

April 16, 2008

Mr. Charles G. Pardee
Chief Nuclear Officer
AmerGen Energy Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: THREE MILE ISLAND NUCLEAR STATION, UNIT 1, ISSUANCE OF
AMENDMENT REGARDING CONTROL ROOM ENVELOPE HABITABILITY
(TAC NO. MD5286)

Dear Mr. Pardee:

The Commission has issued the enclosed Amendment No. 264 to Facility Operating License No. DPR-50 for the Three Mile Island Nuclear Station, Unit 1 (TMI-1), in response to your application dated April 12, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML071090282), as supplemented by letters dated January 18, 2008 (ADAMS Accession No. ML080300012), and March 14, 2008 (ADAMS Accession No. ML080770084).

The amendment modifies the TMI-1 technical specifications related to control room envelope habitability consistent with Technical Specification Task Force (TSTF) Traveler TSTF-448.

A copy of the related safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

Peter J. Bamford, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-289

Enclosures: 1. Amendment No. 264 to DPR-50
2. Safety Evaluation

cc w/encls: See next page

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AMERGEN ENERGY COMPANY, LLC

DOCKET NO. 50-289

THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 264

License No. DPR-50

1. The Nuclear Regulatory Commission (the Commission or NRC) has found that:
 - A. The application for amendment by AmerGen Energy Company, LLC (the licensee), dated April 12, 2007, as supplemented by letters dated January 18, 2008, and March 14, 2008, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.c.(2) of Facility Operating License No. DPR-50 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 264, are hereby incorporated in the license. The AmerGen Energy Company, LLC, shall operate the facility in accordance with the Technical Specifications.

3. Further, Facility Operating License No. DPR-50 will be amended to add the following license condition 2.c.(18), to read as follows:
 - (18) Upon implementation of Amendment No. 264 adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air leakage as required by Specification 4.12.1.5, in accordance with TS 6.20.c.(i), the assessment of CRE habitability as required by Specification 6.20.c.(ii), and the measurement of CRE pressure as required by Specification 6.20.d, shall be considered met. Following implementation:
 - (a) The first performance of Specification 4.12.1.5, in accordance with Specification 6.20.c.(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of Specification 1.25, as measured from August 21, 2000, the date of the most recent successful tracer gas test, as stated in the December 9, 2003, letter response to Generic Letter 2003-01, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.
 - (b) The first performance of the periodic assessment of CRE habitability, Specification 6.20.c.(ii), shall be within 3 years, plus the 9-month allowance of Specification 1.25, as measured from August 21, 2000, the date of the most recent successful tracer gas test, as stated in the December 9, 2003, letter response to Generic Letter 2003-01, or within the next 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.
 - (c) The first performance of the periodic measurement of CRE pressure, Specification 6.20.d, shall be within 24 months, plus the 180 days allowed by Specification 1.25, as measured from December 9, 2006, the date of the most recent successful pressure measurement test, or within 180 days if not performed previously.
4. This license amendment is effective as of its date of issuance and shall be implemented within 180 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Harold K. Chernoff, Chief
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: April 16, 2008

ATTACHMENT TO LICENSE AMENDMENT NO. 264

FACILITY OPERATING LICENSE NO. DPR-50

DOCKET NO. 50-289

Replace the following pages of the Facility Operating License with the revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the area of change.

<u>Remove</u>	<u>Insert</u>
3	3
9	9

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

<u>Remove</u>	<u>Insert</u>
ii	ii
iv	iv
v	v
3-61	3-61
3-62	3-62 *
3-62a	**
3-62b	**
3-62c	3-62c
3-62d	3-62d
4-55	4-55
4-55b	**
4-55c	4-55c
6-29	6-29

* Page contains both specification and bases sections. NRC issuance of this page applies to the specification section only. Any bases changes are made under the control of the TMI-1 Technical Specifications Bases Control Program.

** New insertion page is under the control of the TMI-1 Technical Specifications Bases Control Program

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 264 TO FACILITY OPERATING LICENSE NO. DPR-50
AMERGEN ENERGY COMPANY, LLC
THREE MILE ISLAND NUCLEAR STATION, UNIT 1
DOCKET NO. 50-289

1.0 INTRODUCTION

By application dated April 12, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML071090282), as supplemented by letters dated January 18, 2008 (ADAMS Accession No. ML080300012), and March 14, 2008 (ADAMS Accession No. ML080770084), AmerGen Energy Company, LLC (the licensee), requested changes to the Technical Specifications (TSs) for Three Mile Island Nuclear Station, Unit 1 (TMI-1). The supplements provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on June 5, 2007 (72 FR 31100).

