UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 29, 2009

Vice President, Operations
Arkansas Nuclear One
Entergy Operations, Inc.
1448 S.R. 333
Russellville, AR 72802

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT NO. 2 - ISSUANCE OF AMENDMENT RE: ADOPTION OF TECHNICAL SPECIFICATION TASK FORCE (TSTF) CHANGE TRAVELER TSTF-448, REVISION 3, "CONTROL ROOM ENVELOPE HABITABILITY" (TAC NO. MD7175)

Dear Sir or Madam:

The Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 288 to Renewed Facility Operating License No. NPF-6 for Arkansas Nuclear One, Unit No. 2 (ANO-2). The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated October 22, 2007, as supplemented by letter dated January 12, 2009.

The amendment adds a new license condition 2.c.(11) on the control room envelope (CRE) habitability program; revises TS requirements related to the CRE habitability in TS 3/4.7.6, "Control Room Emergency Ventilation and Air Conditioning System"; and adds a new administrative controls program, TS 6.5.12, "Control Room Envelope Habitability Program." These changes are consistent with the NRC-approved Industry/TS Task Force (TSTF) change traveler TSTF-448, Revision 3, "Control Room Envelope Habitability." The availability of this TS improvement was published in the *Federal Register* on January 17, 2007 (72 FR 2022), as part of the Consolidated Line Item Improvement Process.

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

Sincerely,

Alan Wang

Alan B. Wang, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-368

Enclosures:
1. Amendment No. 288 to NPF-6
2. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-368

ARKANSAS NUCLEAR ONE, UNIT NO. 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 288
Renewed License No. NPF-6

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

   A. The application for amendment by Entergy Operations, Inc. (the licensee), dated October 22, 2007, as supplemented by letter dated January 12, 2009, 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 license 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 Renewed Facility Operating License No. NPF-6 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 288, are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications

3. In addition, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and a new license condition under Paragraph 2.c.(11) of Renewed Facility Operating License No. DPR-51 is hereby amended to read as follows:

(11) Upon implementation of Amendment 288 adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 4.7.6.1.2.d, in accordance with Specifications 6.5.12.c.(i), 6.5.12.c.(ii), and 6.5.12.d, shall be considered met. Following implementation:

(i) The first performance of SR 4.7.6.1.2.d, in accordance with Specification 6.5.12.c.(i), shall be within 15 months of the approval of TSTF-448. SR 4.0.2 will not be applicable to this first performance.

(ii) The first performance of the periodic assessment of CRE habitability, Specification 6.5.12.c.(ii), shall be within 15 months of the approval of TSTF-448. SR 4.0.2 will not be applicable to this first performance.

(iii) The first performance of the periodic measurement of CRE pressure, Specification 6.5.12.d, shall be within 15 months of the approval of TSTF-448. SR 4.0.2 will not be applicable to this first performance.

4. The license amendment is effective as of its date of issuance and shall be implemented within 30 days from the implementation of the Arkansas Nuclear One, Unit No. 1 Alternate Source Term license Amendment No. 238.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility
Operating License No. NPF-6
Technical Specifications

Date of Issuance: October 29, 2009

ATTACHMENT TO LICENSE AMENDMENT NO. 288

RENEWED FACILITY OPERATING LICENSE NO. NPF-6

DOCKET NO. 50-368

Replace the following pages of the Renewed Facility Operating License No. NPF-6 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.

Operating License

REMOVE	INSERT
3	3
7	7
8	8
--	9

Technical Specifications

REMOVE	INSERT
3/4 7-17	3/4 7-17
3/4 7-17a	3/4 7-17a
3/4 7-18	3/4 7-18
6-16	6-16
6-17	6-17

(4) EOI, pursuant to the Act and 10 CFR Parts 30, 40 and 70 to receive, possess and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

(5) EOI, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(6) EOI, pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This renewed license shall be deemed to contain and is subject to conditions specified in the following Commission regulations in 10 CFR Chapter 1; Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

EOI is authorized to operate the facility at steady state reactor core power levels not in excess of 3026 megawatts thermal. Prior to attaining this power level EOI shall comply with the conditions in Paragraph 2.C.(3).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 288 are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

Exemptive 2nd paragraph of 2.C.2 deleted per Amendment 20, 3/3/81.

