



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 76 TO FACILITY OPERATING LICENSE NPF-68
AND AMENDMENT NO. 55 TO FACILITY OPERATING LICENSE NPF-81
GEORGIA POWER COMPANY, ET AL.
VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2
DOCKET NOS. 50-424 AND 50-425

1.0 INTRODUCTION

On June 24, 1994, Georgia Power Company (GPC, the licensee) proposed an amendment to the Vogtle Electric Generating Plant (VEGP) Unit 1 and Unit 2 Technical Specifications (TS), Appendix A to Operating Licenses NPF-68 and NPF-81 in accordance with the provisions of 10 CFR 50.90 and 10 CFR 50.92. The proposed license amendments would revise the values of Z and S for the high and low pressurizer pressure reactor trip setpoints (TS Table 2.2-1, Functional Units 9 and 10 respectively) to allow the use of alternate pressure transmitters.

The Unit 1 pressurizer pressure transmitter IPT-457 output signal has had a history of excessive drift. The licensee has attempted several times to correct the drifting by recalibrating the transmitter and replacing the transmitter. The licensee's investigation into the root cause of the transmitter drift included: comparison of transmitter outputs, noise analyses, comparison of transmitter environments (temperature and vibration), troubleshooting and replacement of rack electronics, examination of sensing lines for leaks, laboratory testing, and discussions with the vendor and other utilities. To date, no apparent cause of the drift has been determined. The excessive drift has been more than occasional and GPC has determined that the problem warrants further investigation. The licensee believes that the source of the drift is the transmitter and not the instrumentation downstream of the transmitter. To aid in further investigative efforts, GPC plans to substitute the current transmitter IPT-457 (Tobar Model 32 PA1) with a Rosemount Model 1154 Series H pressure transmitter. GPC plans to perform the replacement during the Unit 1 refueling outage beginning in September 1994. Making the replacement during a plant outage is considered desirable since it reduces the risk of a plant trip during the replacement activities. On-line maintenance on this transmitter has resulted in two reactor trips and one safety injection at VEGP.

2.0 EVALUATION

Four redundant pressurizer pressure transmitters (PT-455, PT-456, PT-457, and PT-458) provide inputs to the logic for reactor trips on low- and high-pressurizer pressure and the logic for safety injection (SI) on low-pressurizer pressure. The setpoints at which the trip and SI actuation occur are specified in TS Tables 2.2-1 and 3.3-3, respectively. The licensee has specifically proposed that in Table 2.2-1 the Z and S values for low- and high-pressurizer pressure trip setpoints be changed from "0.71" and "1.67" respectively to "0.71[#](1.04)" and "1.67[#](1.17)" respectively, and further proposed that a footnote be added which states, "[#]The instrumentation used shall be bounded by either pair of values for Z and S."

Specific values for pressurizer pressure are assumed in the safety analyses for the initiation of reactor trips and SI actuation. In determining the values of the setpoints to ensure that the safety analysis limits are not exceeded, allowances are made for the accuracy with which the process variable, in this case pressurizer pressure, can be measured. These allowances account for instrument rack errors (R), sensor (transmitter) errors (S), and other errors (Z) associated with the measurement. The combination of these errors is referred to as the total allowance (TA). Values of TA, Z, and S are specified in TS Tables 2.2-1 and 3.3-3. The Allowable Value in the tables accounts for the effect of the rack errors, R, on the setpoints.

The Rosemount transmitter has an improved calibration accuracy and is less susceptible to drift as compared to the Tobar transmitter. The pressurizer pressure transmitters used at VEGP are a combination of Tobar Model 32PA1 and Veritrak Model 76PH2 transmitters. The proposed TS change will allow any or all of the pressure transmitters to be Tobar, Veritrak, or Rosemount transmitters. The NRC has determined that the proposed Z and S values are acceptable with the provision specified in a footnote to be added to the existing Table 2.2-1. This footnote is to state that the specific values for Z and S to be used for each channel of instrumentation will be determined by the particular model of transmitter installed in that channel.

The licensee has reevaluated the allowances described above to account for the differences in the characteristics of the existing transmitters and Rosemount transmitters. The allowances in Tables 2.2-1 and 3.3-3 for pressurizer pressure are based on Tobar and Veritrak transmitters. The value of Z increases from 0.71 to 1.04 and the value of S decreases from 1.67 to 1.17 for the Rosemount transmitter. The overall instrument loop uncertainty does not increase. Therefore, the total allowance and hence the trip setpoints in Table 2.2-1 remain unchanged. The licensee has determined that this ensures that the conclusions of the safety analyses remain valid. Based on its review, the NRC finds that determination acceptable.

The values of Z and S for the Rosemount transmitter will be added to TS Table 2.2-1. The licensee has determined that since the Z and S values for the safety injection actuation on low-pressurizer pressure in TS Table 3.3-3 bound the values determined for the Rosemount transmitter, no changes to the values of Z and S in that table are required. Also, the values of the trip setpoint and the total allowance are not affected. The NRC finds that determination acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Georgia State official was notified of the proposed issuance of the amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (59 FR 43143, dated August 22, 1994). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

5.0 CONCLUSION

The Commission has concluded based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: L. Wheeler

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