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Document Control Desk  
 US Nuclear Regulatory Commission  
 Washington, DC 20555

Re: License Amendment Request R-2 Docket 50-005

Dear Sir/Madame:

The Penn State Breazeale Reactor requests expedited consideration of a change to Technical Specification 3.5 *Engineered Safety Features* to correct an error in the specification and allow continued operations of the facility without repetitive, unintentional, and non-consequential noncompliance with the specification as written.

In 1998 as a small part of a large multifaceted change to Technical Specifications (TS), Penn State requested TS Limiting Condition for Operations (LCO) 3.5 *Engineered Safety Features* specification be changed from “reactor operating” to “not secured”. The basis for the change was to more closely align with ANSI/ANS 15.1, *The Development of Technical Specifications for Research Reactors* (1990). The specific change was approved recognizing that “not secured” was a more “conservative” restriction than “operating.” The requestors did not realize that the design of the system would result in a momentary LCO non-compliance during Evacuation Alarm daily and monthly testing or recovery from a system actuation. The design requires the reactor key be inserted to reset the Evacuation System alarm and restart Facility Exhaust Fans. The definition of “secured” requires the key be removed from the lock. This issue went unrecognized for approximately 14 years.

The issue was discovered (June 15, 2012) and discussed with NRC staff on the same day. During these discussions, Penn State reactor management expressed the likely need for regulatory relief or an expedited Technical Specification change in order for reactor operations to continue without intentional noncompliance.

Further noncompliance with the LCO during the daily channel check has been avoided by procedurally opening a circuit in the reactor control system to conduct the test then closing the circuit. Continued normal reactor operations have been authorized with recognition that any valid or invalid evacuation actuation when the reactor is not secured will result in additional LCO noncompliance until the TS applicability is changed.

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A TS change or additional procedures changes and physical plant modifications are required to override the reactor control system and allow conduct of the monthly channel test. TS 4.6.1 *Radiation Monitoring System and Evacuation Alarm* entered grace period on 6/26 and expires on 7/10. Plant modifications are being pursued in parallel with this request for a TS amendment.

Penn State requests expedited processing of a TS amendment to change TS 3.5.a specification wording from "not secured" to "operating" (see attached). The requested change is consistent with the existing applicability and basis sections as well as ANSI/ANS 15.1. The requested change does not affect the function to minimize worker exposure by exhausting air and radioactive gases during reactor operation. The change does not reduce the facility capability or function to detect and respond to minimize worker and public exposure to airborne radioactive material during an unplanned release or the maximum hypothetical accident, nor does it increase the likelihood or consequences of any event. The wording in this amendment request is a subset of the amendment request submitted in February that is currently in the review process.

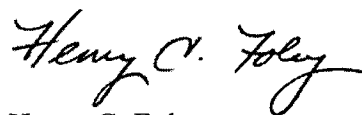
Please exempt this request from fees per 10CFR170.11.a(4).

If there are any questions regarding the information submitted, please contact Mr. Mark A. Trump, Associate Director for Operations.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 7/09/2012

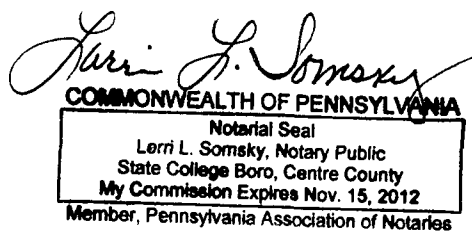
Sincerely,



Henry C. Foley  
Vice President for Research  
Dean of the Graduate School

Attachment: TS 3.5 revised

cc- electronic  
Jesse Quichocho, NRC  
Xiaosong Yin, NRC  
Gregory Bowman, NRC  
Gregory Schoenebeck, NRC  
NRC file



3.5 Engineered Safety Features - Facility Exhaust System and Emergency Exhaust System

Applicability

This specification applies to the operation of the facility exhaust system and the emergency exhaust system.

Objective

The objective is to mitigate the consequences of the release of airborne radioactive materials resulting from reactor operation.

Specification

- a. If the reactor is operating, at least one facility exhaust fan SHALL be operating and, except for periods of time less than 48 hours during maintenance or repair, the emergency exhaust system SHALL be operable.
- b. If irradiated fuel or a fueled experiment with significant fission product inventory is being moved outside containers, systems or storage areas, at least one facility exhaust fan SHALL be operating and the emergency exhaust system SHALL be operable.

Basis

During normal operation, the concentration of airborne radioactivity in unrestricted areas is below effluent release limits as described in the Safety Analysis Report, Chapter 13. In the event of a substantial release of airborne radioactivity, an air radiation monitor and/or an area radiation monitor will sound a building evacuation alarm which will automatically cause the facility exhaust system to close and the exhausted air to be passed through the emergency exhaust system filters before release. This reduces the radiation within the building. The filters will remove  $\approx 90\%$  all of the particulate fission products that escape to the atmosphere.

The emergency exhaust system activates only during an evacuation whereupon all personnel are required to evacuate the building (TS 3.6.2). If there is an evacuation while the emergency exhaust system is out of service for maintenance or repair, personnel evacuation is not prevented.

In the unlikely event an accident occurs during emergency exhaust system maintenance or repair, the public dose will be equivalent to or less than that calculated in the Safety Analysis Report, Chapter 13.