On August 8, 2006 (ADAMS Accession No. ML062210095), the commercial nuclear electrical power generation industry owners group TSs Task Force (TSTF) submitted a proposed change traveler, TSTF-448, Revision 3, "Control Room Habitability," to the improved standard technical specifications (STS) (NUREGs 1430-1434) on behalf of the industry (TSTF-448, Revisions 0, 1, and 2 were prior draft iterations). TSTF-448, Revision 3, is a proposal to establish more effective and appropriate action, surveillance, and administrative STS requirements related to ensuring the habitability of the control room envelope (CRE).

In Nuclear Regulatory Commission (NRC or Commission) Generic Letter 2003-01, licensees were alerted to findings at facilities that existing TS surveillance requirements (SRs) for the Emergency Control Room Air Treatment System may not be adequate. Specifically, the results of American Society for Testing and Materials E741-00 (ASTM E741) tracer gas tests to measure CRE unfiltered inleakage at facilities indicated that the differential pressure surveillance is not a reliable method for demonstrating CRE boundary operability. Licensees were requested to address existing TS as follows:

Provide confirmation that your technical specifications verify the integrity [i.e., operability] of the CRE [boundary], and the assumed [unfiltered] inleakage rates of potentially contaminated air. If you currently have a differential pressure surveillance requirement to demonstrate CRE [boundary] integrity, provide the

Enclosure

basis for your conclusion that it remains adequate to demonstrate CRE integrity in light of the ASTM E741 testing results. If you conclude that your differential pressure surveillance requirement is no longer adequate, provide a schedule for: 1) revising the surveillance requirement in your technical specification to reference an acceptable surveillance methodology (e.g., ASTM E741), and 2) making any necessary modifications to your CRE [boundary] so that compliance with your new surveillance requirement can be demonstrated.

If your facility does not currently have a technical specification surveillance requirement for your CRE integrity, explain how and at what frequency you confirm your CRE integrity and why this is adequate to demonstrate CRE integrity.

To promote standardization and to minimize the resources that would be needed to create and process plant-specific amendment applications in response to the concerns described in the generic letter, the industry and the NRC proposed revisions to CRE habitability system requirements contained in the STS, using the STS change traveler process. This effort culminated in Revision 3 to TSTF-448, which the NRC staff approved on January 17, 2007.

Consistent with the traveler as incorporated into NUREG-1430, the licensee proposed revising action and surveillance requirements in their custom TS 3.15.1, "EMERGENCY CONTROL ROOM AIR TREATMENT SYSTEM" and adding a new administrative controls program, Specification 6.20, "Control Room Envelope Habitability Program" for TMI-1. The purpose of the changes is to ensure that CRE boundary operability is maintained and verified through effective surveillance and programmatic requirements, and that appropriate remedial actions are taken in the event of an inoperable CRE boundary.

Some editorial and plant specific changes were incorporated into this safety evaluation (SE) resulting in minor deviations from model SE text in TSTF-448, Revision 3.

2.0 REGULATORY EVALUATION

2.1 Control Room and Control Room Envelope

NRC Regulatory Guide (RG) 1.196, "Control Room Habitability at Light-water Nuclear Power Reactors," Revision 0, dated May 2003, uses the term "control room envelope (CRE)" in addition to the term "control room" and defines each term as follows:

Control Room: The plant area, defined in the facility licensing basis, in which actions can be taken to operate the plant safely under normal conditions and to maintain the reactor in a safe condition during accident situations. It encompasses the instrumentation and controls necessary for a safe shutdown of the plant and typically includes the critical document reference file, computer room (if used as an integral part of the emergency response plan), shift supervisor's office, operator wash room and kitchen, and other critical areas to which frequent personnel access or continuous occupancy may be necessary in the event of an accident.

Control Room Envelope: The plant area, defined in the facility licensing basis, that in the event of an emergency, can be isolated from the plant areas and the

environment external to the CRE. This area is served by an emergency ventilation system, with the intent of maintaining the habitability of the control room. This area encompasses the control room, and may encompass other non-critical areas to which frequent personnel access or continuous occupancy is not necessary in the event of an accident.

