April 25, 2008

Mr. Mark B. Bezilla
Site Vice President
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Mail Stop A-PY-A290
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SUBJECT: PERRY NUCLEAR POWER PLANT, UNIT NO. 1 - ISSUANCE OF AMENDMENT RE: TSTF-448, REVISION 3, "CONTROL ROOM HABITABILITY" (TAC NO. MD6829)

Dear Mr. Bezilla:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 148 to Facility Operating License No. NPF-58 for the Perry Nuclear Power Plant, Unit No. 1. This amendment revises the technical specifications (TSs) in response to your application dated September 18, 2007.

This amendment would modify TS requirements related to control room envelope habitability in accordance with Technical Specification Task Force (TSTF) Traveler TSTF-448, Revision 3.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

Cameron S. Goodwin, Project Manager
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-440

Enclosures:
1. Amendment No. 148 to NPF-58
2. Safety Evaluation

cc w/encls: See next page

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FIRSTENERGY NUCLEAR OPERATING COMPANY

FIRSTENERGY NUCLEAR GENERATION CORP.

OHIO EDISON COMPANY

DOCKET NO. 50-440

PERRY NUCLEAR POWER PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 148
License No. NPF-58

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for license filed by FirstEnergy Nuclear Operating Company, et al., (the licensee) dated September 18, 2007, 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. NPF-58 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 148 are hereby incorporated into this license. FENOC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. Further, Facility Operating License No. NPF-58 will be amended to add the following license conditions to Section 2.C, to read as follows:

Upon implementation of Amendment No. 148 adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 3.7.3.4 in accordance with TS 5.5.14.c(i), and the assessment of CRE habitability as required by Specification 5.5.14.c(ii), shall be considered met. Following implementation:

(a) The first performance of SR 3.7.3.4, in accordance with Specification 5.5.14.c(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from December 2004, the date of the most recent successful tracer gas test as stated in the response to Generic Letter 2003-01 dated May 30, 2006, 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 5.5.14.c(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from December 2004, the date of the most recent successful tracer gas test as stated in the response to Generic Letter 2003-01 dated May 30, 2006, 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 outside air intake and exhaust damper leakage, Specification 5.5.14.d, shall be within 24 months, plus the 184 days allowed by SR 3.0.2, as measured from the date of the most recent successful damper leakage test.

4. This license amendment is effective as of its date of its issuance and shall be implemented within 120 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Russell Gibbs, Chief
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications and Facility Operating License

Date of Issuance: April 25, 2008

ATTACHMENT TO LICENSE AMENDMENT NO. 148

FACILITY OPERATING LICENSE NO. NPF-58

DOCKET NO. 50-440

Replace the following pages of the Facility Operating License and 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.

Remove	Insert
License NPF-58	License NPF-58
Page 4	Page 4
Page 5a	Page 5a
TSs	TSs
3.7-4	3.7-4
3.7-5	3.7-5
3.7-6	3.7-6
3.7-7	3.7-7
5.0-15b	5.0-15b
- -	5.0-15c

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 148 TO FACILITY OPERATING LICENSE NO. NPF-58

FIRSTENERGY NUCLEAR OPERATING COMPANY

FIRSTENERGY NUCLEAR GENERATION CORP.

OHIO EDISON COMPANY

PERRY NUCLEAR POWER PLANT, UNIT NO. 1

DOCKET NO. 50-440

1.0 INTRODUCTION

By letter to the U.S. Nuclear Regulatory Commission (NRC, the Commission) dated September 18, 2007 (Agencywide Document and Management System (ADAMS) Accession No. ML072680852), and supported by Generic Letter (GL) 2003-01 responses dated August 11, 2003 (ADAMS Accession No. ML032320295) (Reference 7), May 30, 2006 (ADAMS Accession No. ML061580074) (Reference 8), and March 20, 2007 (ADAMS Accession No. ML070860220) (Reference 9), FirstEnergy Nuclear Operating Company, et al. (the licensee) requested changes to the technical specifications (TSs) for the Perry Nuclear Power Plant (PNPP), Unit No. 1. The proposed changes would revise TS requirements related to control room envelope habitability in accordance with Technical Specification Task Force (TSTF) Traveler TSTF-448 Revision 3. Specifically, the proposed changes would revise the TS requirements related to control room envelope habitability in TS 3.7.3, “Control Room Emergency Recirculation (CRER) System,” and TS 5.5, “Programs and Manuals.”

