Minimum pressure</u>	4	137 psig	3	143 psig	
<u>Number of accumulators in service</u>	<u>Minimum pressure</u>							
4	137 psig							
3	143 psig							

BASIS:

The 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 those work areas which are potentially affected. Audibility is not provided for areas 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 design of the system, three detection modules per cluster, provides protection for criticality events even with partial losses of required equipment. The CAAS provides detection coverage in most areas by using an overlapping pattern of individual cluster units. Criticality concerns with the feed facilities are associated with movement of fissionable materials. The action items maintain the facility in steady state operations to limit the potential for these concerns to the extent possible. The alarm signal is provided by sounding building horns which sound upon a signal from any cluster. Providing another means of coverage (i.e., portable detector/alarm, personal alarm device, etc.), restricting operations, or restricting access to the area in the event of the loss of alarms will establish protection.

Proposed

**SECTION 2.2 SPECIFIC TSRS FOR UF₆ FEED FACILITIES (C-333-A AND
C-337-A)**

2.2.4 GENERAL LIMITING CONDITIONS FOR OPERATION

2.2.4.3 CRITICALITY ACCIDENT ALARM SYSTEM (continued)

BASIS (continued):

The CAAS air accumulators provide for 120 seconds of horn actuation when at their minimum acceptable pressure based on the number of accumulators in service. The air accumulator supply for C-333-A is in C-333 and the supply for C-337-A is in C-337.

The annual surveillance of the CAAS building horns consists of placing the cluster in the test mode with a keyswitch, and manually causing two detector modules to generate radiation readings above the alarm setpoint. The cluster electronics determines that this meets the high radiation alarm criteria and propagates a high radiation alarm signal to the rest of the system. This signal activates the high radiation alarm light and bell in C-300 and activates the building CAAS horns. Each horn is qualitatively verified to be operating. This test is a horn functional test and each module combination is tested to generate the high radiation signal. [SAR Section 3.15.7.1, 4.3.2.6, 5.2.2.5]

Proposed

SECTION 2.3 SPECIFIC TSRS FOR PRODUCT AND TAILS WITHDRAWAL FACILITIES

2.3.4 GENERAL LIMITING CONDITIONS FOR OPERATION

2.3.4.7 CRITICALITY ACCIDENT ALARM SYSTEM (continued)

LCO 2.3.4.7b: Criticality accident alarm shall be operable (audible).

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

ACTIONS:

Condition	Required Action	Completion Time
A. Area does not have an audible criticality accident alarm.	A.1 Implement the following for areas, equipment, or processes where a criticality accident could result in a maximum foreseeable dose exceeding 12 rad in the area of inaudibility and LCO 2.3.4.7a applies.	Immediately
	A.1.1 Discontinue movement of cylinders containing UF ₆ enriched to ≥1 wt % ²³⁵ U.	
	<u>AND</u>	
	A.1.2 NaF traps containing uranium enriched to ≥1 wt % ²³⁵ U shall not be handled.	
	<u>AND</u>	
	A.1.3 Waste containing uranium enriched to ≥1 wt % ²³⁵ U shall not be transported.	
	<u>AND</u>	
A.1.4 Discontinue maintenance activities that require breach of containment of equipment containing uranium enriched to ≥ 1 wt % ²³⁵ U.	Immediately	
<u>AND</u>		
A.1.5 Cylinder Filling with UF ₆ enriched to ≥ 1 wt % ²³⁵ U will be discontinued. [In-progress cylinder filling cycle(s) may be completed, stopped, and/or re-started as necessary. Normal operation of withdrawal compressors, condensers, and accumulators is not restricted by this action.]		
<u>AND</u>	Immediately	
A.1.6 Perform Required Actions A.1.1, A.1.2, A.1.3, A.1.4, A.2.1, A.2.2, A.3, B.1 of TSR 2.4.4.2b.		
<u>AND</u>		
A.2.1 Evacuate area of inaudibility	Immediately	
<u>AND</u>		
A.2.2 Restrict access to the area of inaudibility.		
<u>AND</u>	Immediately	
A.3 Provide personnel allowed to enter the area of inaudibility with an alternate means of criticality alarm notification such as a device that will alarm on sensing a 10mr/hr dose rate, or a radio in constant communication with the Central Control Facility.		
B. Area does not have an audible criticality accident alarm.	B.1 Restore criticality accident alarm to operable status.	48 hours (effective when NRC assumes regulatory authority)
	TSR 1.6.2.2d is not applicable.	