NRC Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity At Nuclear Power Reactors," Revision 0, May 2003, also contains these definitions, but uses the term CRE to mean both. This is because the protected environment provided for operators varies with the nuclear power facility. At some facilities this environment is limited to the control room; at others, it is the CRE. In this safety evaluation, consistent with the proposed changes to the STS, the CRE will be used to designate both.

2.2 Emergency Control Room Air Treatment System

The emergency control room air treatment system (at TMI-1) provides a protected environment from which operators can control the unit during airborne challenges from radioactivity, hazardous chemicals, and fire byproducts, such as fire suppression agents and smoke, during both normal and accident conditions.

The emergency control room air treatment system is designed to maintain a habitable environment in the control room envelope for 30 days of continuous occupancy after a Design-Basis Accident (DBA) without exceeding a 5 roentgen equivalent man (rem) total effective dose equivalent (TEDE).

The emergency control room air treatment system consists of two redundant trains (subsystems), each capable of maintaining the habitability of the CRE. The emergency control room air treatment system is considered operable when the individual components necessary to limit operator exposure are operable in both trains. An emergency control room air treatment system train is considered operable when the associated:

- Fan is operable;
- High efficiency particulate air (HEPA) filters and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions;
- Ductwork, valves, and dampers are operable, and air circulation can be maintained; and
- CRE boundary is operable (the single boundary supports both trains).

The CRE boundary is considered operable when the measured unfiltered air leakage is less than or equal to the leakage value assumed by the licensing basis analyses of DBA consequences to CRE occupants.

2.3 Regulations Applicable to Control Room Habitability

In Appendix A, "General Design Criteria for Nuclear Power Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization

Facilities," General Design Criteria (GDC) 1, 2, 3, 4, 5, and 19 apply to CRE habitability. The Atomic Energy Commission (AEC) published the final rule that added Appendix A to 10 CFR Part 50 in the *Federal Register* (36 FR 3255) on February 20, 1971 (hereinafter referred to as "final GDC"). However, TMI-1 was originally designed and constructed prior to the issuance of the GDC. The construction permit for TMI-1 was issued by the AEC on May 18, 1968, and an operating license was issued on April 19, 1974. The plant design approval for the construction phase was based on the proposed GDC published by the AEC in the *Federal Register* (32 FR 10213) on July 11, 1967 (hereinafter referred to as "draft GDC").

Differences between the draft GDC and final GDC included a consolidation from 70 to 64 criteria. In accordance with an NRC staff requirements memorandum from S. J. Chilk to J. M. Taylor, "SECY-92-223 - Resolution of Deviations Identified During the Systematic Evaluation Program," dated September 18, 1992 (ADAMS Accession No. ML003763736), the Commission decided not to apply the final GDC to plants with construction permits issued prior to May 21, 1971, which includes TMI-1. Plants licensed before the final GDC were promulgated in 1971 are presumed to comply with the intent of the final GDC because those licenses were granted using comparable evaluation criteria. The TMI-1 Updated Final Safety Analysis Report (UFSAR), Section 1.4, provides an evaluation of the design bases of TMI-1 against the draft GDC.

GDC 1, "Quality Standards and Records," requires that structures, systems, and components (SSCs) important to safety be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions performed. This is similar to the draft GDC, Criterion 1, "Quality Standards."

GDC 2, "Design Basis for Protection Against Natural Phenomena," requires that SSCs important to safety be designed to withstand the effects of earthquakes and other natural hazards. This is similar to the draft GDC, Criterion 2, "Performance Standards."

GDC 3, "Fire Protection," requires SSCs important to safety be designed and located to minimize the effects of fires and explosions. This is similar to the draft GDC, Criterion 3, "Fire Protection."

GDC 4, "Environmental and Dynamic Effects Design Bases," requires SSCs important to safety to be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss of coolant accidents (LOCAs). This is similar to the draft GDC, Criterion 43, "Accident Aggravation Prevention."

GDC 5, "Sharing of Structures, Systems, and Components," requires that SSCs important to safety not be shared among nuclear power units unless it can be shown that such sharing will not significantly impair their ability to perform their safety functions, including, in the event of an accident in one unit, the orderly shutdown and cooldown of the remaining units. This is similar to the draft GDC, Criterion 4, "Sharing of Systems."

