

October 6, 2005

Mr. Jeffrey S. Forbes
Site Vice President
Arkansas Nuclear One
Entergy Operations, Inc.
1448 S. R. 333
Russellville, AR 72801

SUBJECT: ARKANSAS NUCLEAR ONE, UNITS 1 AND 2 - APPROVAL OF PROPOSED
UPGRADED EMERGENCY ACTION LEVELS (TAC NOS. MC2244 AND
MC2245)

Dear Mr. Forbes:

By letter dated February 27, 2004, as supplemented by letters dated December 16, 2004, and May 31 and June 14, 2005, Entergy Operations, Inc., requested Nuclear Regulatory Commission (NRC) staff review and approval of the Upgraded Emergency Action Levels (EALs) as required by Title 10 of the *Code of Federal Regulations*, Part 50 (10 CFR Part 50), Section IV.B of Appendix E.

These new EALs were written using the methodology outlined in Nuclear Energy Institute (NEI) NEI-99-01, "Methodology for Development of Emergency Action Levels" (Revision 4, January 2003). NEI-99-01 has been endorsed by the NRC staff in Regulatory Guide 1.101, Revision 4, "Emergency Planning and Preparedness for Nuclear Power Reactors," dated July 2003, and in Regulatory Issue Summary 2003-18, "Use of NEI 99-01," dated October 8, 2003.

The NRC staff has reviewed the new EALs, as documented in the enclosed Safety Evaluation. The NRC staff finds that the new EALs will continue to satisfy the criteria of Appendix E to 10 CFR Part 50 and are, therefore, acceptable.

Sincerely,

/RA/

David Terao, Chief, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-313 and 50-368

Enclosure: Safety Evaluation

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO PROPOSED UPGRADED EMERGENCY ACTION LEVELS BASED ON
REVISION 4 TO NUCLEAR ENERGY INSTITUTE (NEI) 99-01, "METHODOLOGY FOR
DEVELOPMENT OF EMERGENCY ACTION LEVELS"
ENTERGY OPERATIONS, INC.
ARKANSAS NUCLEAR ONE, UNIT NOS. 1 AND 2
DOCKET NOS. 50-313 AND 50-368

1.0 INTRODUCTION

By letter dated February 27, 2004 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML040630161), Entergy Operations, Inc. (Entergy or the licensee), requested changes to the emergency action levels (EALs) for Arkansas Nuclear One (ANO), Units 1 and 2 (ANO-1 and ANO-2, respectively). Based on a request for additional information (RAI) from the Nuclear Regulatory Commission (NRC or staff), the licensee provided a complete revision to its proposed EAL scheme by letter dated December 16, 2004 (ADAMS Accession No. ML043560265). This was further supplemented and clarified by letters dated May 31, 2005 (ADAMS Accession No. ML051530408) and June 14, 2005 (ADAMS Accession No. ML051730483) in response to additional RAIs from the staff.

The proposed changes revise the EALs for ANO-1 and ANO-2, using the guidance provided in Nuclear Energy Institute (NEI) NEI 99-01, Revision 4, "Methodology for Development of Emergency Action Levels," which was endorsed by the NRC in Regulatory Guide (RG) 1.101, Revision 4, "Emergency Planning and Preparedness for Nuclear Power Reactors," dated July 2003. The licensee's existing EALs were based on the methodology described in Appendix 1 to NUREG-0654/Federal Emergency Management Agency (FEMA)-REP-1, "Criteria for Preparedness and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (November 1980)," and the NRC's Order for Interim Safeguards and Security Compensatory Measures dated February 25, 2002 (ADAMS Accession No. ML020490069).

The proposed changes would revise the licensee's emergency plan.

2.0 REGULATORY EVALUATION

The applicable regulations and guidance that the NRC staff used to review the licensee's submission, are discussed in the following sections.

2.1 Regulations

Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR Part 50), Section 50.47, "Emergency plans," states that no operating license for a nuclear power reactor will be issued unless a finding is made by the NRC that the state of onsite and offsite emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Section 50.47 also establishes standards that must be met by the onsite and offsite emergency response plans for the NRC staff to make a positive finding that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Paragraph 50.47(b)(4) stipulates that emergency plans include a standard emergency classification and action level scheme.

Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," to 10 CFR Part 50, Section IV.B, "Assessment Actions," provides that emergency plans are to include EALs, which are to be used as criteria for determining the need for notification and participation of local and State agencies and which are to be used for determining when and what type of protective measures should be considered, both onsite and offsite, to protect health and safety. EALs are to be based on in-plant conditions and instrumentation, and on onsite and offsite monitoring. Section IV.B also provides that initial EALs shall be discussed and agreed on by the applicant and State and local authorities, be approved by the NRC, and reviewed annually thereafter with State and local authorities. In addition, Section IV.B states that an EAL revision must be approved by the NRC before implementation if: (1) the licensee is changing from one EAL scheme to another EAL scheme (e.g., a change from an EAL scheme based on NUREG-0654 to a scheme based upon Nuclear Utilities Management Council (NUMARC) document, entitled NESP-007, "Methodology for Development of Emergency Action Levels" (Revision 2, January 1992) or NEI-99-01); (2) the licensee is proposing an alternate method for complying with the regulations; or (3) the EAL revision decreases the effectiveness of the emergency plan.