Proposed

SECTION 2.3 SPECIFIC TSRs FOR PRODUCT AND TAILS WITHDRAWAL FACILITIES

2.3.4 GENERAL LIMITING CONDITIONS FOR OPERATION

2.3.4.7 CRITICALITY ACCIDENT ALARM SYSTEM (continued)

SURVEILLANCE REQUIREMENTS:

Surveillance	Frequency
SR 2.3.4.7b-1 Test the CAAS and building horns.	Annually
SR 2.3.4.7b-2 Verify that the CAAS air accumulator supply pressure to the building horns is at least 129 psig.	Quarterly

BASIS:

The 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 those work areas which are potentially affected. Audibility is not provided for areas 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 design of the system, three detector modules per cluster, provides protection for criticality events even with partial losses of required equipment. The CAAS also provides detection coverage in most areas by using an overlapping pattern of individual cluster units. Criticality concerns with the product withdrawal facility are associated with the movement of fissionable materials. The action items maintain the facility in steady state operations to limit the potential for these concerns to the extent possible. The alarm signal is provided by sounding building horns which sound upon a signal from any cluster. Providing another means of coverage (i.e., portable detector/alarm, personal alarm device, etc.), restricting operations, or restricting access to the area in the event of the loss of alarms will establish protection. [SAR Sections 3.15.7.1 and 4.3.2.6, 5.2.2.5]

The CAAS air accumulators provide for 120 seconds of horn actuation when at their minimum acceptable pressure of 129 psig. Electronic horns are installed in some areas. These horns have battery backup power supplies which will provide for at least 120 seconds of horn actuation even if off-site power is lost.

The annual surveillance of the CAAS building horns consists of placing the cluster in the test mode with a keyswitch, and manually causing two detector modules to generate radiation readings above the alarm setpoint. The cluster electronics determines that this meets the high radiation alarm criteria and propagates a high radiation alarm signal to the rest of the system. This signal activates the high radiation alarm light and bell in C-300 and activates the building CAAS horns. Each horn is qualitatively verified to be operating. This test is a horn functional test and each module combination is tested to generate the high radiation signal.

Proposed

SECTION 2.4 SPECIFIC TSRS FOR ENRICHMENT CASCADE FACILITIES

2.4.4 GENERAL LIMITING CONDITIONS FOR OPERATION

2.4.4.2 CRITICALITY ACCIDENT ALARM SYSTEM (continued)

SURVEILLANCE REQUIREMENTS:

Surveillance		Frequency														
SR 2.4.4.2b-1	Test the CAAS and building horns.	Annually														
SR 2.4.4.2b-2	Verify that the CAAS air accumulator supply pressure to the building horns is greater than or equal to that necessary to sound all building horns for at least 120 seconds based on the number of accumulators in service.	Quarterly														
	<p style="text-align: center;">C-333/C-337</p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Number of accumulators in service</u></td> <td style="text-align: center;"><u>Minimum pressure</u></td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">137 psig</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">143 psig</td> </tr> </table> <p style="text-align: center;">C-331/C-335</p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Number of accumulators in service</u></td> <td style="text-align: center;"><u>Minimum pressure</u></td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">129 psig</td> </tr> </table> <p style="text-align: center;">C-331/C-335 Tie Line</p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Number of accumulators in service</u></td> <td style="text-align: center;"><u>Minimum pressure</u></td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">121 psig</td> </tr> </table>	<u>Number of accumulators in service</u>	<u>Minimum pressure</u>	4	137 psig	3	143 psig	<u>Number of accumulators in service</u>	<u>Minimum pressure</u>	2	129 psig	<u>Number of accumulators in service</u>	<u>Minimum pressure</u>	1	121 psig	
<u>Number of accumulators in service</u>	<u>Minimum pressure</u>															
4	137 psig															
3	143 psig															
<u>Number of accumulators in service</u>	<u>Minimum pressure</u>															
2	129 psig															
<u>Number of accumulators in service</u>	<u>Minimum pressure</u>															
1	121 psig															

BASIS:

The 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 those work areas which are potentially affected. Audibility is not provided for areas in permit-required confined spaces, cell housings associated with cells that are running, 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. Criticality concerns with the cascade involve freeze-out of UF₆ and moderator introduction. The action items maintain the cascade in steady state operations to limit the potential for these concerns to the extent possible. Ceasing the movement of fissile waste prevents a criticality associated with waste storage. The design of the system, three detector modules per cluster, provides protection for criticality events even with partial losses of required equipment. The alarm signal is provided by sounding building horns which sound upon a signal from any cluster. Providing

