

April 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, UNIT 2 - ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT RELATED TO EXEMPTION FROM CERTAIN REQUIREMENTS OF 10 CFR PART 50, APPENDIX A (TAC NO. MC1228)

Dear Mr. Forbes:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for an exemption dated October 30, 2003, as supplemented by letters dated July 1, November 15, and December 3, 2004, and March 3, 2005. The application requested an exemption from the requirements of General Design Criterion (GDC) 57 of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix A, "General Design Criteria For Nuclear Power Plants." The proposed exemption would allow for plant operation at power with the applicable manual upstream containment isolation valves associated with the emergency feedwater system steam trap and the atmospheric dump valve drain steam trap (i.e., one applicable valve per steam trap) in the open position. This assessment only pertains to Unit 2 because the NRC determined that an exemption is not needed for Unit 1.

The assessment is being forwarded to the Office of the Federal Register for publication.

Sincerely,

*/RA/*

Thomas W. Alexion, Project Manager, Section 1  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-368

Enclosure: Environmental Assessment

cc w/encl: See next page

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 Environmental Assessment  
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Thomas W. Alexion, Project Manager, Section 1  
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 Division of Licensing Project Management  
 Office of Nuclear Reactor Regulation

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UNITED STATES NUCLEAR REGULATORY COMMISSION

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-368

ARKANSAS NUCLEAR ONE, UNIT 2

ENVIRONMENTAL ASSESSMENT AND FINDING OF

NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of an exemption from Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix A, "General Design Criteria For Nuclear Power Plants," General Design Criteria (GDC) 57, "Closed system isolation valves," for Facility Operating License No. NPF-6, issued to Entergy Operations, Inc. (the licensee), for operation of the Arkansas Nuclear One, Unit 2 (ANO-2), located in Pope County, Arkansas. Therefore, as required by 10 CFR 51.21, the NRC is issuing this environmental assessment and finding of no significant impact.

ENVIRONMENTAL ASSESSMENT

Identification of the Proposed Action:

The proposed action would provide an exemption from the requirements of 10 CFR Part 50, Appendix A, GDC 57, which requires that certain lines that penetrate containment have at least one containment isolation valve (CIV) which shall either be automatic, locked closed, or capable of remote manual operation. The licensee requests an exemption in order to operate at power with certain valves in the open position. Specifically, the proposed exemption would allow ANO-2 to operate at power with the applicable manual upstream CIVs associated with the emergency feedwater (EFW) steam trap and the atmospheric dump valve (ADV) drain steam trap (i.e., one applicable CIV per steam trap) in the open position.

The proposed action is in accordance with the licensee's application dated October 30, 2003, as supplemented by letters dated July 1, November 15, and December 3, 2004, and March 3, 2005.

The Need for the Proposed Action:

The proposed action is needed to ensure the operability of the steam-driven EFW pump and to prevent inoperability due to condensate buildup, and to ensure that waterhammer does not damage the piping associated with the ADV due to condensate buildup.

GDC 57 states, "Each line that penetrates primary reactor containment and is neither part of the reactor coolant pressure boundary nor connected directly to the containment atmosphere shall have at least one containment isolation valve which shall be either automatic, or locked closed, or capable of remote manual operation. This valve shall be outside containment and located as close to the containment as practical. A simple check valve may not be used as the automatic isolation valve." However, in the case of ANO-2, operating with the EFW steam trap upstream CIV closed and the ADV drain steam trap upstream CIV closed, could pose a potential challenge to the operability of the steam-driven EFW pump and could damage the piping associated with the ADV, due to condensate buildup.

Operating with the EFW steam trap and ADV drain steam trap upstream CIVs open results in having only the secondary system pressure boundary inside containment as a barrier against the release of radioactivity to the environment through the steam trap piping. However, operating with the EFW steam trap upstream CIV closed and the ADV drain steam trap upstream CIV closed could compromise the operability of the EFW pump turbine and could damage the ADV piping, due to condensate buildup. The licensee has evaluated the effects of the EFW steam trap and ADV drain steam trap upstream CIVs being open during power operation, and has shown this to have no impact on the consequences of any of the events

evaluated in the Safety Analysis Report (SAR). Therefore, the licensee is requesting an exemption from the requirements of GDC 57 to keep these valves open during operation.

