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

December 29, 2016

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: REVISE TECHNICAL SPECIFICATIONS TO ADOPT TSTF-426, REVISION 5, "REVISE OR ADD ACTIONS TO PRECLUDE ENTRY INTO LCO 3.0.3 – RITSTF INITIATIVES 6b & 6c" (CAC NO. MF7213)

Dear Sir or Madam:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 304 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 December 22, 2015.

The amendment revises the TSs to provide a short Allowed Outage Time to restore an inoperable system for conditions under which the existing ANO-2 TSs require a plant shutdown. The amendment is consistent with NRC-approved TS Task Force (TSTF) traveler TSTF-426, Revision 5, "Revise or Add Actions to Preclude Entry into LCO [Limiting Condition for Operation] 3.0.3 – RITSTF [Risk-Informed TSTF] Initiatives 6b & 6c."

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

Sincerely,

Thomas J. Wengert, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-368

Enclosures:
1. Amendment No. 304 to NPF-6
2. Safety Evaluation

cc w/encls: Distribution via Listserv

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. 304
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 December 22, 2015, 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. 304, are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications

3. The license amendment is effective as of its date of issuance and shall be implemented within 90 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Acting BC for

Robert J. Pascarelli, 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: December 29, 2016

ATTACHMENT TO LICENSE AMENDMENT NO. 304

TO RENEWED FACILITY OPERATING LICENSE NO. NPF-6

ARKANSAS NUCLEAR ONE, UNIT 2

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-

Technical Specifications

REMOVE	INSERT
3/4 4-5	3/4 4-5
3/4 6-10	3/4 6-10
3/4 7-17	3/4 7-17
3/4 7-17a	3/4 7-17a

(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 I; 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. 304, 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.

REACTOR COOLANT SYSTEM

PRESSURIZER

LIMITING CONDITION FOR OPERATION

3.4.4 The pressurizer shall be OPERABLE with a water volume of ≤ 910 cubic feet (equivalent to ≤ 82% of wide range indicated level) and both pressurizer proportional heater groups shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

(a) With the pressurizer inoperable due to water volume ≥ 910 cubic feet, be in at least HOT SHUTDOWN with the reactor trip breakers open within 12 hours.

(b) With the pressurizer inoperable due to an inoperable emergency power supply to the pressurizer heaters, either restore the inoperable emergency power supply in accordance with TS 3.8.1.1, Action b.3, for an inoperable Emergency Diesel Generator, or be in at least HOT SHUTDOWN within 12 hours.

(c) With the pressurizer inoperable due to a single proportional heater group having less than a 150 KW capacity, restore the inoperable proportional heater group to OPERABLE status within 72 hours, or be in at least HOT SHUTDOWN within 12 hours.

(d) With the pressurizer inoperable due to both proportional heater groups being inoperable for any reason (Note 1), restore at least one proportional heater group to OPERABLE status within 24 hours, or be in at least HOT SHUTDOWN within 12 hours.

SURVEILLANCE REQUIREMENTS

4.4.4.1 The pressurizer water volume shall be determined to be within its limits at least once per 12 hours.

4.4.4.2 The pressurizer proportional heater groups shall be determined to be OPERABLE.

(a) At least once per 12 hours by verifying emergency power is available to the heater groups, and

(b) At least once per 18 months by verifying that the summed power consumption of the two proportional heater groups is ≥ 150 KW.

Note 1: Action (d) is not applicable when the second group of required pressurizer heaters is intentionally made inoperable.

3/4.6.2 DEPRESSURIZATION, COOLING, AND pH CONTROL SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Two independent containment spray systems shall be OPERABLE with each spray system capable of taking suction from the RWT on a Containment Spray Actuation Signal (CSAS) and automatically transferring suction to the containment sump on a Recirculation Actuation Signal (RAS). Each spray system flow path from the containment sump shall be via an OPERABLE shutdown cooling heat exchanger.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. With one containment spray system inoperable, restore the inoperable spray system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With both containment spray systems inoperable (Note 1):

1. Within 1 hour verify both CREVS trains are OPERABLE, and

2. Restore at least one containment spray system to OPERABLE status within 24 hours.

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

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each containment spray system shall be demonstrated OPERABLE:

a. At least once per 31 days by:

1. Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.

2. Verifying that the system piping is full of water from the RWT to at least elevation 505' (equivalent to > 12.5% indicated narrow range level) in the risers within the containment.

b. Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head when tested pursuant to the Inservice Testing Program.

Note 1: ACTION b is not applicable when the second containment spray system is intentionally made inoperable.

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.

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.

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.

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

e. With two CREVS inoperable for reasons other than ACTION d (Note 2):

   1. Immediately initiate action to implement mitigating actions, and

   2. Within 1 hour, verify LCO 3.4.8, "Specific Activity," is met, and

   3. Within 24 hours, restore at least one CREVS to OPERABLE status.

f. With two CREACS inoperable (Note 2), restore at least one CREACS to OPERABLE status within 24 hours.

With ACTIONS a, b, c, d, e, and/or f not met, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. LCO 3.0.4.a is not applicable when entering HOT SHUTDOWN.

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

Note 2: ACTION e is not applicable if the second CREVS is intentionally made inoperable. ACTION f is not applicable if the second CREACS is intentionally made inoperable.

3/4.7.6 CONTROL ROOM EMERGENCY VENTILATION AND AIR CONDITIONING SYSTEM

LIMITING CONDITION FOR OPERATION

During Handling of Irradiated Fuel

g. 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.

h. 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.

i. 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.