GDC 19, "Control Room," requires that a control room be provided from which actions can be taken to operate the nuclear reactor safely under normal conditions and to maintain the reactor in a safe condition under accident conditions, including a LOCA. Adequate radiation protection is to be provided to permit access and occupancy of the control room under accident conditions

without personnel receiving radiation exposures in excess of specified values. This is similar to the draft GDC, Criterion 11, "Control Room."

Because the design of the plant is not being changed by the proposed amendment, the plant continues to meet the intent of GDCs 1, 2, 3, 4, 5 and 19 and the corresponding draft GDC sections described above.

This safety evaluation was prepared based on the model safety evaluation published in the *Federal Register* on January 17, 2007 (72 FR 2022). Changes were made to accommodate plant-specific variations from that assumed in the model, but are consistent with the intent of the model and are acceptable.

2.4 Adoption of TSTF-448, Revision 3, by TMI-1

Adoption of TSTF-448, Revision 3, will assure that the facility's TS LCO for the Emergency Control Room Air Treatment System is met by demonstrating operability of the CRE boundary by inleakage testing and comparison of results to the accident consequence dose analysis assumption. In support of this, TSTF-448 also adds TS administrative controls to assure the habitability of the CRE is maintained between test performances. In addition, adoption of TSTF-448 will establish clearly stated and reasonable required actions in the event CRE boundary is not operable.

The changes made by TSTF-448 to the STS requirements for the Control Room Emergency Ventilation System (CREVS, NUREG-1430 terminology) and the CRE boundary conform to 10 CFR 50.36(d)(2) and 10 CFR 50.36(d)(3). Their adoption will better assure that the TMI-1 CRE will remain habitable during normal operation and DBA conditions. These changes, as applied to TMI-1, are therefore acceptable from a regulatory standpoint.

3.0 TECHNICAL EVALUATION

The NRC staff reviewed the proposed changes against the corresponding changes made to the STS by TSTF-448, Revision 3, which the NRC staff has found to satisfy applicable regulatory requirements, as described above in Section 2.0. The emergency recirculation mode of the Emergency Control Room Air Treatment System at TMI-1 pressurizes the CRE to minimize unfiltered air inleakage. The proposed changes are consistent with this design.

3.1 Proposed Changes

The proposed amendment would strengthen CRE habitability TS requirements by changing TS 3.15.1, "Emergency Control Room Air Treatment System" and adding a new TS administrative controls program on CRE habitability. Accompanying the proposed TS changes in this license amendment request are conforming technical changes to the TS Bases. The revision to the TS Bases also includes editorial and administrative changes to reflect applicable changes to the corresponding STS Bases, which were made to improve clarity, conform to the latest information and references, correct factual errors, and achieve more consistency among the STS NUREGs. Except for plant specific differences, all of these changes are consistent with STS as revised by TSTF-448, Revision 3.

The NRC staff compared the proposed TS changes to the STS and the STS markups and evaluations in TSTF-448. The staff verified that differences from the STS were adequately

justified on the basis of plant-specific design or retention of current licensing basis. The NRC staff also reviewed the proposed changes to the TS Bases for consistency with the STS Bases and the plant-specific design and licensing bases, although approval of the Bases is not a condition for accepting the proposed amendment. However, TMI-1 TS 6.18, "TECHNICAL SPECIFICATIONS (TS) BASES CONTROL PROGRAM," provides assurance that the licensee has established and will maintain the adequacy of the Bases. The proposed Bases for TS 4.12.1 refer to specific guidance in NEI 99-03, "Control Room Habitability Assessment Guidance," Revision 0, dated June 2001, which the NRC staff has formally endorsed, with exceptions, through RG 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," dated May 2003.

3.2 Editorial Changes

The licensee proposed editorial changes to TS 3.15.1, "Emergency Control Room Air Treatment System," to establish standard terminology, such as "control room envelope (CRE)." These changes improve the usability and quality of the presentation of the TS, have no impact on safety, and therefore, are acceptable.

As a result of the TS modifications associated with this LAR, certain TS pages were renumbered to accommodate the specified changes. This necessitated changes to the applicable index pages as well as the individual page numbering. These changes are purely administrative, have no impact on safety and therefore, are acceptable.