(3) Additional Conditions

The matters specified in the following conditions shall be completed to the satisfaction of the Commission within the stated time periods following issuance of the renewed license or within the operational restrictions indicated. The removal of these conditions shall be made by an amendment to the renewed license supported by a favorable evaluation by the Commission.

2.C.(3)(a) Deleted per Amendment 24, 6/19/81.

(10) Mitigation Strategies

The licensee shall develop and maintain strategies for addressing large fires and explosions that include the following key areas:

(i) Fire fighting response strategy with the following elements:

1. Pre-defined coordinated fire response strategy and guidance
2. Assessment of mutual aid fire fighting assets
3. Designated staging areas for equipment and materials
4. Command and control
5. Training of response personnel

(ii) Operations to mitigate fuel damage considering the following:

1. Protection and use of personnel assets
2. Communications
3. Minimizing fire spread
4. Procedures for implementing integrated fire response strategy
5. Identification of readily-available pre-staged equipment
6. Training on integrated fire response strategy
7. Spent fuel pool mitigation measures

(iii) Actions to minimize release to include consideration of:

1. Water spray scrubbing
2. Dose to onsite responders

(11) Upon implementation of Amendment 288 adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 4.7.6.1.2.d, in accordance with Specifications 6.5.12.c.(i), 6.5.12.c.(ii), and 6.5.12.d, shall be considered met. Following implementation:

(i) The first performance of SR 4.7.6.1.2.d, in accordance with Specification 6.5.12.c.(i), shall be within 15 months of the approval of TSTF-448. SR 4.0.2 will not be applicable to this first performance.

(ii) The first performance of the periodic assessment of CRE habitability, Specification 6.5.12.c.(ii), shall be within 15 months of the approval of TSTF-448. SR 4.0.2 will not be applicable to this first performance.

(iii) The first performance of the periodic measurement of CRE pressure, Specification 6.5.12.d, shall be within 15 months of the approval of TSTF-448. SR 4.0.2 will not be applicable to this first performance.

D. Physical Protection

EOI shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans, including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "Arkansas Nuclear One Physical Security, Safeguards Contingency and Training & Qualification Plan," as submitted on May 4, 2006.

E. This renewed license is subject to the following additional condition for the protection of the environment:

Before engaging in additional construction or operational activities which may result in an environmental impact that was not evaluated by the Commission, EOI will prepare and record an environmental evaluation for such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not evaluated, or that is significantly greater than that evaluated, in the Final Environmental Statement (NUREG-0254) or any addendum thereto, and other NRC environmental impact assessments, EOI shall provide a written evaluation of such activities and obtain prior approval from the Director, Office of Nuclear Reactor Regulation.

F. Updated Final Safety Analysis Report Supplement

The Final Safety Analysis Report supplement, as revised, shall be included in the next scheduled update to the Final Safety Analysis Report required by 10 CFR 50.71(e)(4) following issuance of this renewed license. Until that update is complete, ANO-2 may make changes to the programs and activities described in the supplement without prior Commission approval, provided that ANO-2 evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements of that section.

The ANO-2 Final Safety Analysis Report supplement, submitted pursuant to 10 CFR 54.21(d), describes certain future activities to be completed prior to the period of extended operation. ANO-2 shall complete these activities no later than July 17, 2018, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

G. Reactor Vessel Material Surveillance Capsules

All capsules in the reactor vessel that are removed and tested must meet the test procedures and reporting requirements of American Society for Testing and Materials (ASTM) E 185-82 to the extent practicable for the configuration of the specimens in the capsule. Any changes to the capsule withdrawal schedule, including spare capsules, must be approved by the NRC prior to implementation. All capsules placed in storage must be maintained for future insertion.

4. This renewed license is effective as of the date of issuance and shall expire at midnight, July 17, 2038.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by J. E. Dyer

J. E. Dyer, Director
Office of Nuclear Reactor Regulation

Attachments:

1. Appendix A - Technical Specifications
2. Preoperational Tests, Startup Tests and other items which must be completed by the indicated Operational Mode

Date of Issuance: June 30, 2005

PLANT SYSTEMS

3/4.7.6 CONTROL ROOM EMERGENCY VENTILATION AND AIR CONDITIONING SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.6.1 Two independent control room emergency ventilation and air conditioning systems shall be OPERABLE. (Note 1)

APPLICABILITY: MODES 1, 2, 3, 4, or during handling of irradiated fuel.