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

k. 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.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 304 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 December 22, 2015 (Reference 1), Entergy Operations, Inc. (Entergy or the licensee), requested changes to the technical specifications (TSs) for Arkansas Nuclear One, Unit No. 2 (ANO-2).

The proposed amendment revises the TSs to provide a short Allowed Outage Time (referred to as Completion Time (CT) in this safety evaluation) to restore an inoperable system under which the existing TSs require a plant shut down for ANO-2. The proposed amendment is consistent with U.S. Nuclear Regulatory Commission (NRC)-approved Technical Specifications Task Force (TSTF) Traveler TSTF-426, Revision 5, "Revise or Add Actions to Preclude Entry into LCO [(Limiting Condition for Operation)] 3.0.3 – RITSTF [(Risk-Informed TSTF)] Initiatives 6b & 6c" (TSTF-426) (Reference 2), as published in the *Federal Register* on May 30, 2013 (78 FR 32476), with certain plant-specific administrative variations.

Traveler TSTF-426 incorporated the approved Topical Report (TR) WCAP-16125-NP-A, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown" (TR WCAP-16125) (Reference 3), into NUREG-1432, "Standard Technical Specifications - Combustion Engineering [(CE)] Plants," April 2012 (STS) (Reference 4). TR WCAP-16125 provided the justification for risk-informed TS (RITS) Initiative 6 for nuclear plants with CE-designed nuclear steam supply systems. RITS Initiative 6 modifies selected exigent shutdown actions to allow a risk-informed operating time prior to shutdown.

2.0 REGULATORY EVALUATION

The ANO-2 TSs utilize different numbering, titles, and acronyms than the STS on which TSTF 426 was based. References to STS numbers in the model safety evaluation (SE) for TSTF-426 have been changed to the ANO-2 specific numbers and titles. In addition, the

licensee proposed some wording and formatting differences between TSTF-426 and the proposed changes to some TSs to support the format and wording used in the non-standard ANO-2 TSs. These differences are administrative and do not affect the applicability or the model SE for TSTF-426 to the ANO-2 TSs.

TR WCAP-16125 justified modifications to various TSs to add a Condition for loss of redundant features representing a loss of safety function for a system or component included within the scope of the plant TSs. It would replace Required Actions requiring either a default shutdown or explicit LCO 3.0.3 entry with a Required Action based on the risk significance for the system's degraded condition. The Condition being added is for redundant trains discovered to be inoperable. The Condition only applies to discovery of an emergent condition resulting in redundant trains being inoperable, not from the second train intentionally made inoperable. The CTs associated with the proposed actions are specified. The CTs are intentionally of short duration to allow for restoring the system to an operable condition, thereby avoiding the risk associated with an immediate controlled shutdown. In all of the TS changes proposed by ANO-2, a 24-hour CT is justified. Table 1 summarizes ANO-2's TS changes.

Table 1

TS	System/Component	Condition	Current CT	Proposed CT
3.4.4	Pressurizer	Two vital-powered groups of proportional heaters inoperable.	None/ LCO 3.0.3	24 hours
3.6.2.1	Containment Spray System (CSS) (credit taken for iodine removal)	Two containment spray trains inoperable (both containment cooling trains must be operable – LCO 3.6.2.3).	None/ LCO 3.0.3	24 hours †
3.7.6.1	Control Room Emergency Ventilation (CREVS) and Air Conditioning System (CREACS)	CREVS: Two trains inoperable for reasons other than an inoperable control room envelope (CRE) boundary. CREACS: Two trains inoperable.	LCO 3.0.3 LCO 3.0.3	24 hours 24 hours

† Must include verification that the LCO for CREVS is met.

The Commission's regulatory requirements related to the content of the TS are contained in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.36, "Technical specifications." Pursuant to 10 CFR 50.36(c) the TSs are required to include items in the following specific categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) LCOs; (3) surveillance requirements; (4) design features; and (5) administrative controls. The regulation at 10 CFR 50.36(c)(2) states, in part, that "[w]hen [an LCO] of a nuclear reactor

is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met."

NRC Regulatory Guide (RG) 1.174, Revision 2, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," May 2011 (Reference 5), describes a risk-informed approach, acceptable to the NRC, for assessing the nature and impact of proposed permanent licensing-basis changes by considering engineering issues and applying risk insights. RG 1.174 also provides risk acceptance guidelines for evaluating the results of such evaluations.

General guidance for evaluating the technical basis for proposed risk-informed changes is provided in Section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance," June 2007, of NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition" (SRP) (Reference 6). Section 19.2 of the SRP states that a risk-informed application should be evaluated to ensure that the proposed change meets the following key principles:

- The proposed change meets the current regulations, unless it explicitly relates to a requested exemption (i.e., a "specific exemption" under 10 CFR 50.12).
- The proposed change is consistent with the defense-in-depth philosophy.
- The proposed change maintains sufficient safety margins.
- When proposed changes increase core damage frequency or risk, the increases should be small and consistent with the intent of the Commission's Safety Goal Policy Statement (60 FR 42622).
- The impact of the proposed change should be monitored using performance measurement strategies.