3.3 TMI-1 TS 3.15.1, "Emergency Control Room Air Treatment System"

The licensee proposed to establish new action requirements in TS 3.15.1 for an inoperable CRE boundary. Currently, if one control room HVAC train is determined to be inoperable due to an inoperable CRE boundary, the existing action would apply and require restoring the train (and the CRE boundary) to operable status in 7 days. If both trains are determined to be inoperable due to an inoperable CRE boundary, the existing action specifies no time to restore the trains (and CRE boundary) to operable status, and requires initiation of reactor shutdown and placing the reactor in cold shutdown within 48 hours. These existing actions are more restrictive than would be appropriate in situations for which CRE occupant implementation of compensatory measures or mitigating actions would temporarily afford adequate CRE occupant protection from postulated airborne hazards. To account for such situations, the licensee proposed to revise the condition and action requirements to add a new specification condition 3.15.1.2d, "The Control Room Envelope boundary shall be maintained such that the CRE occupant dose from a large radioactive release does not exceed the calculated dose in the licensing basis consequences analyses for DBA's and that CRE occupants are protected from hazardous chemicals and smoke," and action 3.15.1.5, "From the date that one or both control room air treatment systems (trains) are made or found to be inoperable due to an inoperable Control Room Envelope boundary." This new action would allow 90 days to restore the CRE boundary (and consequently, the affected emergency control room air treatment trains) to operable status, provided that mitigating actions are immediately implemented and within 24 hours are verified to ensure, that CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals, and smoke.

The 24-hour completion time of this new required action is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90-

day completion time is reasonable based on the determination that the mitigating actions will ensure protection of CRE occupants within analyzed limits while limiting the probability that CRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. The 90-day completion time is a reasonable time to diagnose, plan and possibly repair, and test most anticipated problems with the CRE boundary. Therefore, proposed new Specification 3.15.1.5 is acceptable.

To distinguish new Specification 3.15.1.5 from existing Specification 3.15.1.3 for one emergency control room air treatment train inoperable, 3.15.1.3 is revised to state "From and after the date that one control room air treatment system is made or found to be inoperable for a reason other than 3.15.1.2d." To distinguish new Specification 3.15.1.5 from existing Specification 3.15.1.4 for both emergency control room air treatment trains inoperable, 3.15.1.4 is revised to state "From the date that both control room air treatment systems are made or found to be inoperable for a reason other than 3.15.1.2d." The changes to existing actions 3.15.1.3 and 3.15.1.4 make them less restrictive because they will no longer apply in the event one or both control room HVAC trains are inoperable due to an inoperable CRE boundary during power operations. This is acceptable because the new Specification 3.15.1.5 establishes adequate remedial measures for this condition.

TMI-1 TS 3.15.1 is applicable at all times when containment integrity is required and when irradiated fuel handling operations are in progress. Proposed specification 3.15.1.5 includes the action, "Irradiated fuel handling operations shall be terminated immediately." This is distinct from power operation of the reactor and no period of mitigating actions is applicable regarding handling of irradiated fuel. Immediately terminating irradiated fuel handling operations does not preclude the movement of fuel being handled at the time of discovery to a safe position.

The licensee also proposed to modify the Emergency Control Room Air Treatment System specification 3.15.1 by adding a note allowing the CRE boundary to be opened intermittently under administrative controls. As stated in the LCO Bases, this note "only applies to openings in the CRE boundary that can be rapidly restored to the design condition, such as doors, hatches, floor plugs, and access panels. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with operators in the CRE. This individual will have a method to rapidly close the opening and to restore the CRE boundary to a condition equivalent to the design condition when a need for CRE isolation is indicated." The allowance of this note is acceptable because the administrative controls will ensure that the opening will be quickly sealed to maintain the validity of the licensing basis analyses of DBA consequences.

The licensee proposed to add a new TS surveillance requirement 4.12.1.5, which states "Control Room Envelope unfiltered air leakage testing shall be performed in accordance with the Control Room Envelope Habitability Program." The CRE Habitability Program TS, proposed TS 6.20, requires that the program include "Requirements for determining the unfiltered air leakage past the CRE boundary into the CRE in accordance with the testing methods and at the Frequencies specified in Sections C.1 and C.2 of RG 1.197, Revision 0." This guidance references ASTM E741 as an acceptable method of ascertaining the unfiltered leakage into the CRE. Since RG 1.197 has been accepted by the NRC staff as an acceptable means of meeting the applicable regulations and the licensee has proposed to follow this method, the proposed CRE leakage measurement surveillance requirement is acceptable.

