



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

ENCLOSURE 1

SAFETY EVALUATION

POWER AUTHORITY OF THE STATE OF NEW YORK

INDIAN POINT NUCLEAR GENERATING UNIT NO. 3

CONFORMANCE TO REGULATORY GUIDE 1.97

DOCKET NO. 50-286

1.0 INTRODUCTION

The Power Authority of The State of New York 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 (RG) 1.97 as applied to emergency response facilities. The licensee responded to Item 6.2 of the generic letter on June 29, 1984. Additional information was provided by letters dated January 7, 1986, December 1, 1986, and June 23, 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. The results of this evaluation were reported by EG&G in Technical Evaluation Report (TER), "Conformance to Regulatory Guide 1.97: Indian Point-3, Revision 1," dated October 1988 (enclosed). We have reviewed this report and concur with the conclusions, except for the conclusion concerning containment sump water temperature. For the remaining items we agree with EG&G's conclusion that the licensee either conforms to, or has adequately justified deviations from, the guidance of RG 1.97 for each post-accident monitoring variable except for the variable accumulator tank level and pressure.

The licensee's June 23, 1989, submittal was not reviewed by EG&G and, therefore, was not included in the TER. We have reviewed this submittal and conclude that the licensee's position on equipment identification is not acceptable.

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 RG 1.97. At these meetings, it was established that the NRC review would only address exceptions taken to the guidance of RG 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 RG 1.97. This 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, except for the findings contained in TER Appendix A, Item 13, concerning containment sump water temperature. For the remaining items we agree with EG&G's findings that the licensee either conforms to, or has provided an acceptable justification, for deviations from the guidance of RG 1.97 for each post-accident monitoring variable except for the variable accumulator tank level and pressure. We also find the licensee's position on equipment identification unacceptable.

RG 1.97 recommends the use of Category 2 containment sump water temperature instrumentation to monitor the operation of the containment cooling system. The licensee has not provided containment sump water temperature instrumentation. However, the licensee has provided Category 2 residual heat removal heat exchanger outlet temperature, containment spray flow and containment temperature. The use of this alternate instrumentation would provide the operator with information on the removal of heat from the containment. Therefore, the alternate instrumentation provided by the licensee for monitoring containment cooling is acceptable.

RG 1.97 recommends Category 2 accumulator tank level or pressure instrumentation, with a range of 10 to 90 percent volume for level and 0 to 750 psig for pressure, to monitor the operation of safety injection systems. The licensee has provided Category 3 instrumentation, with ranges of 84 to 92 percent volume for level and 0 to 700 psig for pressure.

The licensee has committed to upgrade its level or the pressure instrumentation to Category 2. However, the licensee has not provided justification for the deviations from the recommended ranges. If accumulator tank level is considered the key variable, the level range should be expanded to include 10 to 90 percent volume and the existing pressure range would be acceptable. If accumulator tank pressure is considered the key variable, the pressure range should be expanded to include zero to 750 psig and the existing level range would be acceptable.

The licensee supplied additional information on equipment identification. This information was not reviewed by EG&G and therefore was not included in the attached TER.

RG 1.97 recommends that Types A, B, and C instruments designated as Category 1 and 2 should be specifically identified with a common designation on the control panels so that the operator can easily discern that they are intended for use under accident conditions. The licensee has not provided any control room identification of this instrumentation. The licensee's justification is that the emergency operating procedures (EOPs) contain all of the instruments necessary for the safe operation of the plant during and after an emergency as well as instruments necessary to protect equipment which may or may not be safety related.

The intent of this identification is not for RG 1.97 instrumentation to be specifically called out in the EOPs, but rather to identify on the control room panels a minimum set of instruments that are qualified to monitor post-accident situations. This identification does not restrict the operator to using only those instruments identified.

The staff has reviewed the RG 1.97 recommendations on the identification of RG 1.97 instrumentation and has determined that the Type A and the Category 1 instrumentation need control room identification. Therefore, the licensee should provide identification in the control room of the Type A and the Category 1 RG 1.97 instrumentation. This identification should be performed in accordance with the Detailed Control Room Design Review guidelines.

4.0 CONCLUSION

Based on the staff's review of the enclosed TER and the licensee's submittals, we find that the Indian Point Nuclear Generating Unit No. 3 design, is acceptable with respect to conformance to RG 1.97, Revision 3, except for the instrumentation associated with the variable accumulator tank level and pressure, and the subject of equipment identification.

It is the staff's position that information provided by the accumulator tank level and pressure instrumentation is needed by the operator in the evaluation of proper operation of safety injection systems. It is also the staff's position that the licensee should install Category 2 accumulator tank level or pressure instrumentation with a range that is in conformance with the range recommendations of RG 1.97.

It is the staff's position that, at a minimum, identification of Type A and Category 1 RG 1.97 instrumentation is necessary to help the operator easily discern that this instrumentation is intended for use under accident conditions. Therefore, the licensee should provide identification in the control room of the Type A and the Category 1 RG 1.97 instrumentation.

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