3.0 TECHNICAL EVALUATION

The NRC staff reviewed the licensee's proposed change against the following:

- the requirements of 10 CFR 50.36,
- the STS changes approved for adoption in the Notice of Availability of TSTF-426 as part of the consolidated line item improvement process (CLIIP) announced in the *Federal Register* on May 30, 2013 (78 FR 32746), and
- the methodology approved in TR WCAP-16125, as documented in an SE dated May 24, 2010 (Reference 7). TR WCAP-16125 was reviewed against RG 1.174 and SRP Section 19.2.

3.1 Conformance with the Five Key Principles of SRP Section 19.2 as Summarized in the SE of TR WCAP-16125

The changes proposed in TSTF-426 are consistent with NRC-approved TR WCAP-16125. In its SE (Reference 7), the NRC staff evaluated TR WCAP-16125 for conformance with the five key principles of SRP Section 19.2.

3.1.1 Compliance with Current Regulations

Regulations in 10 CFR 50.36 permit either a plant shutdown or other remedial actions specified by TSs when an LCO is not met. The proposed change provides new action requirements for conditions of equipment inoperability, which currently require an immediate plant shutdown. Since such remedial actions are permitted per 10 CFR 50.36, the proposed change continues to comply with current regulations, and therefore, satisfies this key principle.

3.1.2 Defense-in-Depth

The proposed change addresses conditions where both trains of a system are inoperable, resulting in a loss of that system's function and a temporary reduction in the defense-in-depth capabilities of the plant. Each proposed change addresses the remaining available alternative system(s) capable of providing mitigation of events, and, where applicable, includes requirements to assure these required backup systems are operable. The reduced level of defense-in-depth is justified by verification that both trains (if applicable) of the backup system are operable. Therefore, this key principle is satisfied by the unique requirements identified for each proposed TS change.

3.1.3 Safety Margins

The proposed change does not have any impact on the use of NRC-approved codes and standards, nor do the changes impact any acceptance criteria used in a plant's licensing basis. Under the current TSs, if an accident occurs during the 6-hour controlled shutdown time of LCO 3.0.3 caused by two trains of these systems being unavailable, it could potentially result in offsite dose limits that do not meet NRC regulatory limits. Since the changes proposed do not modify the design basis of the systems evaluated, extending the allowed outage time to 24 hours would have no quantitative effect on the dose consequence as compared to the existing condition. As such, the proposed changes would not significantly reduce the plant's available safety margin; therefore, this key principle is satisfied.

3.1.4 Performance Monitoring

The proposed change would permit continued plant operation for short periods to address emergent equipment failures. Degradation of equipment performance could lead to excessive use of the new action requirements. This is adequately addressed by equipment performance monitoring required by 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," and therefore, this key principle is satisfied.

3.1.5 Risk Assessment

The risk of each of the TS LCOs for which action requirements are proposed is evaluated in TR WCAP-16125 by three methods, as described below.

Method 1:

For those TSs governing systems or components, which provide mitigation of core damage and large early releases, changes in the core damage frequency and large early release frequency (ΔCDF and ΔLERF, respectively) metrics are calculated using a simplified generic method, and the results are compared to the acceptance guidelines of RG 1.174.

For calculations of ΔCDF, a bounding approach was applied to evaluate loss of function of a system by identifying the initiating events for which the system provides mitigation, and assuming that the event goes directly to core damage. No credit was taken for alternate mitigation strategies, and the baseline CDF was effectively assumed to be zero. The initiating event frequencies were taken from NUREG/CR-5750, "Rates of Initiating Events at U. S. Nuclear Power Plants: 1987 – 1995" (Reference 8). The licensee verified that initiating frequencies in NUREG/CR-5750 are bounding for ANO-2.

For ΔLERF, a simplified approach using an event tree was developed to calculate the fraction of core damage events which result in large early releases. The event tree assessed containment isolation status, reactor coolant system (RCS) pressure, secondary side depressurization via the steam generators, thermally-induced steam generator tube rupture (SGTR), and reactor pressure vessel (RPV) lower head failure. Assumptions related to the potential impact on LERF for each of these events, and the associated basis for probabilities used in the analysis, are discussed below:

Containment Isolated – This event defines containment integrity prior to the core damage event. If containment is not isolated, then a large early release will result concurrent with core damage. A probability of 3.0E-3 was applied for an unisolated containment, which is identified as the upper end of the range used in the CE Probabilistic Risk Assessment models in TR WCAP-16125.

RCS Pressure – High – This event defines the RCS pressure at the time of core damage. If the pressure is low, then large early releases are assumed not to occur (except via an unisolated containment); otherwise, thermally-induced SGTR and high-pressure melt ejection events are further evaluated. All core damage events involving loss-of-coolant accidents are assumed to result in low or intermediate RCS pressure, and all other events result in high RCS pressure.

Steam Generator Depressurization – This event defines the status of the secondary side, and affects the next event which is the potential for induced SGTR. Depressurization of the secondary side occurs either due to prior operator response or due to failure of a safety relief valve. Based on NUREG-1570, "Risk Assessment of Severe Accident Induced Steam Generator Tube Rupture," March 1998 (Reference 9), a probability of 0.9 is assigned for secondary depressurization.

Thermally-induced SGTR Occurs – This event represents a loss of steam generator tube integrity due to thermal stresses during a severe accident, which is assumed to result in a large early release. Two values are used, based on the status of the prior event, for steam generator depressurization. A probability of 0.5 is assigned when the steam generators are depressurized, and 0.01 otherwise. These values are conservative, based on the assumptions regarding tube age and integrity and based on neglecting operator actions to depressurize the RCS after core damage.

