



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 110 TO FACILITY OPERATING LICENSE NPF-68
AND AMENDMENT NO. 88 TO FACILITY OPERATING LICENSE NPF-81
SOUTHERN NUCLEAR OPERATING COMPANY, INC., ET AL.
VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2
DOCKET NOS. 50-424 AND 50-425

1.0 INTRODUCTION

By letter dated April 28, 1999, Southern Nuclear Operating Company requested an extension of the time required to establish post-loss-of-coolant accident (LOCA) containment hydrogen monitoring at Vogtle Electric Generating Plant (VEGP). The request changes the licensing basis for VEGP from the present requirement of initiating containment hydrogen monitoring within 30 minutes to within 90 minutes of initiation of a safety injection following a LOCA. The proposed amendment will add a license condition to VEGP operating licenses NPG-68 and NPG-81 that requires post-LOCA containment hydrogen monitoring to be established within 90 minutes of initiation of a safety injection following a LOCA.

2.0 BACKGROUND

The licensee's April 28, 1999, request is similar to the request that was approved by a confirmatory order modifying post-Three Mile Island (TMI)-2 accident requirements pertaining to containment hydrogen monitors issued by the NRC for Arkansas Nuclear One (ANO) on September 28, 1998.

ANO's request was made in conjunction with Task Zero of the Risk-Informed, Performance-based Regulation Pilot Program, an initiative undertaken by the NRC and the Nuclear Energy Institute to improve the incorporation of risk-informed and performance-based insights into the regulation of nuclear power plants.

3.0 EVALUATION

The requirement to have indication of hydrogen concentration in containment within 30 minutes following the start of an accident has defined both design and operating characteristics for hydrogen monitoring systems at nuclear power plants since the implementation of NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980. Specifically, NUREG-0737, Section II.F.1 states that "[i]f an indication [of hydrogen concentration] is not available at all times, continuous indication and recording shall be functioning within 30 minutes of the initiation of safety injection." The licensing basis for VEGP, as documented in section 6.2.5.2.4 of its Final Safety Analysis Report, provides that the hydrogen monitoring system meets the requirements of TMI Action Plan Task II.F.1 regarding hydrogen monitoring.

Recent insights pertaining to plant risks and alternative severe accident assessment tools have led the NRC staff to conclude that some TMI Action Plan Items, including hydrogen concentration monitoring items, can be revised without reducing the ability of licensees to respond to design bases accident.

The requested 90 minutes for establishing hydrogen concentration monitoring would allow the VEGP operators to complete initial assessment and mitigation actions for the accident. These actions are typically completed within 60 minutes. The licensee can then obtain accurate indication of the hydrogen concentration within 30 minutes of establishing flow through the monitors. Since hydrogen production occurs over a long period of time and significant hydrogen accumulation is not expected for several hours after the event, the new limit of 90 minutes will not impact the licensee's ability to assess hydrogen concentration when significant hydrogen concentration is expected to occur. The new limit of 90 minutes will allow control room personnel to concentrate on more important tasks in the early phases of accident mitigation and still have hydrogen concentration data available to decision makers for the long-term core damage assessment process.

Establishing monitoring within 90 minutes will be adequate to ensure that indication of hydrogen concentration is available in a timely manner to support VEGP actions following initiation of safety injection. Therefore, the Staff concludes that the licensee's request for an extension of the requirement from 30 minutes to 90 minutes is acceptable.

4.0 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.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change the license conditions with respect to the 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 amendment involves 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding (64 FR 43779). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 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.

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