On August 8, 2006, the Commercial Nuclear Electrical Power Generation Industry Owners Group submitted a proposed change, TSTF-448, Revision 3, 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 NRC Generic Letter 2003-01 (Reference 1), licensees were alerted to findings at facilities that existing TS surveillance requirements for the Control Room Envelope Emergency Ventilation System (CREEVS) may not be adequate. Specifically, the results of American Society for Testing and Materials (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 TSs 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 (SR) to demonstrate CRE [boundary] integrity, provide the 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 SR is no longer adequate, provide a schedule for: 1) revising the SR in your TS 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 SR can be demonstrated.
>
> If your facility does not currently have a TS SR 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, “Control Room Habitability,” which the NRC staff approved on January 17, 2007.

Consistent with the traveler as incorporated into NUREG-1434, the licensee proposed revising action and surveillance requirements in Specification 3.7.3, “Control Room Emergency Recirculation (CRER) System,” and adding a new administrative controls program, Specification 5.5.14, “Control Room Envelope Habitability Program.” The purposes of the changes are 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 the 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, May 2003 (Reference 4), uses the term “control room envelope” 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 RG 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003 (Reference 5), 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 SE, consistent with the proposed changes to the STS, the CRE will be used to designate both. For consistency, facilities should use the term CRE with an appropriate facility-specific definition derived from the above CRE definition.

2.2 Control Room Emergency Recirculation (CRER) System

The CRER system (the term used at PNPP for the Control Room Envelope Emergency Ventilation System, CREEVS) 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 CRER system is designed to maintain a habitable environment in the CRE for 30 days of continuous occupancy after a design-basis accident (DBA) without exceeding a five roentgen equivalent man (rem) total effective dose equivalent (TEDE). The CRER system consists of two redundant subsystems, each capable of maintaining the habitability of the CRE. The CRER system is considered operable when the individual components necessary to limit operator exposure are operable in both subsystems. A CRER system subsystem 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;
- Demister, pre-filter, ductwork, heater, valves, and dampers are operable, and required air circulation can be maintained; and
- CRE boundary is operable (the single boundary supports both subsystems).

The CRE boundary is considered operable when the measured unfiltered air inleakage is less than or equal to the inleakage value assumed by the licensing basis analyses of design basis accident 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. A summary of these GDCs follows.

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.

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.

GDC 3, “Fire Protection,” requires SSCs important to safety be designed and located to minimize the effects of fires and explosions.

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).

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.

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.

Prior to incorporation of TSTF-448, Revision 3, the STS requirements addressing CRE boundary operability resided only in the following CRE ventilation system specifications:

- NUREG-1430, TS 3.7.10, “Control Room Emergency Ventilation System (CREVS)”
- NUREG-1431, TS 3.7.10, “Control Room Emergency Filtration System (CREFS)”
- NUREG-1432, TS 3.7.11, “Control Room Emergency Air Cleanup System (CREACS)”
- NUREG-1433, TS 3.7.4, “Main Control Room Environmental Control (MCREC) System”
- NUREG-1434, TS 3.7.3, “Control Room Fresh Air (CRFA) System”

In these specifications, the SR associated with demonstrating the operability of the CRE boundary requires verifying that one CRFA subsystem can maintain a positive pressure relative to the areas adjacent to the CRE during the pressurization mode of operation at a makeup flow rate. Facilities that pressurize the CRE during the emergency mode of operation of the CRFA system have similar surveillance requirements. Other facilities that do not pressurize the CRE have only a system flow rate criterion for the emergency mode of operation. Regardless, the results of ASTM E741 (Reference 2) tracer gas tests to measure CRE unfiltered inleakage at facilities indicated that the differential pressure surveillance (or the alternative surveillance at non-pressurization facilities) is not a reliable method for demonstrating CRE boundary operability. That is, licensees were able to obtain differential pressure and flow measurements satisfying the SR limits even though unfiltered inleakage was determined to exceed the value assumed in the safety analyses.