RPV Lower Head Failure Results in Containment Failure – This event represents a high-pressure failure of the lower head, with an energetic discharge of the molten fuel and direct containment heating, leading to failure of containment. Based on NUREG/CR-6338, "Resolution of Direct Containment Heating Issue for all Westinghouse Plants with Large Dry Containments or Subatmospheric Containments," February 1996 (Reference 10), the conditional containment failure probability given the event for CE-designed plants is 0.01, which is considered to be a bounding value.

None of the assessed initiating events include either SGTRs or other containment bypass events because the systems being evaluated do not mitigate these events. The NRC staff concludes that the simplified LERF event tree is reasonable and acceptable to support the evaluation of LERF for the scope of TR WCAP-16125.

Method 2:

For TS 3.4.4, "Pressurizer," an evaluation of the increased likelihood of a plant trip due to degraded pressure control is made in order to calculate ΔCDF. The ΔLERF calculation for this TS is the same simplified approach described above for Method 1.

Method 3:

The remaining systems (and associated TSs) associated with mitigation of radiological releases with magnitudes less than those associated with LERF are: CREVS (TS LCO 3.7.6.1); and CREACS (TS LCO 3.7.6.1). There is no impact to either CDF or LERF, as the systems are provided to meet design-basis dose limits. As described in TR WCAP-16125, an evaluation of the frequency of events, which challenge the systems, was made and compared to the acceptance guidelines of RG 1.174 applicable to ΔLERF in order to characterize the risk of these lesser releases. TR WCAP-16125 provided additional justification based on the availability of other systems, which provide a degree of defense-in-depth for prevention of these releases.

To reduce the impact of an increased CT for CREVS, TR WCAP-16125 added conditions to verify that RCS specific activity is within limits and to verify that dose mitigating actions are available in the control room. For limited durations, such as the short-term operational conditions proposed by the increased CT for the CREVS, the NRC staff has accepted credit for the use of respirators and potassium iodide on an interim basis to demonstrate that control room dose limits can be met.

Similarly, TR WCAP-16125 added pre-planned actions to ensure that the impact of loss of post-accident temperature control associated with an increased CT for the CREACS is

mitigated. Actions can include use of portable fans, temporary opening of doors, or use of normal heating, ventilation, and air conditioning systems. To support this change, administrative controls will be provided to monitor the control room temperature to ensure control room habitability and operability of TS equipment. If compensatory measures impact the CRE, the operability of containment and auxiliary building post-accident air cleanup systems will be verified. The 24-hour CTs proposed in TR WCAP-16125 for the CREVS and the CREACS is consistent with the allowed 24-hour period for the evaluation of a breach of the control room envelope provided in Traveler TSTF-448 (Reference 11).

The NRC staff has reviewed the bases for the increased CT for the CREVS and the CREACS and has determined that the proposed conditions and compensatory measures provide reasonable assurance that control room habitability will be adequately maintained during the proposed 24-hour CT.

External events, including internal fires and floods, were not evaluated in TR WCAP-16125. None of the systems being evaluated provide a primary mitigating function for external events, and therefore these events are not significant to the risk-informed decision.

TR WCAP-16125 also evaluated sensitivity studies for key areas of uncertainty in the analyses. Specifically, TR WCAP-16125 considered uncertainties in the initiating event frequencies, which are the input to the CDF calculations and showed that even assuming a 95 percent upper bound frequency would not result in excessive risk. These were also propagated into the LERF calculations with similar results. TR WCAP-16125 also addressed uncertainties in the thermally-induced SGTR assumptions and steam generator depressurization assumptions, and demonstrated that the LERF results are not significantly impacted. These sensitivity studies performed to evaluate the key sources of uncertainty in the risk analyses adequately demonstrate the robustness of the results to support the proposed TS changes.

3.2 TS Changes

This section provides a description of each TS change and the NRC staff evaluation of each proposed TS change. The NRC staff's evaluation approves only the proposed changes to the TSs as described below. ANO-2 TSs are not formatted following the STS. Therefore, the term "Condition(s)" used in the previous sections of this document and in TSTF-426 will be replaced by the term "Action(s)" to describe ANO-2's plant-specific LCO "Conditions," which are referred to as "Actions."

TS 3.4.4 – Pressurizer

The pressurizer and the vital-powered groups of pressurizer proportional heaters maintain a liquid-to-vapor interface to permit RCS pressure control during normal operations and in response to anticipated design-basis transients. The vital-powered groups of pressurizer proportional heaters, with their power provided by emergency alternating current power busses, are used to maintain RCS subcooling during a natural circulation cooldown, and the unavailability of the heaters will extend the time to reach entry conditions for the shutdown cooling system. The unavailability of the vital-powered groups of pressurizer proportional heaters may complicate steady-state RCS pressure control and may increase the potential of an

unplanned reactor trip. However, the availability of additional heaters beyond the two groups required by this TS LCO permit continued RCS pressure control.

The current TS 3.4.4 does not provide any action requirements for two inoperable proportional heater groups, and therefore TS 3.0.3 applies, which requires an immediate plant shutdown. The proposed change provides for a 24-hour CT to restore at least one proportional heater to operable status, to permit continued operation under an existing action requirement. The unavailability of the vital-powered proportional heaters would not have any significant impact on plant transient response, and so there is no quantifiable impact to CDF or LERF. While mitigation of an SGTR is enhanced by the availability of pressurizer heaters, the backup heaters can also function if offsite power is available, and plant procedures provide for mitigation of an SGTR without pressurizer heaters, if necessary.

