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the southern electric system

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ELV-01901
0489

Docket Nos. 50-424
50-425

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT
REQUEST TO REVISE TECHNICAL SPECIFICATION 3.4.1.3

In accordance with the provisions of 10 CFR 50.90 and 10 CFR 50.59, Georgia Power Company (GPC) hereby proposes to amend the Vogtle Electric Generating Plant (VEGP) Units 1 and 2 Technical Specifications, Appendix A to Operating Licenses NPF-68 and NPF-81.

Currently the Technical Specification prohibits starting a Reactor Coolant Pump (RCP) unless the secondary side temperature in its associated steam generator is less than 50°F higher than the Reactor Coolant System (RCS) temperature. The proposed revision to the Technical Specification will apply only to starting an RCP in MODE 4 when no other RCP is in operation. For this condition, the maximum allowable delta-T of 50°F will be replaced by a delta-T that varies between 25°F and 50°F according to the RCS temperature.

The VEGP design allows the use of two Residual Heat Removal System (RHRS) relief valves as one means of mitigating the effects of overpressurization of the RCS at reduced temperature. Westinghouse recently informed GPC that the analysis assumptions used to demonstrate the ability of the RHR relief valves to prevent overpressurization of the RCS were more severe than those used to demonstrate the ability of the RHR relief valves to prevent overpressurization of the RHR system. The proposed Technical Specification change will provide consistency between the Technical Specification, the RCS analysis assumptions used to demonstrate compliance with Appendix G limits, and the RHR analysis assumptions used to demonstrate compliance with ASME code limits.

Enclosure 1 provides a description of the proposed change and the basis for the change request.

Enclosure 2 provides the basis for a determination that the proposed change does not involve significant hazards considerations.

Enclosure 3 provides instructions for incorporating the proposed change into the Technical Specifications. The proposed revised pages are also provided in Enclosure 3.

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In accordance with 10 CFR 50.91, the designated state official will be sent a copy of this letter and all enclosures.

Mr. W. G. Hairston, III states that he is a Senior Vice President of Georgia Power Company and is authorized to execute this oath on behalf of Georgia Power Company and that, to the best of his knowledge and belief, the facts set forth in this letter and enclosures are true.

GEORGIA POWER COMPANY

By: W. G. Hairston, III
W. G. Hairston, III

Sworn to and subscribed before me this 20th day of September, 1990.

Sherry Ann Mitchell
Notary Public

MY COMMISSION EXPIRES DEC. 15, 1992

WGH, III/HWM/gm

Enclosures:

1. Basis for Proposed Change
2. 10 CFR 50.92 Evaluation
3. Instructions for Incorporation and Revised Pages

xc: Georgia Power Company

Mr. C. K. McCoy
Mr. G. Bockhold, Jr.
Mr. P. D. Rushton
Mr. R. M. Odom
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Southern Company Services
Mr. L. B. Long

U. S. Nuclear Regulatory Commission
Mr. S. D. Ebnetter, Regional Administrator
Mr. B. R. Bonser, Senior Resident Inspector, Vogtle
Mr. T. A. Reed, Licensing Project Manager, NRR

State of Georgia

Mr. J. L. Ledbetter, Commissioner, Department of Natural Resources

ENCLOSURE 1

VOGTLE ELECTRIC GENERATING PLANT REVISION TO TECHNICAL SPECIFICATION 3.4.1.3

BASIS FOR PROPOSED CHANGE

Proposed Change

Footnote ** to Specification 3.4.1.3 prohibits the starting of a reactor coolant pump unless the secondary water temperature of each steam generator is less than 50°F above each of the Reactor Coolant System cold leg temperatures. The proposed change will add a sentence that is applicable to starting a reactor coolant pump when none of the reactor coolant pumps are in operation. The additional sentence states, "With no reactor coolant pump running, this value is reduced to 25°F at a RCS temperature of 350°F and varies linearly to 50°F at a RCS temperature of 200°F." This change will also be reflected in the bases sections for Specifications 3.4.1.3 and 3.4.9.3.

