NUCLEAR REGULATORY COMMISSION

[Docket No. 50–313]

Entergy Operations, Inc.; Arkansas Nuclear One, Unit 1; 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) 50.46 and 10 CFR part 50, Appendix K for Renewed Facility Operating License No. DPR–51, issued to Entergy Operations, Inc. (licensee), for operation of the Arkansas Nuclear One, Unit 1 (ANO–1), located in Pope County, Arkansas. Therefore, as required by 10 CFR 51.21, the NRC is issuing this environmental assessment and a finding of no significant impact.

Environmental Assessment

Identification of the Proposed Action: The proposed action would provide an exemption from the requirements of: (1) 10 CFR 50.46, ''Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors,'' which requires that the calculated emergency core cooling system (ECCS) performance for reactors with zircaloy or ZIRLO fuel cladding meet certain criteria, and (2) 10 CFR part 50, Appendix K, ''ECCS Evaluation Models,'' which presumes the use of zircaloy or ZIRLO fuel cladding when doing calculations for energy release, cladding oxidation, and hydrogen generation after a postulated loss-of-coolant accident.

The proposed action would allow the licensee to use the M5 advanced alloy in lieu of zircaloy or ZIRLO, the materials assumed to be used in the cited regulations, for fuel rod cladding in fuel assemblies at ANO–1.

The proposed action is in accordance with the licensee's application dated September 30, 2004. *The Need for the Proposed Action:* The Commission's regulations in 10 CFR 50.46 and 10 CFR part 50, Appendix K require the demonstration of adequate ECCS performance for light-water reactors that contain fuel consisting of uranium oxide pellets enclosed in zircaloy or ZIRLO tubes. Each of these regulations, either implicitly or explicitly, assumes that either zircaloy or ZIRLO is used as the fuel rod cladding material.

In order to accommodate the high fuel rod burnups that are required for modern fuel management and core designs, Framatome developed the M5 advanced fuel rod cladding material. M5 is an alloy comprised primarily of zirconium (~99 percent) and niobium (~1 percent) that has demonstrated superior corrosion resistance and reduced irradiation-induced growth relative to both standard and low-tin zircaloy. However, since the chemical composition of the M5 advanced alloy differs from the specifications of either zircaloy or ZIRLO, use of the M5 advanced alloy falls outside of the strict interpretation of these regulations. Therefore, approval of this exemption request is needed to permit the use of the M5 advanced alloy as a fuel rod cladding material at ANO–1.

Environmental Impacts of the Proposed Action: The NRC staff has completed its safety evaluation of the proposed action and concludes that use of M5 clad fuel will not result in changes in the operations or configuration of the facility. There will be no change in the level of controls or methodology used for processing radioactive effluents or handling solid radioactive waste. The NRC staff has also determined that the M5 fuel cladding will perform similarly to the current resident fuel.

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 regulations.

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. 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 other than those previously considered in the Final Environmental Statement related to the operation of ANO–1, dated February 1973, and the Final Supplemental Environmental Impact Statement regarding ANO–1 (NUREG–1437, Supplement 3), dated April 2001.

Agencies and Persons Consulted: In accordance with its stated policy, on May 26, 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 September 30, 2004. 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.*

Dated in Rockville, Maryland, this 22nd day of June 2005.

For the Nuclear Regulatory Commission.

Thomas W. Alexion,

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NUCLEAR REGULATORY COMMISSION

Application for a License To Export High-Enriched Uranium

Pursuant to 10 CFR 110.70(b)(2) ''Public notice of receipt of an