In addition to an inadequate SR, the action requirements of these specifications were ambiguous regarding CRE boundary operability in the event CRE unfiltered inleakage is found to exceed the analysis assumption. The ambiguity stemmed from the view that the CRE boundary may be considered operable but degraded in this condition, and that it would be deemed inoperable only if calculated radiological exposure limits for CRE occupants exceeded a licensing basis limit, e.g., as stated in GDC-19, even while crediting compensatory measures.

NRC Administrative Letter (AL) 98-10, "Dispositioning of Technical Specifications That Are Insufficient to Assure Plant Safety," (AL 98-10) states that "the discovery of an improper or inadequate TS value or required action is considered a degraded or nonconforming condition," which is defined in NRC Inspection Manual Chapter 9900; see latest guidance in RIS 2005-20 (Reference 3). Imposing administrative controls in response to an improper or inadequate TS is considered an acceptable short-term corrective action. The NRC staff expects that, following the imposition of administrative controls, an amendment to the inadequate TS, with appropriate justification and schedule, will be submitted in a timely fashion."

Licensees that have found unfiltered inleakage in excess of the limit assumed in the safety analyses and have yet to either reduce the inleakage below the limit or establish a higher bounding limit through re-analysis, have implemented compensatory actions to ensure the safety of CRE occupants, pending final resolution of the condition, consistent with RIS 2005-20. However, based on GL 2003-01 and AL 98-10, the NRC staff expects each licensee to propose TS changes that include a surveillance to periodically measure CRE unfiltered inleakage in order to satisfy 10 CFR 50.36(d)(3), which requires a facility's TS to include SRs, which it defines as "requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation [LCO] will be within safety limits, and *that limiting conditions for operation will be met*." (Emphasis added.)

The NRC staff also expects facilities to propose unambiguous remedial actions, consistent with 10 CFR 50.36(d)(2), for the condition of not meeting the limiting condition for operation (LCO) due to an inoperable CRE boundary. The action requirements should specify a reasonable completion time to restore conformance to the LCO before requiring a facility to be shut down. This completion time should be based on the benefits of implementing mitigating actions to ensure CRE occupant safety and sufficient time to resolve most problems anticipated with the CRE boundary, while minimizing the chance that operators in the CRE will need to use mitigating actions during accident conditions.

2.4 Adoption of TSTF-448, Revision 3, by PNPP

Adoption of TSTF-448, Revision 3, will assure that the facility's TS LCO for the CRER system is met by demonstrating that unfiltered leakage into the CRE is within limits, i.e., the operability of the CRE boundary. In support of this surveillance, which specifies a test interval (frequency) described in RG 1.197, TSTF-448 also adds TS administrative controls to assure the habitability of the CRE between performances of the ASTM E741 test. In addition, adoption of TSTF-448 will establish clearly stated and reasonable required actions in the event CRE unfiltered inleakage is found to exceed the analysis assumption.

The changes made by TSTF-448 to the STS requirements for the CRER system 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 PNPP's CRE will remain habitable during normal operation and DBA conditions. These changes 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 operational mode of the CRER system at the PNPP does not pressurize 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 3.7.3, "Control Room Emergency Recirculation (CRER) System," and adding a new TS administrative controls program on CRE habitability. Accompanying the proposed TS changes are appropriate conforming technical changes to the TS Bases. The proposed revision to the 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 NRC 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, TS 5.5.11, "TS Bases Control Program," provides assurance that the licensee has established and will maintain the adequacy of the Bases. The proposed Bases for TS 3.7.3 refer to specific guidance in Nuclear Energy Institute 99-03, "Control Room Habitability Assessment Guidance," Revision 0, dated June 2001 (Reference 6), 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 (Reference 4).

