



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

September 7, 2012

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

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT 2 - NON-ACCEPTANCE OF REQUEST TO ADOPT NFPA 805, "PERFORMANCE-BASED STANDARD FOR FIRE PROTECTION FOR LIGHT-WATER REACTOR ELECTRIC GENERATING PLANTS," 2001 EDITION (TAC NO. ME8282)

Dear Sir or Madam:

By letter dated March 27, 2012, as supplemented by letter dated July 10, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML12087A113 and ML12192A638, respectively), Entergy Operations, Inc. (the licensee), submitted a license amendment request (LAR) for Arkansas Nuclear One, Unit 2 (ANO-2). The proposed amendment requested the review and approval for adoption of a new fire protection licensing basis which complies with the requirements in paragraph 50.48(a) of Title 10 of the *Code of Federal Regulations* (10 CFR), 10 CFR 50.48(c), and the guidance in U.S. Nuclear Regulatory Commission (NRC) Regulatory Guide 1.205, Revision 1, "Risk-informed, Performance-based Fire Protection for Existing Light-Water Nuclear Power Plants," December 2009 (ADAMS Accession No. ML092730314).

The purpose of this letter is to provide the results of the NRC staff's acceptance review of this amendment request. The acceptance review was performed to determine if there is sufficient technical information in scope and depth to allow the NRC staff to complete its detailed technical review. The acceptance review is also intended to identify whether the application has any readily apparent information insufficiencies in its characterization of the regulatory requirements or the licensing basis of the plant.

Consistent with 10 CFR 50.90, an amendment to the license (including the technical specifications) must fully describe the changes requested, and following as far as applicable, the form prescribed for original applications. Section 50.34 of 10 CFR addresses the content of technical information required. This section stipulates that the submittal address the design and operating characteristics, unusual or novel design features, and principal safety considerations.

Your July 10, 2012, letter provided supplemental information as requested by the NRC's May 25, 2012, letter, "Supplemental Information Needed for Acceptance of Requested Licensing Action Re: License Amendment Request to Adopt National Fire Protection Association Standard 805." Based on previous discussions, the staff believed you had a thorough understanding of the additional material required for an acceptable supplement submittal. However, your supplement did not contain all the information needed and the NRC staff, therefore, concludes that the request for approval of the proposed action is unacceptable

for review pursuant to 10 CFR 2.101. The enclosure to this letter is a detailed technical discussion of the inadequacies of your supplement.

You also submitted a letter dated August 14, 2012 (ADAMS Accession No. ML12236A407), in which you requested an extension of enforcement discretion until July 15, 2013, and referenced SECY-12-0031, "Enforcement Alternatives for Sites That Indicate Additional Time Required to Submit Their License Amendment Requests to Transition to 10 CFR 50.48(c) National Fire Protection Association Standard 805." Your request for an extension was based on Scenario A, for which you supplied justification and a willingness to agree to a Confirmatory Order. However, in accordance with SECY-12-0031, Scenario A is for the following situation: "A licensee that informs the staff *before* the scheduled submittal date that it will not be able to submit its LAR on time" (emphasis added). In our May 25, 2012, letter, the NRC staff stated that an extension request should be sent to the NRC "As soon as possible and prior to July 11, 2012...." Since your letter was dated after the last supplemental submittal date of July 11, 2012, for the ANO-2 LAR, an extension of the existing enforcement discretion is not consistent with Section 9.1 of the Enforcement Policy, "Enforcement Discretion for Certain Fire Protection Issues," and SECY-12-003 and, thus, an extension will not be possible.

The NRC staff also noted in its letter dated May 25, 2012, that if the supplemental information for the LAR was not adequate, the application will not be accepted and ANO-2 will lose enforcement discretion. Therefore, with the non-acceptance of the LAR as described by this letter, ANO-2 has lost enforcement discretion for certain fire protection issues described by the Enforcement Policy and SECY-12-0031. However, in accordance with Section 9.1 of the Enforcement Policy, a licensee with appropriate justification and NRC approval may regain enforcement discretion once an acceptable LAR is submitted. SECY-12-0031 also states, in part, that:

The staff would shift to conducting focused triennial fire protection inspections annually. The NRC would conduct these inspections and take enforcement action on newly identified and previously identified fire protection noncompliances entered into the site's corrective action program that are greater than green and for which no corrective actions have been taken. These findings will be entered into the ROP [Reactor Oversight Process] Action Matrix.

In light of the previous enforcement discretion, and consistent with the existing Enforcement Policy, the staff will not take enforcement action for noncompliances that have been corrected or on a case-by-case basis, would consider refraining from taking action if reasonable and timely corrective actions are in progress. For noncompliances determined to be of minimal risk (minor or green), the staff would follow the established enforcement and ROP guidance and would not take enforcement action on these noncompliances.

The next ANO Triennial Fire Protection Inspection has been scheduled for June 2013. In addition, a focused fire protection inspection will be scheduled during the first quarter of calendar year 2013 to determine whether reasonable and timely corrective actions are in progress for the existing noncompliances for which enforcement discretion was previously granted for ANO-2.

If you have any questions, please contact me at (301) 415-1480 or via e-mail at [kaly.kalyanam@nrc.gov](mailto:kaly.kalyanam@nrc.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Kaly Kalyanam", with a horizontal line under the last name.

