



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

November 6, 1984

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

Dear Dr. Palladino:

SUBJECT: ACRS REPORT ON THE LIMERICK GENERATING STATION

The Committee commented on the application for a permit to construct this Station in a report dated August 10, 1971, and on the application to operate this Station in an interim report dated October 18, 1983. During its 295th meeting, November 1-3, 1984, the Advisory Committee on Reactor Safeguards continued its review of the application of the Philadelphia Electric Company (Applicant) for a license to operate the Limerick Generating Station, Units 1 and 2. This phase of the review was continued during ACRS Subcommittee meetings held on October 9-10 and October 20, 1984. The Committee also had the benefit of the documents referenced. During its review, the Committee had the benefit of discussions with representatives of the Applicant and the NRC Staff as well as written and oral statements from members of the public.

The Committee stated in its October 18, 1983 interim report that, because of the uncertain schedule for Unit 2, it was not appropriate to report on Unit 2 at that time. Construction on Unit 2 has been stopped, but may be resumed after the start of operation of Unit 1. We do not believe it is appropriate for the Committee to report on Unit 2 at this time.

The Committee in its October 18, 1983 report stated that it had not completed its review and listed a number of matters yet to be considered. These matters have been discussed at subsequent Subcommittee and Committee meetings, and we conclude that they have been dealt with satisfactorily.

In response to a request from the NRC Staff, the Applicant submitted a probabilistic risk assessment (PRA) in March 1981. A supplement to this PRA report was submitted in April 1983 in the form of a severe accident risk assessment (SARA) report. The NRC Staff has reviewed this study and has used results from this study in the Environmental Statement for this Station. The Applicant has used insights from this PRA/SARA evaluation in the design of and in the development of operational procedures for the Limerick plant. The Applicant, in discussions with the Committee, demonstrated an understanding of the methodology and its uses and a commitment to its application in the operation of the Limerick plant. The Applicant is to be commended for this work.

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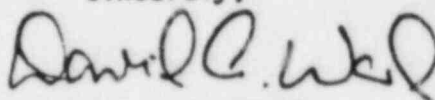
The Limerick PRA/SARA includes a seismic risk analysis which reflects the state-of-the-art which was used in the Zion and Indian Point PRAs. The results obtained by these methods are characterized by large uncertainties, and are the subject of disagreement in the scientific and engineering communities. We believe that the NRC and the industry should continue to work to develop methods which can be used to quantify seismic risk and to identify any seismic outliers which might exist.

The Committee has previously recommended that the Zion and Indian Point plants be reviewed for systems interactions that might lead to significant degradation of safety. The issue of systems interactions is currently being addressed under the USI A-17, "Systems Interactions in Nuclear Power Plants." Philadelphia Electric Company has already examined many of the possible systems interactions in the Limerick plant. However, in view of the demography of the site, we recommend that Limerick receive special attention in the NRC Staff's consideration of USI A-17.

We believe that, subject to the resolution of open items identified by the NRC Staff and subject to the satisfactory completion of construction, staffing, and preoperational testing, there is reasonable assurance that the Limerick Generating Station, Unit 1, can be operated at power levels up to 3293 Mwt without undue risk to the health and safety of the public.

Additional comments by ACRS Member David Okrent are presented below.

Sincerely,



David A. Ward  
Acting Chairman

Additional Comments by ACRS Member David Okrent

The matter of potential improvements in design either to prevent or to mitigate severe accidents received only limited attention by the NRC Staff during this review. Further studies are in progress which should be completed and evaluated in the next two or three years. At that time, the Limerick Generating Station should be reviewed for the possible desirability and appropriateness of such improvements.

References:

1. Philadelphia Electric Company, "Final Safety Analysis Report, Limerick Generating Station, Units 1 and 2," Revisions 21-36
2. U. S. Nuclear Regulatory Commission, "Safety Evaluation Report Related to the Operation of Limerick Generating Station, Units 1 and 2," Supplement No. 1, USNRC Report NUREG-0991, dated December 1983

3. BNL Report Prepared for U. S. Nuclear Regulatory Commission, "A Review of the Limerick Generating Station Severe Accident Risk Assessment" - Review of Core Melt Frequency, NUREG/CR-3493 and BNL-NUREG-51711, dated July 1984
4. BNL Report Prepared for U. S. Nuclear Regulatory Commission, "A Review of the Limerick Generating Station Probabilistic Risk Assessment," NUREG/CR-3028 and BNL-NUREG-51600, dated February 1983
5. U. S. Nuclear Regulatory Commission, "Review Insights on the Probabilistic Risk Assessment for the Limerick Generating Station," USNRC Report NUREG-1068, dated August 1984
6. Letter from A. Schwencer, NRC Division of Licensing, to Edward G. Bauer, Jr., Philadelphia Electric Company, Subject: Review of Limerick Severe Accident Risk Assessment, dated June 22, 1984, with attachment, BNL-33835, "Containment Failure Mode and Fission Product Release Analysis for the Limerick Generating Station: Base Case Assessment"
7. Letter from M. Lewis, Member of the Public, to R. Savio, Advisory Committee on Reactor Safeguards, regarding the ACRS review of the Limerick Generating Station, dated October 3, 1984