Conservatively, the risk result due to increased likelihood of a reactor trip was calculated by assuming an order-of-magnitude increase in the reactor trip frequency when both vital-powered groups of pressurizer proportional heaters are inoperable. The risk result is then calculated based on the conditional core damage probability given a reactor trip with no other complications:

ΔCDF	**RG 1.174 Guidance**	**ΔLERF**	**RG 1.174 Guidance**
1.0E-7/yr	<1.0E-6/yr	3.8E-9/yr	<1.0E-7/yr

The ΔCDF and ΔLERF were assessed based on a bounding once-per-3-year entry into the proposed action requirement from TR WCAP-16125 and assumed that the entire 24-hour duration of the CT is used. The risk results are well below the acceptance guidelines of RG 1.174, as noted in the table.

Minimum pressurizer heater capability is supplemented by the normal availability of the backup heaters for normal plant pressure control, and the availability of plant procedures, which provide plant shutdown and cooldown guidance with or without pressurizer heaters. If the available heaters are sufficient to maintain RCS pressure control, normal plant operations can continue. Because unavailability of vital-powered groups of pressurizer proportional heaters and backup heaters would physically result in plant shutdown, the NRC staff does not consider it necessary to specify additional TS or administrative requirements for the backup heater availability.

The current TS 3.4.4 does not contain an Action for two required groups of proportional heaters inoperable. As a result, this situation would require immediate entry into LCO 3.0.3. A new Action d is being added for two required groups of proportional heaters inoperable, which requires restoration of at least one required proportional heater to operable status within 24 hours. The new Action is modified by a note stating it is not applicable when the second group of required pressurizer heaters is intentionally made inoperable.

The conservatively-calculated risk result is within the acceptance guidelines of RG 1.174, and there is limited impact of plant shutdown and cooldown without pressurizer heaters. Therefore, the NRC staff finds the proposed new Action d requirement and 24-hour CT acceptable.

In addition to the changes related to TSTF-426, the licensee is proposing two additional changes to TS 3.4.4. The first change adds clarifying information to TS 3.4.4 Action b. The clarifying information added includes referring to the correct Action (3.8.1.1 Action b.3) and specifying what that Action is for (an inoperable emergency diesel generator). The second change adds new Action c to TS 3.4.4. New Action c provides a specific action for when the pressurizer is inoperable due to a single proportional heater group having less than a 150 kilowatt (kW) capacity. New Action c requires the inoperable proportional heater group to be restored to operable status within 72 hours, or be in at least hot shutdown within 12 hours. Current TS 3.4.4 does not contain an Action specific to the capacity of a single heater group, however, operability was established as requiring at least 150 kW of capacity as supported by existing surveillance requirement (SR) 4.4.4.2.b. New Action c establishes an Action to address not meeting SR 4.4.4.2.b and adds clarity to the use of TS LCO 3.4.4. In addition, the CT of 72 hours is reasonable considering that a demand caused by a loss of offsite power would be unlikely in this period. In addition, the remaining proportional heater group or, in the absence of offsite power, the non-vital backup pressurizer heater banks, would also support pressurizer pressure control.

Neither of the two additional changes described above change the intent of the original TS LCO 3.4.4. Both add clarity and improve usage of this specification without changing any requirement. Therefore, the NRC staff finds the two proposed changes to TS LCO 3.4.4 Action b and new Action c acceptable.

TS 3.6.2.1 – Containment Spray Systems (credit taken for iodine removal)

The containment spray system (CSS) and the containment cooling system (CCS) provide post-accident cooling and mixing of the containment atmosphere. In addition to the heat removal function, the CSS enhances post-accident fission product removal.

The current TS 3.6.2.1 does not contain an Action for inoperability of both CSS trains, and therefore if the fission product removal function is not available, an explicit LCO 3.0.3 entry is required. The request for additional information (RAI) responses (Reference 12) proposed a 24-hour CT for TS 3.6.2.1 consistent with the other iodine removal TS changes. A TS action to verify the operability of the CREVS was proposed to assure additional defense-in-depth for control room functionality when both CSS trains are inoperable during the 24-hour CT.

Based on the information in TR WCAP-16125, it may be conservatively assumed that if both CSS trains are unavailable following a postulated core damage event, then some radioactive release above design limits, but well below the large early release level, would occur. A bounding estimate for CDF of CE plants was identified as 1E-4/year, so that over a 24-hour period the probability of a significant core damage event which would require the unavailable system would be:

$$(1E\text{-}4/\text{year}) \times (24 \text{ hours}) \times (\text{year}/8760 \text{ hours}) = 2.7E\text{-}7$$

Assuming a once-per-3-year entry into the new TS would result in a frequency of a "less than LERF" release of about 9.0E-8/year. This frequency is within the acceptance guidance of RG 1.174 applicable to large early releases, and therefore, provides a context for consideration of the risk result for smaller releases.

When the function of CSS for fission product removal is unavailable, then the operability of the CREVS, which provides for filtration to protect control room habitability, will be verified as a defense-in-depth measure.

The proposed change adds a new Action b for two CSS trains inoperable with actions to verify within 1 hour that both trains of CREVS are operable and to restore at least one train within 24 hours. Action b is modified by a note stating it is not applicable when the second CSS train is intentionally made inoperable. In addition, a final statement is added to LCO 3.6.2.1 new Action b to provide a shutdown track. If the requirements contained in new Action b are not met, the unit is to be placed in be in at least hot standby within 6 hours and in hot shutdown within the following 6 hours.