SECTION 2.4 SPECIFIC TSRS FOR ENRICHMENT CASCADE FACILITIES

2.4.4 GENERAL LIMITING CONDITIONS FOR OPERATION

2.4.4.2 CRITICALITY ACCIDENT ALARM SYSTEM (continued)

BASIS (continued):

another means of coverage (i.e., portable detector/alarm, personal alarm device, etc.), restricting operations, or restricting access to the area in the event of inaudibility will establish protection. [SAR Sections 3.15.7.1, 4.3.2.6, 5.2.2.5]

The CAAS air accumulators provide for 120 seconds of horn actuation when at their minimum acceptable pressure based on the number of accumulators in service. Electronic horns are also installed in some areas. These horns have battery backup power supplies which will provide for at least 120 seconds of horn actuation even if off-site power is lost.

The annual surveillance of the CAAS building horns consists of placing the cluster in the test mode with a keyswitch, and manually causing two detector modules to generate radiation readings above the alarm setpoint. The cluster electronics determines that this meets the high radiation alarm criteria and propagates a high radiation alarm signal to the rest of the system. This signal activates the high radiation alarm light and bell in C-300 and activates the building CAAS horns. Each horn is qualitatively verified to be operating. This test is a horn functional test and each module combination is tested to generate the high radiation signal.

Proposed

SECTION 2.6 SPECIFIC TSRs FOR CAAS (NON-CASCADE FACILITIES)

2.6.4 GENERAL LIMITING CONDITIONS FOR OPERATION

2.6.4.1 CRITICALITY ACCIDENT ALARM SYSTEM (continued)

LCO 2.6.4.1b: Criticality accident alarm shall be operable (audible).

APPLICABILITY: In areas in 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.

ACTIONS:

Condition	Required Action	Completion Time
<p>A. Area does not have an audible criticality accident alarm.</p>	<p>A.1 Discontinue operations with fissile material. [Handling, transporting, analyzing, or processing of assay samples necessary for compliance with TSR 2.4.4.3 is not restricted by this action.]</p> <p><u>AND</u></p> <p>A.2.1 Evacuate area of inaudibility</p> <p><u>AND</u></p> <p>A.2.2 Restrict access to the area of inaudibility.</p> <p><u>AND</u></p> <p>A.3 Provide personnel allowed into the area that would be restricted under Action A.2.1 with an alternate means of criticality alarm notification such as a device that will alarm on sensing a 10mr/hr dose rate, or a radio in constant communication with the Central Control Facility.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p>
<p>B. Area does not have an audible criticality accident alarm.</p>	<p>B.1 Restore criticality accident alarm to operable status.</p> <p>TSR 1.6.2.2d is not applicable.</p>	<p>Prior to reinitiating activities</p>

Proposed

SECTION 2.6 SPECIFIC TSRs FOR CAAS (NON-CASCADE FACILITIES)

2.6.4 GENERAL LIMITING CONDITIONS FOR OPERATION

2.6.4.1 CRITICALITY ACCIDENT ALARM SYSTEM (continued)

SURVEILLANCE REQUIREMENTS:

Surveillance		Frequency										
SR 2.6.4.1b-1	Test the CAAS and building horns.	Annually										
SR 2.6.4.1b-2	Verify that the CAAS air accumulator supply pressure to the building horns is greater than or equal to that necessary to sound all building horns for at least 120 seconds based on the number of accumulators in service. <div style="text-align: center;"> <p>C-400</p> <table border="0"> <tr> <td><u>Number of accumulators in service</u></td> <td><u>Minimum pressure</u></td> </tr> <tr> <td>2</td> <td>125 psig</td> </tr> <tr> <td>1</td> <td>145 psig</td> </tr> </table> <p>C-409</p> <table border="0"> <tr> <td><u>Number of accumulators in service</u></td> <td><u>Minimum pressure</u></td> </tr> <tr> <td>1</td> <td>125 psig</td> </tr> </table> </div>	<u>Number of accumulators in service</u>	<u>Minimum pressure</u>	2	125 psig	1	145 psig	<u>Number of accumulators in service</u>	<u>Minimum pressure</u>	1	125 psig	Quarterly
<u>Number of accumulators in service</u>	<u>Minimum pressure</u>											
2	125 psig											
1	145 psig											
<u>Number of accumulators in service</u>	<u>Minimum pressure</u>											
1	125 psig											
SR 2.6.4.1b-3	Verify that the condition of the battery backups to the electronic horns are sufficient to power the horns for at least 120 seconds.	Annually										

BASIS:

The 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 those work areas which are potentially affected. Audibility is not provided for areas 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 design of the system, three detector modules per cluster, provides protection for criticality events even with partial losses of required equipment. The CAAS also provides detection coverage in most areas by using an overlapping pattern of individual cluster units. Criticality concerns with the listed facilities are associated with the handling of fissile materials.