2.2 Guidance

As stated in Section 1.0 of this safety evaluation, as pertaining to EALs required by 10 CFR Part 50, Appendix E, Section IV.B and 10 CFR 50.47(b)(4), NRC RG 1.101, Revision 4, endorsed the guidance provided in NEI 99-01, Revision 4, as acceptable alternative methods to those described in the following documents:

- Appendix 1 to NUREG-0654/FEMA-REP-1, and
- NUMARC/NESP-007, Revision 2

Regulatory Issue Summary (RIS) 2003-18, "Use of NEI 99-01, Methodology for Development of Emergency Action Levels," dated October 8, 2003, provides guidance for developing or changing a standard emergency classification and action level scheme. In addition, this RIS provided recommendations to assist licensees, consistent with 10 CFR Part 50, Appendix E, Section IV.B, in determining whether to seek prior NRC approval for deviations from the new guidance.

Supplement 1 to RIS 2003-18, dated July 13, 2004, was subsequently issued to clarify various technical positions regarding the revision of EALs.

3.0 TECHNICAL EVALUATION

3.1 Scope

The proposed revision to the ANO EALs involves a scheme conversion from Appendix 1 of NUREG-0654/FEMA-REP-1 to that of NEI 99-01, Revision 4. Therefore, the proposed changes were submitted by the licensee to the NRC for approval prior to implementation, as required by Section IV.B of Appendix E to 10 CFR Part 50. The NRC staff's evaluation of the proposed revisions to initiating conditions (ICs) and EAL threshold values is based on the licensee's letters dated December 16, 2004, May 31, 2005, and June 14, 2005. The staff's review did not consider ICs and EAL threshold values proposed in the original February 27, 2004, letter, since the revisions in the December 16, 2004, letter provided a complete revision to the licensee's initial application.

The licensee's letter dated December 16, 2004, contained the following attachments, which were reviewed as part of the staff's evaluation of proposed changes:

- Attachment 1, Response to NRC RAIs
- Attachment 2, Proposed Emergency Plan Pages – changes incorporated
- Attachment 3, Proposed EALs – to be incorporated in procedure
- Attachment 4, Proposed EAL Bases – to be incorporated in procedure
- Attachment 5, ANO Deviations and Differences from NEI 99-01, Revision 4, EALs
- Attachment 6, Cross Reference Matrix From NEI EAL Number to Entergy EAL Number

ICs entitled, "Defueled Station Malfunctions," and listed under Category D in NEI 99-01, Revision 4, are not applicable since ANO Units 1 and 2 have a current operating license, and therefore, were not considered during this technical evaluation.

Proposed deviations or differences from the guidance in NEI 99-01, Revision 4, other than minor differences, such as station-specific terminology, system and component names, or formatting, were identified in Attachment 5 of the licensee's letter dated December 16, 2004, which provided a specific evaluation for each.

A complete revised version of the EAL Bases document is provided in Attachment 2 of the licensee's letter dated June 14, 2005. This EAL Bases document reflects the changes made to the EAL Matrix, ICs, and associated EAL threshold values, and Bases discussions reflected in its May 31 and June 14, 2005, responses to the NRC staff's RAIs.

3.2 Approval by State and Local Authorities

As stated in Section 2.1, Section IV.B of Appendix E to 10 CFR Part 50 states that initial EALs shall be discussed and agreed on by the applicant and State and local authorities, be approved by the NRC, and reviewed annually thereafter with State and local authorities.

In Attachment 1 to its letter dated December 16, 2004, the licensee provided documentation signifying agreement on implementation of the proposed EAL changes by the following offsite agencies:

- Pope County
- Yell County
- Logan County
- Johnson County
- Conway County
- Arkansas Department of Health, Radiation Control and Emergency Management

3.3 Evaluation

Based on review of the information provided in the licensee's letters dated December 16, 2004, and May 31 and June 14, 2005, the NRC staff finds that the proposed changes to ICs, EAL threshold values, and Bases document are consistent with the guidance in NEI 99-01, Revision 4, or provide an acceptable alternative. Hence, the proposed changes to the ANO EALs for Units 1 and 2, as reflected in Attachment 2 of the licensee's letter dated June 14, 2005, are acceptable.

Changes to the ANO security EALs for Units 1 and 2, based on the guidance provided in Attachment 1 to NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events," dated July 18, 2005, were not evaluated as part of this review. The licensee intends to implement these changes to its security EALs under 10 CFR 50.54(q), which is acceptable under the guidance provided in Bulletin 2005-02.

4.0 CONCLUSION

The NRC staff has performed a review of the proposed changes to the ANO EALs and Bases document, as submitted by letters dated December 16, 2004, and May 31 and June 14, 2005, using the guidance in NEI 99-01, Revision 4. The NRC staff finds that the proposed ANO EALs for Units 1 and 2, provided in Attachment 2 of the licensee's letter dated June 14, 2005, are consistent with the guidance in NEI 99-01, Revision 4, or provide an acceptable alternative as discussed in Section 3.0 above.

The NRC staff also finds that the proposed EAL changes meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50, Section IV.B. Therefore, the NRC staff, based on the above discussion, concludes 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 approval of the proposed emergency plan changes will not be inimical to the common defense and security or to the health and safety of the public.

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Date: October 6, 2005

Arkansas Nuclear One

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September 2005