New Action b is applicable when two CSS trains are inoperable, provided that both CCS trains are operable. This restriction is imposed by ANO-2 TS LCO 3.6.2.3, "Containment Cooling System," which addresses any combination of three or more trains inoperable with a requirement to default to LCO 3.0.3.

The zero risk result for severe accidents is well below the acceptance guidelines of RG 1.174, and there is verification of operability of the CREVS. Therefore, the NRC staff finds a new Action requirement with a 24-hour CT would be acceptable for the case of both CSS trains inoperable.

TS 3/4.7.6. – Control Room Emergency Ventilation and Air Conditioning System

CREVS

The CREVS provides for filtration of outside air delivered to the control room by the ventilation system in the event of radioactive releases of particulates or iodine from containment following an accident involving fuel failures. This is to assure that control room personnel are protected from potential radiation exposures in excess of regulatory limits. The system may also provide protection of control room personnel from chemical or toxic gas releases by isolating the control room air intakes.

Current TS LCO 3.7.6.1, Action e, requires entry into LCO 3.0.3 if two trains of CREVS are inoperable resulting in an immediate plant shutdown. The proposed change would provide a 24-hour CT to restore at least one train of the CREVS to operable status, to permit continued operation under an existing Action requirement. The current TS already provides a 24-hour CT when both trains are inoperable due specifically to a CRE boundary inoperability.

In the event of an accident involving radioactive releases without the availability of the CREVS, there would be no direct impact on the capability of the control room staff to perform any actions required to mitigate severe core damage or large early releases, because alternative protective measures would be implemented to reduce the dose impacts. If the accident did not involve severe core damage, control room doses even without the CREVS would be minimal, and therefore the CREVS has no direct role in preventing core damage (i.e., $\Delta CDF = 0$). If a core damage accident did occur with CREVS unavailable, then the bounding impact would be to simply assume the event proceeded to a large early release based on the unavailability of the

control room personnel to perform any mitigating actions. This assumption would be very conservative, since large releases occur primarily due to containment bypass accidents, and control room actions following core damage do not prevent the release from occurring.

A bounding estimate for CDF of CE plants was identified as 1E-4/year, so that over a 24-hour period the probability of a significant core damage event, which with the CREVS unavailable is assumed to proceed to a large early release, would be:

$$(1E\text{-}4/\text{year}) \times (24 \text{ hours}) \times (\text{year}/8760 \text{ hours}) = 2.7E\text{-}7$$

Assuming a once-per-3-year entry into the new TS, and assuming the entire 24-hour duration of the CT is used, the conservatively calculated ΔLERF is about 9.0E-8/year. This ΔLERF, and the zero ΔCDF, are below the acceptance guidelines of RG 1.174.

A significant contributor to control room radiological hazards was identified in TR WCAP-16125 from the release of radioactive RCS fluid from a SGTR event. A required TS action to verify LCO 3.4.8, "Specific Activity," is met will be included in the new proposed action to provide additional defense-in-depth.

TR WCAP-16125 also addressed a TS action to require initiation of mitigating actions to lessen the effects of potential hazards of smoke, chemical, radiological, or toxic gas releases. The NRC staff considers the specific hazards and compensatory measures to be plant-specific, and did not find sufficient information to conclude that the proposed changes are acceptable for these events without a plant-specific evaluation. The RAI response (Reference 12) identifies that these mitigating actions were previously reviewed and approved by the NRC staff for Traveler TSTF-448 (Reference 11). TSTF-448 authorizes a generic TS change to permit a 24-hour CT when the CRE boundary is inoperable, and includes the same mitigating actions to assure protection of the control room staff from non-radiological hazards.

Current TS LCO 3.7.6.1, Action e, applies when two CREVS trains are inoperable due to any reason other than an inoperable CRE boundary in Modes 1, 2, 3, or 4 and requires entering LCO 3.0.3 immediately. The TR WCAP-161254 justifies a 24-hour CT for two CREVS trains inoperable for any reason provided that mitigating actions are implemented immediately and it is verified that LCO 3.4.8, is met within 1 hour. Action e is revised to require restoration of at least one CREVS train to operable status within 24 hours. Proposed Action e is modified by a note stating it is not applicable when the second CREVS train is intentionally made inoperable.

The requirement to immediately "initiate action to implement mitigating actions" in proposed Action e.1, is the same as in existing Action d.1. Action d.1 was added by the approved amendment to adopt TSTF-448, (Reference 13).

The requirement to immediately shutdown was deleted from Actions a, b, c, and d and replaced with an equivalent final statement added to the end of TS LCO 3.7.6.1 to capture the shutdown track for all of the LCO's Actions. Specifically, for Action a, the following statement was deleted: "...or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours." For Action b, the following statement was deleted: "...or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. LCO 3.0.4.a is not applicable when entering HOT SHUTDOWN." For Action c, the following

statement was deleted: "...or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. LCO 3.0.4.a is not applicable when entering HOT SHUTDOWN." For Action d, the following statement was deleted: "...Otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. LCO 3.0.4.a is not applicable when entering HOT SHUTDOWN." A sentence equivalent to these four deleted statements is added to the end of TS LCO 3.7.6.1 stating: "With ACTIONS a, b, c, d, e, and/or f not met, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. LCO 3.0.4.a is not applicable when entering HOT SHUTDOWN." This proposed change adds clarity and ease of usage by deleting redundant requirements and improving the format of TS LCO 3.7.6.1.