ACTION:

MODES 1, 2, 3, and 4

a. With one control room emergency air conditioning system (CREACS) inoperable, restore the inoperable system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one control room emergency ventilation system (CREVS) inoperable for reasons other than ACTION d, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With one CREVS inoperable for reasons other than ACTION d and one CREACS inoperable, restore the inoperable CREVS to OPERABLE status within 7 days and restore the inoperable CREACS to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

d. With one or more CREVS inoperable due to an inoperable CRE boundary:

   1. Immediately initiate action to implement mitigating actions, and

   2. Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits within 24 hours, and

   3. Restore the CRE boundary to OPERABLE status within 90 days

   Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

e. With two CREVS inoperable for reasons other than ACTION d or with two CREACS inoperable, enter Specification 3.0.3.

Note 1: The control room envelope (CRE) boundary may be open intermittently under administrative controls.

3/4.7.6 CONTROL ROOM EMERGENCY VENTILATION AND AIR CONDITIONING SYSTEM

LIMITING CONDITION FOR OPERATION

During Handling of Irradiated Fuel

f. With one CREACS inoperable, restore the inoperable system to OPERABLE status within 30 days or immediately place the OPERABLE system in operation; otherwise, suspend all activities involving the handling of irradiated fuel.

g. With one CREVS inoperable, restore the inoperable system to OPERABLE status within 7 days or immediately place the control room in the emergency recirc mode of operation; otherwise, suspend all activities involving the handling of irradiated fuel.

h. With one CREVS inoperable for reasons other than ACTION d and one CREACS inoperable:

   1. restore the inoperable CREVS to OPERABLE status within 7 days or immediately place the CRE in the emergency recirc mode of operation, and

   2. restore the inoperable CREACS to OPERABLE status within 30 days or immediately place the OPERABLE system in operation;

   3. otherwise, suspend all activities involving the handling of irradiated fuel.

i. With both CREACS inoperable, immediately suspend all activities involving the handling of irradiated fuel.

j. With both CREVS inoperable or with one or more CREVS inoperable due to an inoperable CRE boundary, immediately suspend all activities involving the handling of irradiated fuel.

SURVEILLANCE REQUIREMENTS

4.7.6.1.1 Each control room emergency air conditioning system shall be demonstrated OPERABLE:

a. At least once per 31 days by:

1. Starting each unit from the control room, and

2. Verifying that each unit operates for at least 1 hour and maintains the control room air temperature ≤ 84°F D.B.

b. At least once per 18 months by verifying a system flow rate of 9900 cfm ± 10%.

4.7.6.1.2 Each control room emergency air filtration system shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that the system operates for at least 15 minutes.

b. At least once per 18 months by verifying that on a control room high radiation signal, either actual or simulated, the system automatically isolates the control room and switches into a recirculation mode of operation.

c. By performing the required Control Room Emergency Ventilation filter testing in accordance with the Ventilation Filter Testing Program (VFTP).

d. Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.

6.5.12 Control Room Envelope Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE Control Room Emergency Ventilation System (CREVS), 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 design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem whole body or its equivalent to any part of the body for the duration of the accident. The program shall include the following elements:

a. The definition of the CRE and the CRE boundary.

b. Requirements for maintaining the CRE boundary in its design condition including configuration control and preventive maintenance.

c. Requirements for (i) 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 Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one train of the CREVS, operating at the flow rate required by the VFTP, at a Frequency of one train every 18 months. The results shall be trended and used as part of the 18 month assessment of the CRE boundary.

e. The quantitative limits on unfiltered air inleakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air inleakage measured by the testing described in paragraph c. The unfiltered air inleakage limit for radiological challenges is the inleakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air inleakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.

f. The provisions of Specification 4.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered inleakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.

6.5.13 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:

   1. an API gravity or an absolute specific gravity within limits,

   2. a flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and

   3. water and sediment within limits;

b. Within 31 days following addition of new fuel oil to storage tanks, verify that the properties of the new fuel oil, other than those addressed in a. above, are within limits for ASTM 2D fuel oil;

c. Total particulate concentration of the fuel oil is $\leq$ 10 mg/l when tested every 31 days based on ASTM D-2276, Method A-2 or A-3; and

d. The provisions of SR 4.0.2 and SR 4.0.3 are applicable to the Diesel Fuel Oil Testing Program surveillance frequencies.