Basis

The Vogtle Electric Generating Plant (VEGP) Technical Specification allows the use of two Residual Heat Removal System (RHRS) relief valves as a means of mitigating the effects of overpressurization of the RCS at reduced temperature. Westinghouse has recently identified differences in the original design basis for the RHR relief valves and the COMS design basis. The analysis for COMS utilized overpressurization events that were not used as the design basis for sizing the RHR relief valves to prevent RHRS overpressurization. In order to resolve the discrepancy, the transients assumed for COMS have been evaluated for their effect on the RHRS. The current Technical Specifications are consistent with the analyses used to demonstrate that the RCS will remain within the 10 CFR 50 Appendix G limits for a cold overpressurization event. However, the COMS design basis events could result in exceeding the capacity of one RHR relief valve. The transient of concern is the heat addition transient as a result of starting an idle reactor coolant pump when no other reactor coolant pump is running and the secondary side water temperature of the associated steam generator is hotter than the RCS temperature.

The heat addition transient analysis for the COMS design assumes that with no reactor coolant pumps running, a reactor coolant pump is started with a secondary side water temperature 50°F higher than the primary side. If it is assumed that one train of the RHR is in operation and that the other RHR train is isolated from the RCS, the resulting pressure would not exceed the RCS pressure limit but could exceed the allowable RHR pressure. The actual pressure increase is proportional to the initial reactor coolant temperature. With the reactor coolant at 200°F the allowable RHR pressure would not be exceeded for an initial temperature difference of 50°F. With the reactor coolant at 350°F the

ENCLOSURE 1 (CONTINUED)

VOGTLE ELECTRIC GENERATING PLANT
REVISION TO TECHNICAL SPECIFICATION 3.4.1.3

BASIS FOR PROPOSED CHANGE

allowable RHR pressure would not be exceeded for an initial temperature difference of 25°F. The allowable delta-T varies linearly between these two RCS temperatures. This concern is only relevant to the range of RCS temperatures from 200°F to 350°F, which corresponds to operation in MODE 4. Current plant operating procedures state that at least one reactor coolant pump should be in operation whenever the RCS temperature is above 160°F. The current Technical Specification for MODE 4 limits the initial temperature difference for starting a reactor coolant pump to 50°F regardless of whether or not another reactor coolant pump is operating and regardless of the initial reactor coolant temperature. In order to make the Technical Specification consistent with prevention of RHR system overpressurization when only one train of RHR is in operation, the additional temperature restriction for starting a reactor coolant pump when no other reactor coolant pumps are running is being proposed.

ENCLOSURE 2

VOGTLE ELECTRIC GENERATING PLANT REVISION TO TECHNICAL SPECIFICATION 3.4.1.3

10 CFR 50.92 EVALUATION

Pursuant to 10 CFR 50.92, Georgia Power Company (GPC) has evaluated the attached proposed amendment to the VEGP Units 1 and 2 Technical Specifications and has determined that operation of the facility in accordance with the proposed amendment would not involve significant hazards considerations.

Background

Westinghouse has determined that design basis assumptions used to design the Cold Overpressure Mitigation System (COMS) included events that were not included in the analysis used to size the RHR relief valves for protection of the RHR pressure boundary. Analyses have been completed that demonstrate that one RHR relief valve has adequate capacity to mitigate the design basis heat addition event for a primary to secondary delta-T of up to 50°F for a primary temperature of 200°F. For primary temperatures from 200°F to 350°F a single RHR relief valve has adequate capacity to mitigate the heat addition event for a primary to secondary delta-T which varies linearly with RCS temperature from 50°F down to 25°F. The Technical Specification allows operation with only one train of RHR when two PORVs are available for COMS, however, the PORV setpoint is higher than the RHR design pressure. Since the current Technical Specification only requires the 50°F delta-T to be maintained, it is proposed to revise the Technical Specification so that the RHR system operation will be consistent with the COMS overpressure protection analysis. The more restrictive delta-T limits are only required when starting a reactor coolant pump with the RCS water solid and when no other reactor coolant pumps are running. While this condition is not prohibited by the Technical Specification, current VEGP practice is that at least one reactor coolant pump should be in operation when above 160°F and that the delta-T should be less than 10°F when starting a reactor coolant pump. In addition, the RCS is not normally water solid when the temperature is higher than approximately 200°F.