Based on the risk result being below the acceptance guidelines of RG 1.174 and the additional restriction on meeting specific activity limits in the TS, the NRC staff finds the proposed new Action requirement and 24-hour CT acceptable.

CREACS

The CREACS provides for temperature control of the control room when it is isolated during accident conditions. This assures control room temperature will not exceed equipment operability requirements.

Current TS LCO 3.7.6.1 requires entry into LCO 3.0.3 when both CREACS trains are inoperable. The proposed change would provide a 24-hour CT to restore at least one CREACS train to operable status, to permit continued operation under an existing action requirement.

TR WCAP-16125 stated that the unavailability of the CREACS has a negligible impact on severe accident risk, based on long room heatup times, availability of alternate cooling strategies, and alternate means to control emergency systems locally. The NRC staff reviewed the basis for this conclusion and considered the potential plant impacts if an accident occurred, which isolated the control room while the CREACS was inoperable.

If an accident occurred, which isolated the control room without cooling, and core cooling was being maintained by the emergency core cooling system (ECCS), then there would be negligible radiological consequences and the operators could simply unisolate and realign the normal control room ventilation system to provide continued cooling of the control room. Therefore, there would be no impact on CDF (i.e., $\Delta CDF = 0$).

If core damage occurred after the accident and the control room needed to remain isolated without cooling, the bounding impact would be to simply assume the event proceeded to a large early release based on the unavailability of the control room personnel to perform any mitigating actions. This assumption would be very conservative, since large releases occur primarily due to containment bypass accidents, and control room actions following core damage do not prevent the release from occurring.

A bounding estimate for CDF of CE plants was identified as 1E-4/year, so that over a 24-hour period the probability of a significant core damage event, which with the CREACS unavailable is assumed to proceed to a large early release, would be:

(1E-4/year) x (24 hours) x (year/8760 hours) = 2.7E-7

Assuming a once-per-3-year entry into the new TS, and assuming the entire 24-hour duration of the CT is used, the conservatively calculated ΔLERF is about 9.0E-8/year. This ΔLERF, and the zero ΔCDF, are below the acceptance guidelines of RG 1.174.

Defense-in-depth is provided by alternative control room cooling actions and by the capability for local operation of equipment, if necessary. These actions are typically found in plant procedures, and are not required to be implemented by TS controls. The licensee confirmed in the license amendment request that plant procedures can establish temporary alternate means of control room cooling by stating the following:

> Entergy confirms that plant procedures can establish temporary alternate means of Control Room cooling, as assumed in the justification of the proposed change to the CREACS (reference procedure OP-2014.007, *Control Room Emergency Air Conditioning and Ventilation*).

Current TS LCO 3.7.6.1, Action e, applies when two CREACS trains are inoperable in Mode 1, 2, 3, or 4 and requires entering LCO 3.0.3 immediately. TR WCAP-16125 justifies a 24-hour CT for two CREACS trains inoperable. The current TS LCO 3.7.6.1, Action e requirement addressing CREACS is deleted and replaced by adding new Action f, which addresses two CREACS trains inoperable in Mode 1, 2, 3, or 4 and requires restoration of at least one CREACS train to operable status within 24 hours. In addition, the subsequent Actions are renumbered accordingly. New Action f is modified by a Note stating that "ACTION f is not applicable if the second CREACS is intentionally made inoperable."

Based on the risk result being below the acceptance guidelines of RG 1.174, the NRC staff finds the proposed new action requirement and 24-hour CT acceptable.

3.3 TS Bases Changes

TSTF-426 included and the licensee submitted the following TS Bases changes:

- A reference to the NRC-approved TR WCAP-16125 has been added to the reference section of the TS Bases for each TS affected in TSTF-426.

- Revisions to reflect the changes to the TSs.

- For all affected TSs, a Note on each applicable condition was added that states: "Not applicable when second [system or component name] intentionally made inoperable." The Bases are revised to provide additional explanation of the Note: "The Action is modified by a Note stating it is not applicable if the second [system or component name] is intentionally declared inoperable. The Action does not apply to voluntary removal of redundant systems or components from service.

> The Action is only applicable if one [system or component name] is inoperable for any reason and the second [system or component name] is discovered to be inoperable, or if both [system or component name] are discovered to be inoperable at the same time."

The NRC staff determined that TS Bases changes are consistent with the proposed TS changes and provide the purpose for each requirement in the specification consistent with the Commission's Final Policy Statement on TSs Improvements for Nuclear Power Reactors, dated July 2, 1993 (58 FR 39132).

3.4 Summary

The NRC staff has reviewed the proposed change against approved Traveler TSTF-426, which was based on approved TR WCAP-16125 (using the five key principles of risk-informed decisionmaking) and concludes that the proposed change is acceptable. Appropriate TS notes are provided which assure that the loss of safety function action requirements are not applicable for operational convenience and that voluntary entry into these action requirements in lieu of other alternatives that would not result in redundant systems or components being inoperable are prohibited.

The NRC staff further notes that the proposed change does not alter the regulations for notifications and reports required by 10 CFR Part 50 involving the loss of safety function, and that any plant specific license amendment, which provides a condition to address a loss of safety function would not obviate the requirement for a licensee to provide such notifications and reports.

