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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO CONFORMANCE TO REGULATORY GUIDE 1.97

JAMES A FITZPATRICK NUCLEAR POWER PLANT

DOCKET NO. 50-333

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 instrumentation meets the guidelines of Regulatory Guide (R.G.) 1.97 as applied to emergency response facilities. The licensee's response to R.G. 1.97 was provided by letters dated November 30, 1984, June 28, 1985, December 24, 1985, February 25, 1986, June 9, 1987, and November 11, 1987.

A detailed review and technical evaluation of the licensee's submittals was performed by EG&G Idaho, Inc., under 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 -- FitzPatrick," dated November 1987 (attached). Note that reference to the licensee's submittal dated November 11, 1987 was inadvertently omitted from the TER. This submittal, however, has been reviewed by EG&G.

We have reviewed the TER 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 neutron flux.

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 for those items. Therefore, the review performed and reported by EG&G only addresses exceptions to the guidance of R.G. 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.

EVALUATION

We have reviewed the evaluation performed by EG&G as contained in the enclosed TER and concur with its basis and findings. The licensee either conforms to, or has provided acceptable justification for deviations from, the guidance of R.G. 1.97 for each post-accident monitoring variable with the exception of neutron flux.

The licensee has provided neutron flux monitoring instrumentation which complies with Category 1 design criteria except for environmental qualification. R.G. 1.97 requires all Category 1 and 2 instruments located in a harsh environment to be environmentally qualified in accordance with 10 CFR 50.49 unless adequate justification is provided. The justification provided by the licensee for not fully qualifying the neutron flux instrumentation is that the variable is only needed for long term use in the event of an anticipated transient without scram (ATWS), which does not result in an environment that is more severe than a normal operating environment. However, it is the staff's position that neutron flux instrumentation is required for monitoring purposes as related to the mitigation of any inadvertent boron dilution event or other reactivity addition situation resulting from accidents. Thus, the staff finds the licensee's justification unacceptable.

The staff has been informed that industry has developed a wide range neutron flux monitoring system that satisfies the criteria of R.G. 1.97. Therefore, it is the staff's position that the licensee should evaluate these newly developed systems and install neutron flux monitoring instrumentation which complies with the Category 1 criteria, including environmental qualification. It has been concluded by the staff that the existing neutron flux instrumentation is acceptable for interim use pending satisfactory implementation of a fully qualified indicating system.

CONCLUSION

Based on the staff's review of the enclosed TER and the licensee's submittals, we find that the James A. FitzPatrick Nuclear Power Plant design is acceptable with respect to conformance to R.G. 1.97, Revision 2, except for the instrumentation associated with the variable neutron flux.

The staff also finds acceptable the existing neutron flux instrumentation for interim operation. It is the staff's position that the licensee shall install and have operational neutron flux monitoring instrumentation which fully conforms to the recommendations of R.G. 1.97, Revision 2.

The licensee, in coordination with the NRC project manager, shall develop a schedule for the installation of Category 1 neutron flux monitoring instrumentation.