6.5.14 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

   1. A change in the TS incorporated in the license or

   2. A change to the updated SAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the SAR.

d. Proposed changes that do not meet the criteria of 6.5.14b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

6.5.15 not used

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 288 TO

RENEWED FACILITY OPERATING LICENSE NO. NPF-6

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT NO. 2

DOCKET NO. 50-368

1.0 INTRODUCTION

By application dated October 22, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML073030547), as supplemented by letter dated January 12, 2009 (ADAMS Accession No. ML090130131), Entergy Operations, Inc. (Entergy, the licensee), requested changes to the Technical Specifications (TSs) for the Arkansas Nuclear One, Unit No. 2 (ANO-2). The proposed amendment allows ANO-2 to adopt the U.S. Nuclear Regulatory Commission (NRC)-approved industry TS Task Force (TSTF) change traveler TSTF-448, Revision 3, "Control Room Envelope Habitability." The availability of this TS improvement was published in the *Federal Register* on January 17, 2007 (72 FR 2022), as part of the Consolidated Line Item Improvement Process.

The supplemental letter dated January 12, 2009, 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 December 18, 2007 (72 FR 71710).

The proposed amendment would (1) add a new license condition 2.c.(11) on the control room envelope (CRE) habitability program; (2) revise TS 3/4.7.6, "Control Room Emergency Ventilation and Air Conditioning System," requirements related to the CRE habitability, and (3) add a new administrative controls program, TS 6.5.12, "Control Room Envelope Habitability Program," to the administrative controls section of the TSs.

On August 8, 2006, the commercial nuclear electrical power generation industry owners group TSTF submitted a proposed change, TSTF-448, Revision 3, to the improved standard technical specifications (STS) (NUREGs 1430-1434) on behalf of the commercial nuclear electrical power generation industry owners group (TSTF-448, Revisions 0, 1, and 2 were prior draft iterations). The approved TSTF-448, Revision 3, established more effective and appropriate TSs actions, surveillances, and administrative requirements to ensure habitability of the CRE is maintained.

ANO-2 is a Combustion Engineering designed pressurized-water reactor (PWR). The TSs for the plant are consistent with NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants Specifications."

NRC alerted licensees in NRC Generic Letter (GL) 2003-01, "Control Room Habitability" (Reference 1), to NRC staff findings that facility TS surveillance requirements (SRs) for the Control Room Envelope Emergency Ventilation System (CREEVS) may not be adequate. Specifically, results of American Society for Testing and Materials (ASTM) E741 (Reference 2) tracer gas tests to measure CRE unfiltered inleakage indicated that differential pressure surveillance testing is not a reliable method for demonstrating CRE boundary operability. Licensees were requested to address their existing TSs 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 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 traveler TSTF-448, "Control Room Habitability," which the NRC staff approved on January 17, 2007.

Consistent with the traveler as incorporated into NUREG-1432, the licensee proposed revising actions and SRs in TS 3/4.7.6, "Control Room Emergency Ventilation and Air Conditioning System," and adding a new administrative controls program, TS 6.5.12, "Control Room Envelope Habitability Program." 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.

In its submittal, the licensee stated the justifications presented in the TSTF-448, Revision 3, and the model safety evaluation SE prepared by the NRC are applicable to ANO-2 and justify the proposed amendment for ANO-2. Some editorial and plant-specific changes were incorporated

into this safety evaluation resulting in minor deviations from the model safety evaluation text in TSTF-448, Revision 3. For instance, ANO-2 is a Combustion Engineering plant but describes its ventilation system as Control Room Emergency Ventilation System (CREVS) rather than Control Room Emergency Air Cleanup System (CREACS) as used in NUREG-1432.

2.0 REGULATORY EVALUATION

2.1 Control Room and Control Room Envelope

NRC Regulatory Guide 1.196, "Control Room Habitability at Light-water Nuclear Power Reactors," Revision 0, May 2003 (Reference 4), 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 (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 safety evaluation, consistent with the proposed changes to the STS, the CRE will be used to designate both.

2.2 Control Room Emergency Ventilation System (CREVS)

The CREVS (the term used at ANO-2 for the Control Room Envelope Emergency Ventilation System) 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 CREVS 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 5 rem whole body or its equivalent to any part of the body for the duration of the accident.