Proposed

SECTION 2.6 SPECIFIC TSRs FOR CAAS (NON-CASCADE FACILITIES)

2.6.4 GENERAL LIMITING CONDITIONS FOR OPERATION

2.6.4.1 CRITICALITY ACCIDENT ALARM SYSTEM (continued)

BASIS (continued):

Assay sampling required by TSR 2.4.4.3 is not restricted during CAAS outages due to the small quantities of material involved and the low risk associated with sample analysis. The NCSA that governs the handling of assay sampling tubes limits the number of tubes to a batch which is less than safe mass and volume. The only fissile material operations that will be allowed during the CAAS outage are those which involve the handling, transporting, analyzing, or processing of assay samples which are needed for TSR compliance. The movement of fissile material, such as carboys or waste drums, is prohibited while the LCO actions are in effect. The action items maintain the facility in steady state operations to limit the potential for these concerns to the extent possible. The alarm signal is provided by sounding building horns which sound upon a signal from any cluster. The building horns for C-709 and C-710 are configured in two separate networks, either of which can independently sound the required evacuation signal. The building horn configuration in C-709 and C-710 allows the CAAS for those buildings to remain operable even when one of the independent horn networks is temporarily out of service. Providing another means of coverage (i.e., portable detector/alarm, personal alarm device, etc.), restricting operations, or restricting access to the area in the event of the loss of alarms will establish protection.

Facilities containing criticality accident alarm systems (other than those covered by TSR Sections 2.1-2.4) include C-400, C-409, C-710, C-720, C-720M, C-720K, C-720R, C-720S, C-720-C, C-728, and C-746-Q-1. [SAR Sections 3.15.7.1, 4.3.2.6, 5.2.2.5]

The CAAS air accumulators provide for 120 seconds of horn actuation when at their minimum acceptable pressure based on the number of accumulators in service. Electronic horns are also installed in some areas. These horns have battery backup power supplies which will provide for at least 120 seconds of horn actuation even if off-site power is lost.

The annual surveillance of the CAAS building horns consists of placing the cluster in the test mode with a keyswitch, and manually causing two detector modules to generate radiation readings above the alarm setpoint. The cluster electronics determines that this meets the high radiation alarm criteria and propagates a high radiation alarm signal to the rest of the system. This signal activates the high radiation alarm light and bell in C-300 and activates the building CAAS horns. Each horn is qualitatively verified to be operating. This test is a horn functional test and each module combination is tested to generate the high radiation signal.

**United States Enrichment Corporation (USEC)
Certificate Amendment Request
Technical Safety Requirement (TSR) Change to Revise
Criticality Accident Alarm System Controls at PGDP
Significance Determination**

The United States Enrichment Corporation (USEC) has reviewed the proposed changes associated with this certificate amendment request and provides the following Significance Determination for consideration.

1. No Significant Change to Any Conditions to the Certificate of Compliance

None of the Conditions to the Certificate of Compliance specifically address the subject SAR or TSR sections that are being revised. Thus, the proposed change will have no impact on any of the Conditions to the Certificate of Compliance.

2. No Significant Change to Any Condition of the Approved Compliance Plan

All Compliance Plan Issues have been closed. As a result, the conditions specified in the compliance plan are no longer in effect. Thus, this proposed revision does not represent a significant change to any condition of the approved Compliance Plan.

3. No Significant Increase in the Probability of Occurrence or Consequences of Previously Evaluated Accidents

The proposed change will revise CAAS TSRs to indicate that CAAS audibility is not applicable to areas where temporary noise sources make the CAAS horns inaudible to personnel in the vicinity of the noise source. This proposed change will also revise the CAAS surveillance frequency from quarterly to annually. The accident of concern associated with this proposed change is a criticality accident. The only function of the CAAS is to provide an alarm to warn people of criticality events. Since the CAAS is not relied on to prevent criticality events, this proposed change will not significantly increase the probability of occurrence of previously evaluated accidents.