N. Kaly Kalyanam, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-368

Enclosure:  
As stated

cc w/encl: Distribution via Listserv

NON-ACCEPTANCE OF LICENSE AMENDMENT REQUEST TO ADOPT

NFPA 805, "PERFORMANCE-BASED STANDARD FOR

FIRE PROTECTION FOR LIGHT-WATER REACTOR

ELECTRIC GENERATING PLANTS," 2001 EDITION

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT 2

DOCKET NO. 50-368

By letter dated March 27, 2012, as supplemented by letter dated July 10, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML12087A113 and ML12192A638, respectively), Entergy Operations, Inc. (the licensee), submitted a license amendment request (LAR) for Arkansas Nuclear One, Unit 2 (ANO-2). The proposed amendment requested the review and approval for adoption of a new fire protection licensing basis which complies with the requirements in paragraph 50.48(a) of Title 10 of the *Code of Federal Regulations* (10 CFR), 10 CFR 50.48(c), and the guidance in U.S. Nuclear Regulatory Commission (NRC) Regulatory Guide 1.205, Revision 1, "Risk-informed, Performance-based Fire Protection for Existing Light-Water Nuclear Power Plants," December 2009 (ADAMS Accession No. ML092730314).

The LAR and supplement are not acceptable for review because they 1) contain insufficient information supporting a new method estimating the change in risk associated with transition (transition risk), 2) regulatory guidance was not followed because sensitivity studies were not provided on the new method to estimate the transition risk and not completed on the other new method related to the values assigned to non-suppression probabilities, and 3) the results of replacing the new methods with acceptable methods could precipitate further changes in the plant or the fire probabilistic risk analysis (PRA). The NRC staff guidance in LIC-109, "Acceptance Review Procedures," clarifies the use of new (i.e., unapproved) methods may be acceptable if the licensee or applicant has provided a full analysis to justify that the proposed use satisfies NRC regulations and is appropriately conservative. The NRC has established the position that a full analysis of new methods in a fire PRA includes a sensitivity study comparing the results using the new method with an acceptable method.

In accordance with National Fire Protection Association (NFPA) 805, "Performance-Based Standard for Fire Protection for Light-Water Reactor Electric Generating Plants," 2001 Edition (Standard), a risk-informed performance-based LAR must determine the change in plant risk resulting from use of the requested performance-based approach. The Standard, incorporated into 10 CFR 50.48(c) by reference, requires that the risk assessment approach, methods, and data be acceptable to the Authority Having Jurisdiction (AHJ), be appropriate for the nature and scope of the change being evaluated, be based on the as-built and as-operated and maintained plant, and reflect the operating experience at the plant (the NRC is deemed the AHJ). The expectation for performing the fire risk evaluation is to identify conditions that deviate from the

Enclosure

deterministic requirements (designated as Variances from the Deterministic Requirements or VFDRs); present those VFDRs on a fire-area basis in the Fire Risk Evaluation and in the LAR; and indicate how each VFDR has been addressed either through plant modifications or an estimate of the risk increase associated with accepting the VFDR as part of the post-transition licensing basis. For the alternative shutdown area at ANO-2, Fire Area G (Area G), the LAR did not provide this information.

Instead of identifying the VFDRs in Area G, the LAR provided one global VFDR stating that the plant does not have a "primary control station" and that all actions taken outside the main control room must be treated as recovery actions. A rather large risk decrease was reported for Area G in the LAR. The supplement also failed to identify the VFDRs but did provide additional information about your method to estimate the transition risk associated in Area G. The failure to catalog all VFDRs for Area G does not allow the NRC staff to fully understand the impact of fires in Area G VFDRs on the ability to achieve and maintain all the nuclear safety performance criteria.

Transition risk is estimated as the post-transition risk minus the deterministically compliant (baseline) risk. Post-transition risk is the risk after including the effects of VFDRs that will be accepted, and baseline risk would be the risk if all accepted VFDRs were brought into compliance with the deterministic regulation. As described in your supplement, the calculation of baseline risk for the main control room and cable spreading room is not based on bringing accepted VFDRs into compliance. Instead, the LAR supplement explains that the baseline risk is estimated by assuming a minimally compliant success path defined as one emergency feed water train to one steam generator and an intact primary coolant system. This approach overestimates the baseline risk because it does not credit the *in-situ* equipment and procedures that would be available after the current configuration has been brought into compliance by removal of the VFDRs. The supplement further clarifies that the post transition risk only assumes that fire affected equipment fails and is, therefore, a realistic estimate of the post-transition risk. Subtracting an overestimated baseline risk from a realistic post-transition risk yields a transition risk that is smaller than warranted and may incorrectly result in a negative transition risk. The NRC staff has not identified this method in any previous method descriptions. This new method was not identified in the LAR and no sensitivity study was provided comparing the results using this method with results using a previously accepted method.

Additionally, the LAR used non-suppression probabilities different from those that the NRC has accepted. The supplement did not provide the results of the sensitivity study using accepted non-suppression probabilities instead of values proposed in the LAR. Instead, you provided a commitment to submit the results of scenario evaluations and the results of a focused scope peer review of fire modeling by November 2, 2012.

Because of the deficiencies described above and the remaining evaluations that need to be prepared by the licensee, the NRC staff concludes that the request for approval of the proposed action is incomplete and, thus, unacceptable for NRC review pursuant to 10 CFR 2.101.

The next ANO Triennial Fire Protection Inspection has been scheduled for June 2013. In addition, a focused fire protection inspection will be scheduled during the first quarter of calendar year 2013 to determine whether reasonable and timely corrective actions are in progress for the existing noncompliances for which enforcement discretion was previously granted for ANO-2.

If you have any questions, please contact me at (301) 415-1480 or via e-mail at [kaly.kalyanam@nrc.gov](mailto:kaly.kalyanam@nrc.gov).

Sincerely,

*/RA/*

N. Kaly Kalyanam, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-368

Enclosure:  
As stated

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**ADAMS Accession No.: ML12208A196**

\*via email

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