The CREVS consists of two redundant trains, each capable of maintaining the habitability of the CRE. The CREVS is considered operable when the individual components necessary to limit operator exposure are operable in both trains. A CREVS 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 inleakage is less than or equal to the inleakage 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.

In Attachment 1 of a letter from Entergy dated August 28, 2003 (ADAMS Accession No. ML032450205), "Response to Generic Letter 2003-01 Arkansas Nuclear One, Units 1 &2," Entergy confirmed that ANO-2 is licensed to the following GDCs:

- 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 Bases for Protection Against Natural Phenomena," requires that SSCs important to safety be designed to withstand the effects of earthquakes and other natural hazards without loss of capability to perform their safety functions.
- 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 Combustion Engineering STS requirements addressing CRE boundary operability resided only in TS 3.7.11, "Control Room Emergency Air Cleanup System (CREACS)." In this TS, the SR associated with demonstrating the operability of the CRE boundary requires verifying that one CREVS train 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 CREVS have similar SRs. 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 this TS 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 "[t]he 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 Regulatory Issue Summary (RIS) 2005-20 (Reference 3). AL 98-10 also states that "imposing administrative controls in response to an improper or inadequate TS is considered an acceptable short-term corrective action. The staff expects that, following the imposition of

administrative controls, an amendment to the 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: 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." 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 of the *Code of Federal Regulations* (10 CFR) 50.36(c)(3), which requires a facility's TSs to include SRs, which it defines as "[r]equirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation 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(c)(2), for the condition of not meeting the LCOs 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 respond to abnormal operating occurrences or accident conditions.

Because the design of the plant is not being changed by the proposed amendment, the plant continues to meet GDCs 1, 2, 3, 4, and 5. Because the proposed addition to TS 6.5.12 requires the dose requirements in GDC 19 to be met, GDC 19 will also continue to be met by the plant.

2.4 Regulations Applicable to TS Changes

In Section 50.36 of 10 CFR, "Technical specifications," the NRC established its regulatory requirements related to the content of TSs. Pursuant to 10 CFR 50.36, TSs are required to include items in the following five specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) surveillance requirements (SRs); (4) design features; and (5) administrative controls. The rule does not specify the particular requirements to be included in a plant's TS. As stated in 10 CFR 50.36(c)(2)(i), the "[l]imiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility." Also the regulations establishing surveillance requirements in 10 CFR 50.36(c)(3) state that "[s]urveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components will be maintained within safety limits, and that the limiting conditions for operation will be met."

2.5 Adoption of TSTF-448, Revision 3

Adoption of TSTF-448, Revision 3, will assure that the facility TS LCO for the CREVS is met by demonstrating unfiltered leakage into the CRE is within limits, i.e., establishes requirements for operability of the CRE boundary. In support of this surveillance, which specifies a test interval (frequency) based on Regulatory Guide 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 specific required actions to be met 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 CREVS and the CRE boundary conform to 10 CFR 50.36(c)(2) and 10 CFR 50.36(c)(3). Their adoption will better assure that the ANO-2 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 CREVS at ANO-2 pressurizes the CRE to minimize unfiltered air inleakage. The proposed changes are consistent with this design.

3.1 Proposed Changes to the Operating License

3.1.1 Condition Added to the License

The following new condition is to be added to the license as condition number 2.c.(11):

(11) Upon implementation of Amendment 288 adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 4.7.6.1.2.d, in accordance with Specifications 6.5.12.c.(i), 6.5.12.c.(ii), and 6.5.12.d, shall be considered met. Following implementation:

(i) The first performance of SR 4.7.6.1.2.d, in accordance with Specification 6.5.12.c.(i), shall be within 15 months of the approval of TSTF-448. SR 4.0.2 will not be applicable to this first performance.

(ii) The first performance of the periodic assessment of CRE habitability, Specification 6.5.12.c.(ii), shall be within 15 months of the approval of TSTF-448. SR 4.0.2 will not be applicable to this first performance.

(iii) The first performance of the periodic measurement of CRE pressure, Specification 6.5.12.d, shall be within 15 months of the

approval of TSTF-448. SR 4.0.2 will not be applicable to this first performance.

SR 4.0.2 states that:

> Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval.

Providing the statement "SR 4.0.2 will not be applicable to this first performance" in the license condition eliminates any confusion regarding whether SR 4.0.2 is applicable.