The CAAS mitigates the consequences of a criticality by providing audible alarms to warn personnel to evacuate the area, thereby reducing the radiological dose associated with criticality events. This proposed change will allow the use of the previously approved "buddy system" to warn personnel of a criticality in lieu of CAAS horns in areas where temporary noise sources render the installed CAAS horns inaudible. The "buddy system" is currently approved for use in permit-required confined spaces within facilities. The "buddy system" requires that one person remain outside the area of inaudibility while maintaining contact with personnel in the area. In the event that a criticality occurs, the person outside the area immediately notifies personnel in the area of inaudibility to evacuate. The time required to evacuate personnel using the "buddy system" for high noise areas will be the same or less than the time required for evacuating personnel in permit-required confined spaces. Revising the surveillance frequency for CAAS audibility from quarterly to annually will not cause the CAAS to become unreliable or adversely affect how the system will perform its safety function. As a result, this proposed change will not significantly increase the consequences of previously evaluated accidents. Based on the above, this proposed change will not result in a significant increase in the probability of occurrence or consequences of previously evaluated accidents.

4. No New or Different Type of Accident

The CAAS is only used to mitigate the consequences of a criticality accident. The proposed change is administrative only and does not involve plant modifications or change how equipment important to safety is operated. As a result, the proposed change does not create any new failure modes or create initiating events that are different than previously evaluated in the SAR. Therefore, this proposed change will not create a new or different type of accident.

5. No Significant Reduction in Margins of Safety

The TSRs already allow use of the “buddy system” as an acceptable means of minimizing the potential radiological dose associated with an inadvertent criticality in permit-required confined spaces where the CAAS is inaudible. The only effect of this proposed change is to allow the “buddy system” to also be used for local areas of inaudibility caused by activities that generate high noise levels. Revising the surveillance frequency for CAAS audibility from quarterly to annually will not cause the CAAS to become unreliable or adversely affect how the system will perform its safety function. The proposed changes will not adversely affect the ability of the CAAS system or currently approved “buddy system” to minimize the potential radiological dose resulting from an inadvertent criticality. As a result, there is no significant reduction in margins of safety associated with the proposed change.

6. No Significant Decrease in the Effectiveness of Any Programs or Plans Contained in the Certificate Application

The NCS program described in the SAR currently indicates that audibility is not provided in localized areas of inaudibility resulting from temporary activities that generate high noise levels. The NCS program indicates that the “buddy system” is used in these areas to ensure personnel are notified of CAAS alarms in order to evacuate. This change was incorporated into the NCS program when NRC approval was obtained to incorporate this CAAS exclusion into the TSR controls for non-cascade facilities. The only effect of this proposed change is to revise the cascade facility TSRs to indicate the “buddy system” will also be used for localized areas of inaudibility. No new or different methods of minimizing the consequences of a criticality are being proposed. In addition, no other programs or plans contained in the Certificate Application are affected by this change. Therefore, the proposed change will not result in a decrease in the effectiveness of any programs or plans contained in the Certificate Application.

7. The Proposed Changes do not Result in Undue Risk to 1) Public Health and Safety, 2) Common Defense and Security, and 3) the Environment

Due to the fact that there is no significant increase in the probability or consequences of any accident previously analyzed and no new or different type of accident, there will be no undue risk to the public health and safety because of the proposed change. In addition, the proposed change will have no impact on plant effluents or on the programs and plans in place to implement physical security, protection of classified matter, transportation security, or special nuclear material accountability. Consequently the proposed change to the TSR will not pose any undue risk to the public health and safety, common defense and security, or the environment.

8. No Change in the Types or Significant Increase in the Amounts of Any Effluents that May be Released Off-Site

The proposed change does not involve any physical change to the plant, or plant operations that could change the types or increase the amounts of any effluents that may be released offsite. Therefore, the proposed change does not change the type or significantly increase the amount of effluents that may be released offsite.

9. No Significant Increase in Individual or Cumulative Occupational Radiation Exposure

For the reasons stated above, the use of the currently established “buddy system” for localized areas of inaudibility and increasing the CAAS surveillance frequency to annually do not significantly increase the probability or consequences of a criticality event, or the radiological dose to personnel. The proposed change will not effect the radiological protection program description or the actions in place to minimize occupational exposures. Therefore, there is no increase in individual or cumulative occupational radiation exposure as a result of this change.

10. No Significant Construction Impact

This proposed change will not require modifications to plant equipment. Therefore, there are no significant construction impacts associated with this change.