4.0 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.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on February 16, 2016 (81 FR 7838). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that 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.

7.0 REFERENCES

1. Browning, J. G., Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Application to Revise Technical Specifications to Adopt TSTF-426, 'Revise or Add Actions to Preclude Entry Into LCO 3.0.3 – RITSTF Initiatives 6b & 6c,' Using the Consolidated Line Item Improvement Process, Arkansas Nuclear One, Unit 2, Docket No. 50-368, License No. NPF-6," dated December 22, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15356A657).

2. Technical Specifications Task Force, letter to U.S. Nuclear Regulatory Commission, "Transmittal of TSTF-426, Revision 5, 'Revise or Add Actions to Preclude Entry into LCO 3.0.3 – RITSTF Initiatives 6b & 6c,'" dated November 22, 2011 (ADAMS Accession No. ML113260461).

3. Arey, Jr., M. L., PWR Owners Group, letter to U.S. Nuclear Regulatory Commission, "PWR Owners Group Submittal of WCAP-16125-NP-A, Revision 2, 'Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown,' August 2010 (PA-LSC-0354)," dated January 5, 2011 (ADAMS Package Accession No. ML110070498).

4. U.S. Nuclear Regulatory Commission, "Standard Technical Specifications – Combustion Engineering Plants," NUREG-1432, Revision 4, Volume 1, Specifications, April 2012 (ADAMS Accession No. ML12102A165).

5. U.S. Nuclear Regulatory Commission, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," Regulatory Guide 1.174, Revision 2, May 2011 (ADAMS Accession No. ML100910006).

6. U.S. Nuclear Regulatory Commission, Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition," NUREG-0800, Section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance," June 2007 (ADAMS Accession No. ML071700658).

7. Blount, T. B., U.S. Nuclear Regulatory Commission, letter to Anthony Nowinowski, Westinghouse Electric Company, "Final Safety Evaluation for Pressurized Water Reactor Owners Group Topical Report WCAP-16125-NP, Revision 2, 'Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading

to Exigent Plant Shutdown' (TAC No. MD8138)," dated May 24, 2010 (ADAMS Package Accession No. ML093560466).

8. U.S. Nuclear Regulatory Commission, "Rates of Initiating Events at U. S. Nuclear Power Plants: 1987 – 1995," NUREG/CR-5750, February 1999 (ADAMS Accession No. ML070580080).

9. U.S. Nuclear Regulatory Commission, "Risk Assessment of Severe Accident-Induced Steam Generator Tube Rupture," NUREG/CR-1570, March 1998 (ADAMS Accession No. ML070570094).

10. U.S. Nuclear Regulatory Commission, "Resolution of the Direct Containment Heating Issue for all Westinghouse Plants with Large Dry Containments or Subatmospheric Containments," NUREG/CR-6338, February 1996 (ADAMS Accession No. ML081920672).

11. Technical Specifications Task Force, letters to U.S. Nuclear Regulatory Commission, "TSTF-448-A, Revision 3, 'Control Room Habitability,'" dated August 8, 2006, and "Corrected Pages for TSTF-448, Revision 3, 'Control Room Habitability,'" dated December 29, 2006 (ADAMS Accession Nos. ML062210095 and ML063630467, respectively).

12. Buschbaum, D., PWR Owners Group, letter to U.S. Nuclear Regulatory Commission, "Pressurized Water Reactor Owners Group Responses to the NRC Request #2 for Additional Information (RAI) on Topical Report (TR) WCAP-16125-NP, Revision 1, 'Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown' (PA-LSC-0364, Revision 2)," dated July 8, 2009 (ADAMS Accession No. ML091940063).

13. Wang, A. B., U.S. Nuclear Regulatory Commission, letter to Entergy Operations, Inc., "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)" (ADAMS Accession No. ML082520574).

Principal Contributor: C. Tilton, NRR

Date: December 29, 2016

December 29, 2016

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: REVISE TECHNICAL SPECIFICATIONS TO ADOPT TSTF-426, REVISION 5, "REVISE OR ADD ACTIONS TO PRECLUDE ENTRY INTO LCO 3.0.3 – RITSTF INITIATIVES 6b & 6c" (CAC NO. MF7213)

Dear Sir or Madam:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 304 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 December 22, 2015.

The amendment revises the TSs to provide a short Allowed Outage Time to restore an inoperable system for conditions under which the existing ANO-2 TSs require a plant shutdown. The amendment is consistent with NRC-approved TS Task Force (TSTF) traveler TSTF-426, Revision 5, "Revise or Add Actions to Preclude Entry into LCO [Limiting Condition for Operation] 3.0.3 – RITSTF [Risk-Informed TSTF] Initiatives 6b & 6c."

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

Sincerely,

/RA/

Thomas J. Wengert, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-368

Enclosures:
1. Amendment No. 304 to NPF-6
2. Safety Evaluation

cc w/encls: Distribution via Listserv

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CTilton, NRR

ADAMS Accession No. ML16267A139 ***memorandum dated**

OFFICE	NRR/DORL/LPL4/PM	NRR/DORL/LPL4/LA	NRR/DSS/STSB/BC*
NAME	TWengert	PBlechman	AKlein
DATE	12/13/16	10/7/16	8/3/16
OFFICE	OGC	NRR/DORL/LPL4/BC	NRR/DORL/LPL4/PM
NAME	VHoang	RPascarelli ***JKlos for***	TWengert
DATE	12/22/16	12/28/16	12/29/16

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