



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 47 TO FACILITY OPERATING LICENSE NO. DPR-70

PUBLIC SERVICE ELECTRIC AND GAS COMPANY,
PHILADELPHIA ELECTRIC COMPANY,
DELMARVA POWER AND LIGHT COMPANY, AND
ATLANTIC CITY ELECTRIC COMPANY

SALEM NUCLEAR GENERATING STATION, UNIT NO. 1

DOCKET NO. 50-272

Introduction

Public Service Electric and Gas Company (the licensee) informed the NRC on September 30, 1982, via a telephone conference, that a malfunction occurred in the Pressurizer Water Level-High protection channel for Salem Nuclear Generating Station - Unit 1. This was followed up by a letter to NRC on October 7, 1982. The licensee has requested deferral of the CHANNEL FUNCTIONAL TESTS for Channels I and III until the next refueling outage which is scheduled for October 16, 1982.

Evaluation

Channel III of the Pressurizer Water Level - High protection function malfunctioned and was declared INOPERABLE on September 27, 1982, in conformance with the requirements of the plant Technical Specifications. ACTION NO. 7 of Table 3.3-1 of the Technical Specifications was placed into effect which allows continued POWER OPERATION until the next CHANNEL FUNCTIONAL TEST. This test on Channel III is due to be performed on October 14, 1982, including the 25% extension allowed by Technical Specification 4.0.2. On October 8, 1982, the Pressurizer Water Level - High Channel I CHANNEL FUNCTIONAL TEST is due. This test cannot be accomplished with Channel III in the tripped mode as mandated by ACTION NO. 7.

The licensee has stated that repair of Channel III is possible but that there is a concern that there exists an interaction with Channel I, when Channel III is put into operation, that was experienced on August 27, 1982, and caused a reactor trip.

The Pressurizer Water Level - High protection function is backup system to the Pressurizer Pressure - High trip channel. It requires two of the three channels to actuate in order to achieve a reactor trip. With Channel III in the trip mode, the voting logic has been reduced to 1 out of 2. This change increases plant safety and only reduces plant reliability since a spurious signal in either of the two remaining channels will trip the reactor.

Taking into consideration that this function is not a primary trip, that Channel III will remain in the tripped condition, and that twice daily channel checks will still be conducted, deferral of the CHANNEL FUNCTIONAL TEST for Channels I and III to the scheduled October 16, 1982 Refueling Outage is acceptable.

What is of real concern to the staff is the apparent interaction between Channels I and III. This appears to be counter to IEEE Standard 279-1971. When the plant shuts down, the licensee must investigate not only the cause of failure of Channel III but also the non-independence of channels. The results of the investigation into the channel interaction should be reported to the NRC prior to restart.

Summary

The staff has concluded that there exists acceptable justification to grant the Salem - Unit 1 request to defer the monthly functional tests on Channels I and III of the Pressurizer Water Level - High reactor trip to October 16, 1982. The licensee must, however, investigate the cause of the malfunction of Channel III and the interaction between channels and report to the staff prior to restart.

Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated, does not create the possibility of an accident of a type different from any evaluated previously, and does not involve a significant reduction in a margin of safety, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: October 12, 1982

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