3.2 Editorial Changes

The licensee proposed editorial changes to TS 3.7.3, "Control Room Emergency Recirculation (CRER) System," to establish standard terminology, such as "control room envelope (CRE)" in place of "control room," and the plant-specific name for the Control Room Emergency Recirculation (CRER) System in place of bracketed terms [CREEVS] and [CRFA]. The licensee also utilizes the phrase "primary containment or fuel handling building" in place of the bracketed phrase [primary or secondary containment]. These changes improve the usability and quality of the presentation of the TS, have no impact on safety, and therefore, are acceptable.
The licensee takes exception to the phrase "CRE occupant exposure to radiological, chemical, and smoke limits." The licensee points out that during the development of Revision 3 to TSTF-448, it was agreed that smoke requirements were qualitative rather than quantitative. (See NRC minutes of the meeting dated May 12, 2006, ADAMS Accession No. ML061310293).

The licensee also states that the CRE hazard evaluations for hazardous chemicals stored or transported onsite or near PNPP performed per RG 1.78, Revision 0, do not require that isolation of the normal control room ventilation system be credited. The Applicable Safety Analysis section of the included Bases markup explains that the current PNPP licensing basis for hazardous chemicals does not require a limit on control room inleakage and, therefore, the limit on radiological inleakage is the limiting value for control room inleakage. The proposed wording of Required Action B.2, with respect to chemicals, is consistent with the words used in the NRC model safety evaluation, Evaluation No. 2, and with the words in the model Bases for Required Action B.2. In Section 5.5.14.e of the new CRE Habitability Program, the reference to limits on inleakage for hazardous chemicals has been retained to require the establishment of quantitative limits if future licensing basis hazard evaluations determine that limits on chemical inleakage are necessary to protect control room envelope occupants. These changes improve the usability and quality of the presentation of the TS, have no impact on safety, and therefore, are acceptable.

3.3 TS 3.7.3, "Control Room Emergency Recirculation (CRER) System"

Evaluation 1 - for facilities that have adopted the CREVAS TS LCO NOTE and Action B of TSTF-287, Rev. 5

Not Applicable.

Evaluation 2 - for facilities that have not yet adopted the Control Room Fresh Air (CRFA) System TS LCO NOTE and Action B of TSTF-287, Rev. 5

The licensee proposed to establish new action requirements in TS 3.7.3, "CRER," for an inoperable CRE boundary. Currently, if one CRER subsystem is determined to be inoperable due to an inoperable CRE boundary, existing Action A would apply and require restoring the CRER subsystem (and the CRE boundary) to operable status within seven days. If two CRER subsystems are determined to be inoperable due to an inoperable CRE boundary, existing Action D specifies no time to restore the CRE subsystems (and the CRE boundary) to operable status, but requires immediate entry into the shutdown actions of LCO 3.0.3. 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 action requirements to add a new Condition B, "One or more CRER subsystems inoperable due to inoperable CRE boundary in MODE 1, 2, or 3." New Action B would allow 90 days to restore the CRE boundary (and consequently, the affected CRER subsystems) to operable status, provided that mitigating actions are immediately implemented and within 24 hours are verified to ensure, that in the event of a DBA, 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 new Required Action B.2 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 of new Required Action B.3 is a reasonable time to diagnose, test, plan and possibly repair most anticipated problems with the CRE boundary. Therefore, proposed Action B is acceptable.

To distinguish new Condition B from the existing condition for one CRER subsystem inoperable, Condition A is revised to state, "One CRER subsystem inoperable for reasons other than Condition B." To distinguish new Condition B from the existing condition for two CRER subsystems inoperable, Condition D (renumbered as Condition E) is revised to state, "Two CRER subsystems inoperable during MODE 1, 2, or 3 for reasons other than Condition B." The changes to existing Conditions A and D are less restrictive because these Conditions will no longer apply in the event one or two CRER subsystems are inoperable due to an inoperable CRE boundary during unit operation in Mode 1, 2, or 3. This is acceptable because the new Action B establishes adequate remedial measures in this condition. With the addition of a new Condition B, existing Conditions B, C, D, and E are re-designated C, D, E, and F, respectively.

