



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SUPPLEMENTAL SAFETY EVALUATION REPORT
BY THE OFFICE OF NUCLEAR REACTOR REGULATION
INDIANA MICHIGAN POWER COMPANY
DONALD C. COOK NUCLEAR PLANT UNIT NOS. 1 AND 2
DOCKET NOS. 50-315 AND 50-316
CONFORMANCE TO REGULATORY GUIDE 1.97

1.0 INTRODUCTION

Indiana Michigan Power Company was requested by Generic Letter 82-33 to provide a report to NRC describing how the post-accident monitoring instrumentation meets the guidelines of Regulatory Guide (R.G.) 1.97 as applied to emergency response facilities. The licensee responded to Item 6.2 of the generic letter on February 28, 1985. Additional information was provided by letters dated October 15, 1985, September 23, 1986, March 6, 1987, June 29, 1987, and October 5, 1988.

The staff completed its review of the licensee's conformance to R.G. 1.97, Revision 3, by providing the staff's safety evaluation to the licensee, on September 11, 1989. Although this safety evaluation referenced the licensee's October 5, 1988 letter, the information provided by that letter was not incorporated into the safety evaluation. Additional information was provided by the licensee on October 16, 1989.

A detailed review and technical evaluation of the licensee's submittals was performed by EG&G Idaho, Inc., under a contract to the NRC, with general supervision by the NRC staff. This work was reported by EG&G in Technical Evaluation Report (TER), "Conformance to Regulatory Guide 1.97: Cook-1/-2," dated August 1990 (attached). We have reviewed this report and concur with the conclusion that the licensee either conforms to, or has adequately justified deviations from, the guidance of R.G. 1.97 for each post-accident monitoring variable except for the variable wide range steam generator level.

2.0 EVALUATION CRITERIA

Subsequent to the issuance of the generic letter, the NRC held regional meetings in February and March 1983 to answer licensee and applicant questions and concerns regarding the NRC policy on R.G. 1.97. At these meetings, it was established that the NRC review would only address exceptions taken to the guidance of R.G. 1.97. Further, where licensees or applicants explicitly state that instrument systems conform to provisions of the regulatory guide, no further staff review would be necessary. Therefore, the review performed and reported by EG&G only addresses exceptions to the guidance of R.G. 1.97. This

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MEMORANDUM FOR THE DIRECTOR, FBI

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safety evaluation addresses the licensee's submittals based on the review policy described in the NRC regional meetings and the conclusions of the review as reported by EG&G.

3.0 EVALUATION

We have reviewed the evaluation performed by EG&G contained in the attached TER and concur with its bases and findings. The licensee either conforms to, or has provided an acceptable justification for deviations from the guidance of R.G. 1.97 for each post-accident monitoring variable except for the variable wide range steam generator level.

R.G. 1.97 recommends Category 1 wide range steam generator level instrumentation to monitor the operation of the steam generators. The instrumentation provided by the licensee does not meet the environmental and seismic qualification criteria for Category 1 instrumentation as recommended in R.G. 1.97.

The licensee states that Category 1 narrow range level instrumentation could be used to monitor heat sink capability. If the water level is not within the range of this instrumentation, the licensee would use auxiliary feedwater flow to indicate the availability of the steam generators as a heat sink.

R.G. 1.97 states that "it is essential that the range selections be sufficiently great to keep instruments on scale, or that one set of overlapping instruments will be on scale at all times." The wide range steam generator level instrumentation is defined by the regulatory guide as the key variable for monitoring the operation of the steam generators. The regulatory guide states that "it is essential that key variables be qualified to the more stringent design and qualification criteria." The regulatory guide emphasizes that degraded conditions and their magnitude be identified, and the operators be adequately informed, by as direct a measurement as possible, so that unplanned actions can be taken when necessary. The licensee's evaluation does not address these portions of the regulatory guide.

We find the licensee's justification for this deviation unacceptable. The purpose of wide range steam generator level measurement is for the identification and mitigation of an accident and for determining the availability of the steam generators as heat sinks. As such it is necessary that the operator have a positive indication of water level so that he is sure of the exact status of the steam generators at all times.

Qualification has been clarified by the Environmental Qualification Rule, 10 CFR 50.49. The licensee should provide environmentally and seismically qualified Category 1 wide range steam generator level instrumentation in accordance with the provisions of 10 CFR 50.49, R.G. 1.97, and R.G. 1.100.

4.0 CONCLUSION

Based on the staff's review of the enclosed TER and the licensee's submittals, we find that the Donald C. Cook Nuclear Plant Unit Nos. 1 and 2 design, is acceptable with respect to conformance to R.G. 1.97, Revision 3, except for the instrumentation associated with the variable wide range steam generator level.

It is the staff's position that instrumentation provided by the wide range steam generator level monitoring instrumentation is needed by the operator in the evaluation of the availability of the steam generators as heat sinks. It is also the staff's position that the licensee should install wide range steam generator level monitoring instrumentation which fully complies with the Category 1 criteria of 10 CFR 50.49, R.G. 1.97 and R.G. 1.100.

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