March 13, 2003

Mr. William R. Kanda
Vice President - Nuclear, Perry
FirstEnergy Nuclear Operating Company
Perry Nuclear Power Plant
P.O. Box 97, A200
10 Center Road
Perry, OH 44081

SUBJECT: PERRY NUCLEAR POWER PLANT (TAC NO. MB6061)

Dear Mr. Kanda:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for exemption dated June 4, 2002. The proposed exemption would use an alternative methodology to determine the new Pressure/Temperature (P-T) limit curves as endorsed by the American Society of Mechanical Engineers (ASME), but which has not yet received formal approval for generic application by the Nuclear Regulatory Commission. The alternative methodology uses the ASME Boiler and Pressure Vessel Code Case N-640, "Alternative Reference Fracture Toughness for Development of P-T Limit Curves Section XI, Division 1."

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

Sincerely,

/RA/

Stephen P. Sands, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-440

Enclosure: Environmental Assessment

cc w/encl: See next page

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*See previous concurrence

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OFFICIAL RECORD COPY

Perry Nuclear Power Plant, Unit 1

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UNITED STATES NUCLEAR REGULATORY COMMISSION

FIRSTENERGY CORPORATION

DOCKET NO. 50-440

PERRY NUCLEAR POWER PLANT

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, Section 50.60(b) for Facility Operating License No. 58, issued to FirstEnergy Corporation (the licensee), for operation of the Perry Nuclear Power Plant (PNPP), located in Lake County, Ohio. 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:

10 CFR 50.60 requires that pressure-temperature (P-T) limits be established for reactor pressure vessels during normal operating and hydrostatic or leak rate testing conditions in accordance with Appendices G and H to Part 50. Specifically, 10 CFR Part 50, Appendix G, states, “The appropriate requirements on both the pressure-temperature limits and the minimum permissible temperature must be met for all conditions.” Appendix G of 10 CFR Part 50 specifies that the requirements for these limits are the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code), Section XI, Appendix G Limits. The licensee requested in its submittal that the staff exempt PNPP from application of specific requirements of 10 CFR Part 50, Section 50.60(a) and Appendix G, and substitute use of ASME Code Case N-640. Code Case N-640 permits the use of an alternate reference

fracture toughness (K_{IC} fracture toughness curve instead of K_{Ia} fracture toughness curve) for reactor vessel materials in determining the P-T limits. Since the K_{IC} fracture toughness curve shown in ASME Section XI, Appendix A, Figure A-2200-1 (the K_{IC} fracture toughness curve) provides greater allowable fracture toughness than the corresponding K_{Ia} fracture toughness curve of ASME Section XI, Appendix G, Figure G-2210-1 (the K_{Ia} fracture toughness curve), using Code Case N-640 for establishing the P-T limits would be less conservative than the methodology currently endorsed by 10 CFR Part 50, Appendix G. Therefore, an exemption from 10 CFR 50.60 would also be required. It should be noted that, although Code Case N-640 was incorporated into the ASME Code recently, an exemption is still needed because the P-T limits required by 10 CFR 50.60 are based on the 1989 edition of the ASME Code.

The new P-T limits calculated by the methodologies that are subject to the exemptions are incorporated into the PNPP Technical Specifications by an associated proposed license amendment submitted by the licensee. The proposed action is in accordance with the licensee's application for exemption and amendment dated June 4, 2002.

The Need for the Proposed Action:

The revised P-T limits are desired to allow required reactor vessel hydrostatic and leak tests to be performed at a significantly lower temperature. These tests are to be performed during the upcoming refueling outage scheduled to commence in April 2003. The lower temperature for the tests can reduce refueling outage critical path time by reducing or eliminating the heatup time to achieve required test conditions.

Environmental Impacts of the Proposed Action:

The Commission has evaluated the proposed action and concludes that the exemption and associated license amendment described above would provide an adequate margin of safety against brittle failure of the PNPP reactor vessel. Since the proposed changes do not

adversely affect the integrity of the reactor vessel, the function of the vessel to act as a radiological barrier during an accident is not affected.

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, and 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 than those previously considered in the Final Environmental Statement for the PNPP, dated April 1974.

Agencies and Persons Consulted:

On March 11, 2003, the staff consulted with the Illinois State official, Frank Niziolek of the Illinois Department of Nuclear Safety, 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 June 4, 2002. 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 by e-mail to pdr@nrc.gov.

Dated at Rockville, Maryland, this 13th day of March 2003.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Anthony J. Mendiola, Chief, Section 2
Project Directorate III-2
Division of Licensing Project Management
Office of Nuclear Reactor Regulation