The licensee also proposed to modify the CRER LCO 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.

Evaluation 3 - for B&W [CREVS] TS

Not Applicable – PNPP is a General Electric Plant

Evaluation 4 - for B&W, CE, and W [CREEVS] TS

Not Applicable – PNPP is a General Electric Plant

Evaluation 5 - for BWR4 and BWR6 Control Room Fresh Air (CRFA) System TS
The licensee proposed to add a new condition to Action F of TS 3.7.3 that states, “One or more CRER subsystems inoperable due to an inoperable CRE boundary during movement of recently irradiated fuel assemblies in the secondary containment or during operations with a potential for draining the reactor vessel (OPDRVs).” The specified Required Actions proposed for this condition are the same as for the other existing condition for Action F, which states, “Two CRER subsystems inoperable during movement of recently irradiated fuel assemblies in the secondary containment, or during OPDRVs.” Accordingly, the new condition is stated with the other condition in Action F using the logical connector “OR”. The practical result of this presentation in

format is the same as specifying two separately numbered Actions, one for each condition. Its advantage is to make the TS Actions table easier to use by avoiding having an additional numbered row in the Actions table. This new condition in Action F is needed because proposed Action B will only apply in Modes 1, 2, and 3. As such, this change will ensure that the Actions table continues to specify a condition for an inoperable CRE boundary during refueling and OPDRVs. Therefore, this change is administrative and acceptable.

Evaluation 6 - for facilities that have a CRE pressurization SR

PNPP has a neutral-pressure design rather than a pressurized design for the post-accident CRE. Therefore, the licensee has modified the testing requirements for a CRE pressurization SR to a test commensurate with the design at PNPP.

In Evaluation 6, the model SE addresses relocation of the pressurization test of the overall CRE from SR 3.7.3.4 into the CRE Habitability Program (as sub-item d), and replacement of the CRE pressurization SR with an inleakage SR. At PNPP, the test required to be performed by SR 3.7.3.4 is different than the STS SR 3.7.3.4. The PNPP SR requires a pressurization/leakage test of six CRER outside air intake and exhaust dampers. Because the PNPP CRER system is a neutral-pressure design rather than a pressurized design, this damper component test was substituted for the standard pressurization test when the original PNPP TSs were developed. Relocating the PNPP damper pressurization/leakage test to the CRE Habitability Program as sub-item d (which will continue to require the damper test to be performed at least once per operating cycle) is considered to be enveloped by Evaluation 6 because of the similarity in the action being taken (relocation) and the reason for the relocation. Since the damper test only checks a portion of the CRE, meeting existing PNPP SR 3.7.3.4 is not necessarily a conclusive indication of CRE boundary leak tightness, i.e., CRE boundary OPERABILITY, similar to the discussion in Evaluation 6 for the standard pressurization test. Since the damper test is not sufficient on its own to ensure ongoing OPERABILITY of the overall CRE, the existing SR 3.7.3.4 test is replaced with an ASTM E741 unfiltered air inleakage test of the entire envelope, coupled with the new CRE Habitability Program in TS Section 5.5, as also discussed in Evaluation 6.

The leakage testing of the inlet and outlet dampers along with the periodic assessment of the CRE will provide indication of status of the health of the envelope and therefore is considered acceptable.

The proposed CRE inleakage measurement SR states, “Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.” The CRE Habitability Program TS, proposed TS 5.5.14, requires that the program include “Requirements for determining the unfiltered air inleakage 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 (Reference 5). This guidance references ASTM E741 (Reference 2) as an acceptable method for ascertaining the unfiltered leakage into the CRE. The licensee has proposed to follow this method. Therefore, the proposed CRE inleakage measurement SR is acceptable

3.4 TS 5.5.14, CRE Habitability Program

The proposed administrative controls program TS is consistent with the model program TS in TSTF-448, Revision 3. In combination with SR 3.7.3.4, this program is intended to ensure the operability of the CRE boundary, which as part of an operable CRER 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 a 5 rem TEDE for the duration of the accident.

