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SUBJECT: Clerical edits to response to Request for Additional Information pertaining to Breazeale Reactor ventilation system upgrade (EPID L-2019-LLA-0089)

To Whom It May Concern:

The PSU Radiation Science and Engineering Center previously provided some minor clerical edits to a proposed revised version of the Technical Specifications for the Breazeale Reactor (license R-2). The following additional clerical changes are provided:

The line spacing on pages 41, 42, and 43 has been adjusted for clarity.

Additionally please note that the header and footer marking "CONTROLLED" is for internal use at PSU. Replacement pages provided to the NRC should not have "CONTROLLED" markings in the header and footer. The replacement pages 41, 42, and 43 are provided without this marking.

Please contact me with any questions you may have regarding these changes.

Sincerely,

Jeffrey A. Geuther

Associate Director for Operations
Radiation Science and Engineering Center
Pennsylvania State University

Cc: X. Yin (NRC)
K. Ünlü (PSU)

Attachments (2): Revised TS page 41, 42, and 43

4.5 Ventilation Systems

Applicability

These specifications apply to the reactor bay heating ventilation and exhaust system and emergency exhaust system.

Objective

The objective is to ensure the proper operation of the reactor bay heating ventilation and exhaust system and emergency exhaust system in controlling releases of radioactive material to the uncontrolled environment.

Specifications

a. It SHALL be verified monthly, not to exceed 6 weeks, whenever operation is scheduled, that the emergency exhaust system is operable with correct pressure drops across the filters (as specified in procedures).

b. It SHALL be verified monthly, not to exceed 6 weeks, whenever operation is scheduled, that the reactor bay heating ventilation and exhaust system is secured when the emergency exhaust system activates during an evacuation alarm (See TS 3.6.2 and TS 5.5).

c. Reactor bay differential pressure monitors SHALL be calibrated annually, not to exceed 15 months.

Basis

Experience, based on periodic checks performed over years of operation, has demonstrated that a test of the exhaust systems on a monthly basis, not to exceed 6 weeks, is sufficient to ensure the proper operation of the systems. This provides reasonable assurance on the control of the release of radioactive material. Annual calibration of the differential pressure sensors will ensure the accurate assessment of reactor bay negative pressure as required by TS 3.5.

4.6 Radiation Monitoring System and Effluents

4.6.1 Radiation Monitoring System and Evacuation Alarm

Applicability

This specification applies to surveillance requirements for the area radiation monitor, the Neutron Beam Laboratory radiation monitor, the air radiation monitor, and the evacuation alarm.

Objective

The objective is to ensure that the radiation monitors and evacuation alarm are operable and to verify the appropriate alarm settings.

Specification

The area radiation monitor, the Neutron Beam Laboratory radiation monitor, the continuous air (radiation) monitor, and the evacuation alarm system SHALL be channel tested monthly not to exceed 6 weeks. They SHALL be verified to be operable by a channel check daily when the reactor is to be operated, and SHALL be calibrated annually, not to exceed 15 months.

Basis

Experience has shown this frequency of verification of the radiation monitor set points and operability and the evacuation alarm operability is adequate to correct for any variation in the system due to a change of operating characteristics. Annual channel calibration ensures that units are within the specifications defined by procedures.

4.6.2 Argon-41

Applicability

This specification applies to surveillance of the Argon-41 produced during reactor operation.

Objective

To ensure that the production of Argon-41 does not exceed the limits specified by 10 CFR Part 20.

Specification

The production of Argon-41 SHALL be measured and/or calculated for each new experiment or experimental facility that is estimated to produce a dose greater than 1 mrem at the exclusion boundary.

Basis

One (1) mrem dose per experiment or experimental facility represents 1% of the maximum 10 CFR Part 20 annual dose. It is considered prudent to analyze the Argon-41 production for any experiment or experimental facility that exceeds 1% of the annual limit.

4.6.3 ALARA

Applicability

This specification applies to the surveillance of all reactor operations that could result in occupational exposures to radiation or the release of radioactive effluents to the environs.

Objective

The objective is to provide surveillance of all operations that could lead to occupational exposures to radiation or the release of radioactive effluents to the environs.

Specification

As part of the review of all operations, consideration SHALL be given to alternative operational modes that might reduce staff exposures, release of radioactive materials to the environment, or both.

Basis

Experience has shown that experiments and operational requirements can, in many cases, be satisfied with a variety of combinations of facility options, core positions, power levels, time delays, and effluent or staff radiation exposures. Similarly, overall reactor scheduling achieves significant reductions in staff exposures. Consequently, ALARA must be a part of both overall reactor scheduling and the detailed experiment planning.

4.7 Experiments

Applicability

This specification applies to surveillance requirements for experiments.

Objective

The objective is to ensure that the conditions and restrictions of TS 3.7 are met.

Specification

Those conditions and restrictions listed in TS 3.7 SHALL be considered by the PSBR authorized reviewer before signing the irradiation authorization for each experiment.

Basis

Authorized reviewers are appointed by the facility director.