Analysis

The current Technical Specification was written to be consistent with the COMS analysis. It prohibits starting of an idle reactor coolant pump if the associated secondary side temperature is greater than 50°F above the primary side temperature. The COMS analysis takes credit for the use of two RHR relief valves. The sizing of the RHR relief valves for protection of the RHR system was based on a different set of analyses than used by COMS. This resulted in a Technical Specification that is not consistent with analysis assumptions used to demonstrate that the RHR is not overpressurized as a result of the COMS design basis heat addition transient, when only one train of RHR is in service.

Overpressurization of the RHR would require a combination of conditions which are currently allowed by the Technical Specification but are unlikely to occur simultaneously. They are 1) the reactor must be at Hot Shutdown with no reactor

ENCLOSURE 2 (CONTINUED)

VOGTLE ELECTRIC GENERATING PLANT REVISION TO TECHNICAL SPECIFICATION 3.4.1.3

10 CFR 50.92 EVALUATION

coolant pumps in operation, 2) the secondary side must be between 25°F and 50°F hotter than the primary side, 3) the primary side must be at a temperature higher than the value associated with the primary to secondary delta-T, 4) the reactor coolant system must be water solid, 5) a reactor coolant pump must be started, and 6) the overpressure protection must be provided by the two PORVs while only one train of RHR is isolated from the RCS (i.e., only one train of the RHRS with its relief valve is available). The current Technical Specification does not prohibit any of these conditions. However, current operating procedures do not produce this combination of conditions because they state that at least one reactor coolant pump should be in operation when the RCS temperature is greater than 160°F. In addition, the RCS is not normally water solid except when below about 200°F. The relief capacity of one PORV for this scenario is sufficient to maintain the resulting pressure below the RCS Appendix G limit. The relief capacity of one RHR relief valve is sufficient to maintain the resulting pressure below the RCS Appendix G limit, but not sufficient to maintain the pressure below the ASME limit for the RHRS. GPC believes that this combination of conditions is not likely, however, GPC also believes that the Technical Specification and supporting analyses should be consistent. The proposed Technical Specification change provides that consistency.

The proposed Technical Specification revision will assure that the Technical Specification does not allow starting of an idle reactor coolant pump with the combination of temperatures that could result in exceeding the RHR design pressure during the time when COMS protection is being provided by the PORVs and only one RHR relief valve is available.

Results

The proposed change to the Technical Specification will not result in a significant increase in the probability of an accident previously evaluated because it does not alter the functional requirements of any piece of equipment. It adds an additional restriction for starting of an idle reactor coolant pump when no other reactor coolant pump is operating. The change will expand the Technical Specification to cover the analysis assumptions for demonstrating that the RHR pressure limits are met.

This change to the Technical Specification will not introduce the possibility of a new or different kind of accident from any accident previously evaluated because it does not affect the causes of overpressurization events. It recognizes the need for consistency between the COMS analysis for RCS overpressurization and the design basis for prevention of overpressurization of the RHRS. It expands the Technical Specification to be consistent with a set of analysis assumptions that include an unlikely combination of operating conditions.

ENCLOSURE 2 (CONTINUED)

VOGTLE ELECTRIC GENERATING PLANT
REVISION TO TECHNICAL SPECIFICATION 3.4.1.3

10 CFR 50.92 EVALUATION

This revision to the Technical Specification will not result in a significant reduction in the margin of safety because it assures that the plant will continue to be operated within the parameter; used for analyses that demonstrate that the RHR system pressure limits will not be exceeded. These limits are slightly more conservative than those currently allowed to prevent overpressurization of the RCS.

Conclusion

Based on the preceding analysis, GPC has determined that the proposed change to the Technical Specification does not involve a significant increase in the probability or consequences of accidents previously evaluated, create the possibility of a new or different kind of accident from any previously evaluated, or involve a significant reduction in a margin of safety. Therefore, GPC concludes that the proposed change meets the requirements of 10 CFR 50.92(c) and does not involve a significant hazards consideration.