A CRE Habitability Program TS acceptable to the NRC staff requires the program to contain 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 SE. 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 RG 1.196 (Reference 4), which endorsed, with exceptions, NEI 99-03 (Reference 6). 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 RG 1.197, Revision 0 (Reference 5), and measurement of unfiltered air leakage into the CRE in accordance with the testing methods and at the frequencies stated in Sections C.1 and C.2 of RG 1.197. This element is intended to ensure that the plant assesses CRE habitability consistent with Sections C.1 and C.2 of RG 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. Testing of the damper leakage at the NRC accepted frequencies provides assurance that significant degradation of the CRE boundary will not occur between CRE inleakage determinations.

The licensee states they will not measure the CRE pressure with respect to all adjacent areas to the CRE boundary. The post-accident configuration of the PNPP CRE is not pressurized. The performance of a CRE pressurization measurement is not practical or meaningful. The licensee proposes instead to perform a pressurization/leakage test of six CRER outside air intake and exhaust dampers at a frequency of 24 months. Obtaining and trending the damper pressurization/leakage data along with the existing preventative maintenance program provides additional assurance that significant degradation of the CRE boundary will not go undetected between CRE inleakage determinations.

Quantitative limits on unfiltered inleakage: This element is intended to establish the CRE inleakage 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 LCO 3.7.3, will ensure that associated action requirements will be consistently applied in the event of CRE degradation resulting in inleakage exceeding the limit.

Consistent with TSTF-448, Revision 3, the program states that the provisions of SR 3.0.2 are applicable to the program frequencies for performing the activities required by program paragraph number c, parts (i) and (ii) (assessment of CRE habitability and measurement of CRE inleakage), and paragraph number d (leakage of CRE inlet and outlet dampers). This statement is needed to avoid confusion. SR 3.0.2 is applicable to the surveillance that references the testing in the CRE Habitability Program. However, SR 3.0.2 is not applicable to Administrative Controls unless specifically invoked. Providing this statement in the program eliminates any confusion regarding whether SR 3.0.2 is applicable, and is acceptable.

Consistent with TSTF-448, Revision 3, proposed TS 5.5.14 states 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 SR 3.0.2 shall apply to program frequencies. Therefore, TS 5.5.14, which is consistent with the model program TS approved by the NRC staff in TSTF-448, Revision 3, is acceptable.

3.5 Implementation of New Surveillance and Assessment Requirements by the Licensee

The licensee has proposed license conditions regarding the initial performance of the new surveillance and assessment requirements. The new license conditions adopted the conditions in Section 2.3 of the model application published in the *Federal Register* on January 17, 2007 (72 FR 2022). Plant specific changes were made to the proposed license conditions. The proposed plant specific license conditions are consistent with the model application, and are acceptable.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

This 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 and changes SRs. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluent 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding (73 FR 5221). Accordingly, this 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 this 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 this amendment will not be inimical to the common defense and security or to the health and safety of the public.

7.0 REFERENCES

1. NRC Generic Letter 2003-01, "Control Room Habitability," dated June 12, 2003, (GL 2003-01).

2. ASTM E 741 – 00, "Standard Test Method for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution, " 2000, (ASTM E741).

3. NRC Regulatory Issue Summary 2005-20: revision to Guidance Formerly Contained in NRC Generic Letter 91-18, "Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability," dated September 26, 2005 (RIS 2005-20).

4. Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," Revision 0, dated May 2003.

5. Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003.

6. NEI 99-03, "Control Room Habitability Assessment Guidance," Revision 0, dated June 2001.

7. Sixty Day Response to Generic Letter 2003-01, "Control Room Habitability" (ADAMS Accession No. ML032320295).

8. Perry Nuclear Power Plant Final Response to Generic Letter 2003-01, "Control Room Habitability" (ADAMS Accession No. ML061580074).

9. Supplemental Response to Generic Letter 2003-01, "Control Room Habitability" for the Perry Nuclear Power Plant (ADAMS Accession No. ML070860220).

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