3.4 TMI-1 TS 6.20 Control Room Envelope Habitability Program

The proposed administrative controls program TSs are consistent with the model program TS in TSTF-448, Revision 3. In combination with TS 4.12.1.5, this program is intended to ensure the operability of the CRE boundary, which as part of an operable Emergency Control Room Air Treatment System will ensure that CRE habitability is maintained such that CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under DBA conditions without personnel receiving radiation exposures in excess of 5 rem TEDE for the duration of the accident.

A CRE Habitability Program TS that is acceptable to the NRC staff contains the following elements:

- Definitions of CRE and CRE boundary. This element is intended to ensure that these definitions accurately describe the plant areas that are within the CRE, and also the interfaces that form the CRE boundary, and are consistent with the general definitions discussed in Section 2.1 of this safety evaluation. Establishing what is meant by the CRE and the CRE boundary will preclude ambiguity in the implementation of the program.
- Configuration control and preventive maintenance of the CRE boundary. This element is intended to ensure the CRE boundary is maintained in its design condition. Guidance for implementing this element is contained in Regulatory Guide 1.196, which endorsed, with exceptions, NEI 99-03. Maintaining the CRE boundary in its design condition provides assurance that its leak-tightness will not significantly degrade between CRE inleakage determinations.
- Assessment of CRE habitability at the frequencies stated in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0, and measurement of unfiltered air inleakage into the CRE in accordance with the testing methods and at the frequencies stated in Sections C.1 and C.2 of Regulatory Guide 1.197. This element is intended to ensure that the plant assesses CRE habitability consistent with Sections C.1 and C.2 of Regulatory Guide 1.197. Assessing CRE habitability at the NRC accepted frequencies provides assurance that significant degradation of the CRE boundary will not go undetected between CRE inleakage determinations. Determination of CRE inleakage using test methods acceptable to the NRC staff assures that test results are reliable for ascertaining CRE boundary operability.
- Measurement of CRE pressure with respect to all areas adjacent to the CRE boundary at designated locations for use in assessing the CRE boundary at a frequency of 24 months on a staggered test basis with respect to the control room HVAC trains. The licensee stated that this was accomplished by acquiring test data during sequential operation of both trains each refueling outage (24 months). This test schedule is adequate for meeting the intent of the staggered test basis requirement identified in TSTF-448. This element is intended to ensure that CRE differential pressure is regularly measured to identify changes in pressure warranting evaluation of the condition of the CRE boundary. Obtaining and trending pressure data provides additional assurance that significant degradation of the CRE boundary will not go undetected between CRE inleakage determinations.

The licensee stated that their TS did not define “staggered test basis” and that the measurement of CRE pressure relative to all external areas has been and would be accomplished by acquiring test data during sequential operation of both trains each refueling outage (24 months). This test schedule is conservative with respect to the staggered test basis requirement identified in TSTF-448 and is therefore, acceptable.

- Quantitative limits on unfiltered leakage. This element is intended to establish the CRE leakage limit as the CRE unfiltered infiltration rate assumed in the CRE occupant radiological consequence analyses of design basis accidents. Having an unambiguous criterion for the CRE boundary to be considered operable in order to meet TS 3.15.1.1, will ensure that associated action requirements will be consistently applied in the event of CRE degradation resulting in leakage exceeding the limit.

Consistent with TSTF-448, Revision 3, the program states that the provisions of TMI-1 TS Section 1.25, “FREQUENCY NOTATION,” are applicable to the program frequencies for performing the activities required by program elements “c”, parts (i) and (ii) (assessment of CRE habitability and measurement of CRE leakage) and “d” (measurement of CRE differential pressure). This statement is needed to avoid confusion. TS Section 1.25 is applicable to the surveillance that references the testing in the CRE Habitability Program. However, TS Section 1.25 is not applicable to Administrative Controls unless specifically invoked. Providing this statement in the program eliminates any confusion regarding whether TS Section 1.25 is applicable, and is acceptable.

Consistent with TSTF-448, Revision 3, proposed TS 6.20 provides that: (1) a CRE Habitability Program shall be established and implemented; (2) the program shall include all of the NRC-staff required elements, as described above; and, (3) the provisions of TS Section 1.25 shall apply to program frequencies. This is consistent with the model program TS approved by the NRC staff in TSTF-448, Revision 3, and is therefore, acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 [or a surveillance requirement]. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (72 FR 31100). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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