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MEMORANDUM FOR: Raymond Fraley, Executive Director, ACRS

ED-440

FROM: Edward F. Goodwin, Technical Assistant
Technical Support Branch
Planning & Program Analysis Staff
Office of Nuclear Reactor Regulation

SUBJECT: REPORT ON PERRY NUCLEAR POWER PLANT, UNIT 1

In a letter dated July 13, 1982, the ACRS provided its comments and recommendations following its review of the applications for a license to operate Perry Nuclear Power Plant, Unit 1. This is to advise you that each of the recommendations is being considered by the staff and/or licensee and will be addressed in the staff's SER supplement scheduled to be issued in September 1982.

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Edward F. Goodwin, Technical Assistant
Office of Nuclear Reactor Regulation

Handwritten initials

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NRC FORM 232 (11-79)

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Incoming: Paul Shewmon, Chairman

From: ACRS

To: Palladino Date 7/13/82

Subject: ACRS report on the Perry Nuclear Power Plant

Unit 1

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NRC FORM 62A (3-82)

ACTION SLIP



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

July 13, 1982

Honorable Nunzio J. Palladino
Chairman
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Dr. Palladino:

SUBJECT: ACRS REPORT ON THE PERRY NUCLEAR POWER PLANT, UNIT 1

During its 267th meeting, July 8-10, 1982, the Advisory Committee on Reactor Safeguards reviewed the application of the Cleveland Electric Illuminating Company (Applicant), acting on behalf of itself and as agent for Duquesne Light Company, Ohio Edison Company, Pennsylvania Power Company, and the Toledo Edison Company, for a license to operate the Perry Nuclear Power Plant, Units 1 and 2. The plant is to be operated by the Cleveland Electric Illuminating Company. A tour of the facilities was made by members of the Subcommittee on the morning of June 28, 1982, and a Subcommittee meeting was held in Cleveland, Ohio on June 28 and 29, 1982 to consider the application. During its review the Committee had the benefit of discussion with representatives of the Applicant, the NRC Staff, and members of the public. The Committee also had the benefit of the documents listed. The Committee commented on the application for a permit to construct this plant in its reports dated December 12, 1974 and May 12, 1975.

The Perry Nuclear Power Plant is located in Lake County, Ohio near Lake Erie approximately 35 miles northeast of Cleveland, Ohio and 21 miles southwest of Ashtabula, Ohio. Units 1 and 2 use General Electric BWR-6 nuclear steam supply systems with a rated power of 3579 MWt and a Mark III pressure suppression containment system with a design pressure of 15 psig. Construction of Unit 1 is about 83% complete and Unit 2 is about 43% complete.

Because loading of fuel for Unit 2 is scheduled for May 1987, the Committee does not believe it appropriate to report at this time on the operation of Unit 2.

Our review included the management organization, technical support staff, status of operational staffing, and the training program. This is the first nuclear power plant to be operated by the Applicant. The plant staff has a minimum amount of boiling water reactor (BWR) nuclear background. We agree with the NRC Staff on the urgent need for additional personnel with BWR experience within the operating management. The Applicant should fill the position of Superintendent of Plant Operations in the near future. Experienced senior technical support personnel should be included in the staffing plans of the Applicant. This matter should be resolved in a manner satisfactory to the NRC Staff. We wish to be kept informed.

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July 13, 1982

As a result of adverse experience on the Perry project several years ago, the Applicant restructured its quality assurance procedures and its quality control and assurance organization. The revised organization has been reviewed and audited by the NRC Staff. We wish to receive a report from the NRC Staff which discusses design and construction problems, their disposition, and the overall effectiveness of the effort to assure appropriate quality.

The Applicant has committed several technical staff members to matters related to probabilistic analysis and studies of systems interactions. We believe that efforts of this sort by the operating utilities are to be encouraged.

The Mark III suppression pool dynamic loads have been identified as an Outstanding Issue in the NRC Staff's review. The NRC Staff has provided the Applicant with a proposal for the appropriate design basis loads, and it appears that the Perry design will be able to accommodate these loads. Additional concerns with the design of the Mark III containment have been recently brought to our attention. The NRC Staff is currently assessing these issues for impact on the Mark III design. We will continue to discuss with the NRC Staff, on a generic basis, Mark III suppression pool dynamic loads and other additional Mark III issues.

Hydrogen control systems for Mark III containments are being developed by the Mark III Owners Group. Efforts by this Owners Group are being directed toward the development of a hydrogen ignition system which makes use of distributed ignition sources. The NRC Staff has indicated that they will be able to meet with the Committee on this matter in the near future. We expect to review this system on a generic basis. Acceptability of this system is designated as a License Condition.

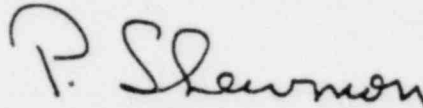
We recommend that the Applicant and the NRC Staff conduct studies to evaluate the margins available to accomplish safe shutdown, including long-term heat removal, following an earthquake of somewhat greater severity and lower likelihood than the safe shutdown earthquake. We believe it is important that there should be considerable assurance that the combination of seismic design basis and margins in the seismic design is such that this accident source represents an acceptably low contribution to the overall risk from this plant. We recommend that any needed modifications be made before the plant resumes operation following the second refueling. We wish to be kept informed on the progress and results of these studies.

July 13, 1982

During our review, the NRC Staff identified a number of other License Conditions, Confirmatory Matters, and Outstanding Issues which remain to be resolved. Except for the issue of turbine missiles, we are satisfied with the progress on these topics, and we believe that they should be resolved in a manner satisfactory to the NRC Staff. We wish to be kept informed concerning resolution of the turbine missile issue, and wish to receive a technical report which discusses and evaluates the problems involved.

If due consideration is given to the recommendations above, and subject to satisfactory completion of construction, staffing, and preoperational testing, the ACRS believes there is reasonable assurance that the Perry Nuclear Power Plant, Unit 1 can be operated at power levels up to 3579 MWt without undue risk to the health and safety of the public.

Sincerely,



P. Shewmon
Chairman

References

1. Cleveland Electric Illuminating Company, "Final Safety Analysis Report, Perry Nuclear Power Plant, Units 1 and 2," with Amendments 1-6
2. U. S. Nuclear Regulatory Commission, "Safety Evaluation Report, Perry Nuclear Power Plant, Units 1 and 2," USNRC Report NUREG-0887, dated May 1982
3. Memorandum from D. Houston/J. Kudrick, NRC, to A. Schwencer/W. Butler, NRC, Subject: Summary of May 13, 1982 telecon with John Humphrey - Concerns about Grand Gulf Mark III Containment, dated May 18, 1982
4. Letter from John M. Humphrey, Humphrey Engineering, Inc., to L. F. Dale, Mississippi Power and Light, Subject: BWR-6/Mark III Containment Design Issues, dated May 8, 1982