Environmental Impacts of the Proposed Action:

The NRC has completed its safety evaluation of the proposed action and concludes that, in this case, it is not necessary for the subject CIVs to be locked closed, automatic, or capable of remote manual operation, as required in GDC 57, in order to achieve the underlying purpose of GDC 57. The effects of these valves being open during power operation has been evaluated and shown to have no impact on the consequence of any of the postulated events that are evaluated in the SAR. Thus, the NRC staff finds that the operation of ANO-2 with the subject CIVs open is acceptable, and that the requested exemption from GDC 57 is justified for ANO-2.

The details of the staff's safety evaluation will be provided in the exemption that will be issued as part of the letter to the licensee approving the exemption to the regulation.

The proposed action will not significantly increase the probability or consequences of accidents. No changes are being made in the types of effluents that may be released off site. There is no significant increase in the amount of any effluent released off site. There is no significant increase in occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed action.

With regard to potential non-radiological impacts, the proposed action does not have a potential to affect any historic sites. It does not affect non-radiological plant effluents and has no other environmental impact. Therefore, there are no significant non-radiological environmental impacts associated with the proposed action.

Accordingly, the NRC concludes that there are no significant environmental impacts associated with the proposed action.

Environmental Impacts of the Alternatives to the Proposed Action:

As an alternative to the proposed action, the staff considered denial of the proposed action (i.e., the “no-action” alternative). Denial of the application would result in no change in current environmental impacts. Installing remote manual operators on the CIVs was considered as an alternative to bring the CIVs into compliance with GDC 57. However, the staff believes that any potential safety benefit derived from installing remote manual operators on the subject CIVs would not be commensurate with the cost associated with such a modification. The environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources:

The action does not involve the use of any different resources than those previously considered in the Final Environmental Statement related to the operation of Arkansas Nuclear One, Unit 2, NUREG-0254, dated June 1977.

Agencies and Persons Consulted:

In accordance with its stated policy, on January 13, 2005, the staff consulted with the Arkansas State official, Dave Baldwin of the Arkansas Department of Health, regarding the environmental impact of the proposed action. The State official had no comments.

FINDING OF NO SIGNIFICANT IMPACT

On the basis of the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee’s letter dated October 30, 2003, as supplemented by letters dated July 1, November 15, and December 3, 2004, and March 3, 2005. Documents may be examined, and/or copied for a fee, at the NRC’s Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike (first

floor), Rockville, Maryland. Publicly available records will be accessible electronically from the Agencywide Documents Access and Management System (ADAMS) Public Electronic Reading Room on the Internet at the NRC Web site, <http://www.nrc.gov/reading-rm/adams.html>.

Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC PDR Reference staff by telephone at 1-800-397-4209 or 301-415-4737, or send an e-mail to [pdr@nrc.gov](mailto:pdr@nrc.gov).

Dated at Rockville, Maryland, this 6<sup>th</sup> day of April 2005.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Thomas W. Alexion, Project Manager, Section 1  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Arkansas Nuclear One

cc:

Senior Vice President  
& Chief Operating Officer  
Entergy Operations, Inc.  
P. O. Box 31995  
Jackson, MS 39286-1995

Director, Division of Radiation  
Control and Emergency Management  
Arkansas Department of Health  
4815 West Markham Street, Slot 30  
Little Rock, AR 72205-3867

Winston & Strawn  
1400 L Street, N.W.  
Washington, DC 20005-3502

Mr. Mike Schoppman  
Framatome ANP  
3815 Old Forest Road  
Lynchburg, VA 24501

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
P. O. Box 310  
London, AR 72847

Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-8064

County Judge of Pope County  
Pope County Courthouse  
Russellville, AR 72801

Vice President, Operations Support  
Entergy Operations, Inc.  
P. O. Box 31995  
Jackson, MS 39286-1995

Wise, Carter, Child & Caraway  
P. O. Box 651  
Jackson, MS 39205

July 2004