3.1.2 Proposed Changes to the TSs

The proposed amendment would strengthen CRE habitability TS requirements by changing TS 3/4.7.6, "Control Room Emergency Ventilation and Air Conditioning System," and adding a new TS administrative controls program on CRE habitability, TS 6.5.12, "Control Room Envelope Habitability Program." 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 TS Bases changes, which were made to improve clarity, conform to the latest information and references, correct factual errors, and achieve more consistency among the STS NUREGs. Entergy will implement the TS Bases for TS 3/4.7.6, consistent with TSTF 448, Revision 3, as adopted for the applicable license amendment. Except for plant-specific differences, all of these changes are consistent with STS as revised by TSTF-448, Revision 3.

Because ANO-2 is not an STS plant, the NRC staff compared the proposed TS changes to the STS markups and evaluations in TSTF-448 (See Table 1) and concluded they were comparable. 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, TS 6.5.14, "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 3/4.7.6 refer to specific guidance in Nuclear Energy Institute (NEI) 99-03, "Control Room Habitability Assessment Guidance," Revision 0, dated June 2001 (Reference 6), which the NRC staff has formally endorsed, with exceptions, through Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," dated May 2003 (Reference 4).

3.2 Editorial Changes to TS 3/4.7.6

The licensee proposed editorial changes to action requirements 3.7.6.1.a through 3.7.6.1.j and SRs 4.7.6.1.1 and 4.7.6.1.2 in TS 3/4.7.6, "Control Room Emergency Ventilation and Air Conditioning System," to establish standard terminology, such as "control room envelope (CRE)" in place of "control room," except for the plant-specific name for the CREVS (plant-specific name for CREEVS), and "radiological, chemical, and smoke hazards (or challenges)" in

place of various phrases to describe the hazards that CRE occupants are protected from by the CREVS. 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 3/4.7.6, Control Room Emergency Ventilation and Air Conditioning System

The licensee proposed to revise the action requirements of TS 3/4.7.6, "Control Room Emergency Ventilation and Air Conditioning System," to establish that an inoperable CRE boundary, depending upon the location of the associated degradation, could cause just one, instead of both CREVS trains to be inoperable. This is accomplished by revising the Required Actions in TS 3.7.6.1.b to exclude new TS 3.7.6.1.d, which will address one or more CREVS trains, as follows:

> b. With one control room emergency ventilation system (CREVS) inoperable for reasons other than ACTION d, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

This change clarifies TS action requirements to be taken in the event just one CREVS train is unable to ensure CRE occupant safety within licensing basis limits due to inoperable CRE boundary. It enhances the usability of TS Actions 3.7.6.1.b and TS 3.7.6.1.d with a presentation that is more consistent with the intent of the existing requirements. This change is an administrative change because it neither reduces nor increases the existing action requirements, and, therefore, is acceptable.

The licensee proposed to add TS Action 3.7.6.1.d.1 to immediately initiate action to implement mitigating actions; to add TS Action 3.7.6.1.d.2, to verify, within 24 hours, 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; and to add TS Action 3.7.6.1.d.3, to restore CRE boundary to operable status within 90 days. The Actions in TS 3.7.6.1.d will read as follows:

> d. With one or more CREVS inoperable due to an inoperable CRE boundary:
>
> 1. Immediately initiate action to implement mitigating actions, and
>
> 2. Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits within 24 hours, and
>
> 3. Restore the CRE boundary to OPERABLE status within 90 days
>
> Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

The 24-hour Completion Time of new TS Action 3.7.6.1.d.2 is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions as directed by Required Action TS 3.7.6.1.d.1. The 90-day Completion Time of new Action TS

3.7.6.1.d.3 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 Actions TS 3.7.6.1.d.1, d.2, and d.3 are acceptable.

In the emergency radiation mode of operation, the CREVS isolates unfiltered ventilation air supply intakes, filters the emergency ventilation air supply to the CRE, and pressurizes the CRE to minimize unfiltered air inleakage past the CRE boundary. The licensee proposed to delete the CRE pressurization SR. This SR requires verifying that one CREVS train, operating in the emergency radiation mode, can maintain a positive pressure in the CRE during the pressurization mode of operation. The deletion of this SR is proposed because measurements of unfiltered air leakage into the CRE at numerous reactor facilities demonstrated that a basic assumption of this SR, an essentially leak-tight CRE boundary, was incorrect for most facilities. Hence, meeting this SR by achieving the required CRE pressure is not necessarily a conclusive indication of CRE boundary leak-tightness (i.e., CRE boundary operability). In its response to GL 2003-01, dated August 28, 2003 (Reference 7), the licensee reported that it had determined that the ANO-2 CRE pressurization surveillance, SR 4.7.6.1.2.d and e, were inadequate to demonstrate the operability of the CRE boundary, and proposed to replace the SR with an inleakage measurement SR and a CRE Habitability Program in TS Section 6.5.12, in accordance with the approved version of TSTF-448. Based on the adoption of TSTF-448, Revision 3, the licensee's proposed deletions of current SR 4.7.6.1.2.d and e are acceptable.

The proposed new CRE inleakage measurement SR 4.7.6.1.2.d would state, "Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program." The CRE Habitability Program TS, proposed TS 6.5.12, 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 Regulatory Guide 1.197..." (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 6.5.12, Control Room Envelope Habitability Program

The proposed new administrative controls program TS is consistent with the model program TS in TSTF-448, Revision 3. In combination with SR 4.7.6.1.2.d, this program is intended to ensure the operability of the CRE boundary, which as part of an operable CREVS 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 whole body or its equivalent to any part of the body 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 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 (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 Regulatory Guide 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 Regulatory Guide 1.197. Assessing CRE habitability at the NRC staff 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. Determination of CRE inleakage at the NRC staff accepted frequencies provides assurance that significant degradation of the CRE boundary will not occur between CRE inleakage determinations.

- 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 18 months on a staggered test basis (with respect to the CREVS trains) as defined in the STS. 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.

- 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 3.7.6.1, 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 4.0.2 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 (measurement of CRE differential pressure). This statement is needed to avoid confusion. SR 4.0.2 is applicable to the surveillance that references the testing in the CRE Habitability Program. However, SR 4.0.2 is not applicable to Administrative Controls unless specifically invoked. Providing this statement in the program eliminates any confusion regarding whether SR 4.0.2 is applicable, and is acceptable.

Consistent with TSTF-448, Revision 3, proposed TS 6.5.12 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 4.0.2 shall apply to program frequencies. Therefore, TS 6.5.12, which is consistent with the model program TS approved by the NRC staff in TSTF-448, Revision 3, is acceptable.

3.5 License Conditions

In its supplemental letter dated January 12, 2009, the licensee agreed to add license conditions related to the initial performance of the new surveillance and assessment requirements. Paragraph 2.c.(11) of Facility Operating License No. NPF-6 is hereby amended to add a new license condition, designated as Amendment No. 288, to read as follows:

(11) Upon implementation of Amendment 288 adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 4.7.6.1.2.d, in accordance with Specifications 6.5.12.c.(i), 6.5.12.c.(ii), and 6.5.12.d, shall be considered met. Following implementation:

(i) The first performance of SR 4.7.6.1.2.d, in accordance with Specification 6.5.12.c.(i), shall be within 15 months of the approval of TSTF-448. SR 4.0.2 will not be applicable to this first performance.

(ii) The first performance of the periodic assessment of CRE habitability, Specification 6.5.12.c.(ii), shall be within 15 months of the approval of TSTF-448. SR 4.0.2 will not be applicable to this first performance.

(iii) The first performance of the periodic measurement of CRE pressure, Specification 6.5.12.d, shall be within 15 months of the approval of TSTF-448. SR 4.0.2 will not be applicable to this first performance.

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 these proposed license conditions. The proposed plant-specific license conditions are consistent with the model application, and are acceptable.

3.6 Summary

Based on the above, the NRC staff concludes the proposed changes meet the technical requirements in the regulations that are discussed in Sections 2.0 and 3.0 of this safety evaluation. Based on this, the NRC staff further concludes that the proposed TS changes in the proposed amendment meet 10 CFR 50.36 and, therefore, the proposed amendment is acceptable.

The licensee identified changes to be made to the TS Bases that are associated with the TSs that are being changed in Attachment 4 to its application. The NRC does not approve these changes. The changes to the TS Bases to the TS Bases are made by the licensee through TS 5.5.14, "Technical Specifications (TS) Bases Control Program." However, the NRC has reviewed the identified changes to the TS Bases for this amendment and does not have any objections to these changes.

4.0 REGULATORY COMMITMENT

In its October 22, 2007, submittal, as revised by letter dated January 12, 2009, the licensee made the following regulatory commitment:

- Entergy will establish the Technical Specification (TS) Bases for TS 3.7.6.1, consistent with TSTF 448, Revision 3, as adopted with the applicable license amendment.

This commitment is scheduled to be implemented with issuance of this amendment. The NRC concludes this commitment is acceptable.

5.0 STATE CONSULTATION

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

6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. 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 considerations, and there has been no public comment on the finding published in the *Federal Register* on December 18, 2007

(72 FR 71710). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (c)(10). 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.

7.0 CONCLUSION

The Commission has concluded, on the basis of 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.

8.0 REFERENCES

1. NRC Generic Letter 2003-01, "Control Room Habitability," dated June 12, 2003 (ADAMS Accession No. ML031620248).

2. American Society for Testing and Materials (ASTM) E741-00, "Standard Test Method for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution," 2000.

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 (ADAMS Accession No. ML031490611).

5. Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003 (ADAMS Accession No. ML031490664).

6. Nuclear Energy Institute (NEI) 99-03, "Control Room Habitability Assessment Guidance," Revision 0, dated June 2001.

7. G. R. Ashley, Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Response to Generic Letter 2003-01, Control Room Habitability," dated August 28, 2003 (ADAMS Accession No. ML032450205).

Principal Contributor: A. Wang

Date: October 29, 2009

Table 1
Comparison of TSTF-448 TS 3.7 Requirements to
Arkansas Nuclear One, Unit 2 TS Requirements
for Control Room Envelope Ventilation System

TSTF-448 TS Section	Applicability	Equivalent TS for ANO-2 Proposed TS
3.7.10.A	1, 2, 3, and 4	3.7.6.1.b
3.7.10.B	1, 2, 3, and 4	3.7.6.1.d
3.7.10.C	1, 2, 3, and 4	3.7.6.1.b and 3.7.6.1.d
3.7.10.D	During handling of irradiated fuel	3.7.6.1.g
3.7.10.E	During handling of irradiated fuel	3.7.6.1.j
3.7.10.F	1, 2, 3, and 4	3.7.6.1.e
TSTF-448 SRs		**Equivalent SR for ANO-2 Proposed SR**
SR 3.7.11.1		4.7.6.1.2.a
SR 3.7.11.2		4.7.6.1.2.c
SR 3.7.11.3		4.7.6.1.2.b
SR 3.7.11.4		4.7.6.1.2.d

October 29, 2009

Vice President, Operations
Arkansas Nuclear One
Entergy Operations, Inc.
1448 S.R. 333
Russellville, AR 72802

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT NO. 2 - ISSUANCE OF AMENDMENT RE: ADOPTION OF TECHNICAL SPECIFICATION TASK FORCE (TSTF) CHANGE TRAVELER TSTF-448, REVISION 3, "CONTROL ROOM ENVELOPE HABITABILITY" (TAC NO. MD7175)

Dear Sir or Madam:

The Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 288 to Renewed Facility Operating License No. NPF-6 for Arkansas Nuclear One, Unit No. 2 (ANO-2). The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated October 22, 2007, as supplemented by letter dated January 12, 2009.

The amendment adds a new license condition 2.c.(11) on the control room envelope (CRE) habitability program; revises TS requirements related to the CRE habitability in TS 3/4.7.6, "Control Room Emergency Ventilation and Air Conditioning System"; and adds a new administrative controls program, TS 6.5.12, "Control Room Envelope Habitability Program." These changes are consistent with the NRC-approved Industry/TS Task Force (TSTF) change traveler TSTF-448, Revision 3, "Control Room Envelope Habitability." The availability of this TS improvement was published in the *Federal Register* on January 17, 2007 (72 FR 2022), as part of the Consolidated Line Item Improvement Process.

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

Sincerely,
/RA/

Alan B. Wang, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-368
Enclosures:
1. Amendment No. 288 to NPF-6
2. Safety Evaluation
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ADAMS Accession No.: ML082520574

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	DIRS/ITSB/BC	OGC	NRR/LPL4/BC	NRR/LPL4/PM
NAME	AWang	JBurkhardt	RElliott	Not Required	MMarkley	AWang
DATE	10/14/09	10/6/09	10/26/09	--	10/28/09	10/29/09

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