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*the southern electric system*

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HL-752  
0309V

October 20, 1989

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

PLANT HATCH - UNITS 1, 2  
NRC DOCKETS 50-321, 50-366  
OPERATING LICENSES DPR-57, NPF-5  
REQUEST TO REVISE TECHNICAL SPECIFICATIONS:  
END-OF-CYCLE RECIRCULATION PUMP TRIP RESPONSE TIME

Gentlemen:

In accordance with the provisions of 10 CFR 50.90, as required by 10 CFR 50.59(c)(1), Georgia Power Company (GPC) hereby proposes changes to the Plant Hatch Units 1 and 2 and Technical Specifications (TS), Appendix A to Operating Licenses DPR-57 and NPF-5.

The proposed changes involve a revision of the Plant Hatch Units 1 and 2 TS relative to the response time of the end-of-cycle recirculation pump trip (EOC-RPT).

Specifically the proposed TS changes will:

1. Add a definition of EOC-RPT system response time to the Unit 2 TS as well as increase the current response time acceptance.
2. Add the EOC-RPT system response time acceptance criteria to the Unit 1 TS with a note defining EOC-RPT system response time.

Enclosure 1 provides a detailed description of the proposed changes and the circumstances necessitating the change request.

Enclosure 2 details the bases for our determination that the proposed changes do not involve a significant hazards consideration.

Enclosure 3 provides page change instructions for incorporating the proposed changes. The proposed changed Technical Specifications pages follow Enclosure 3.

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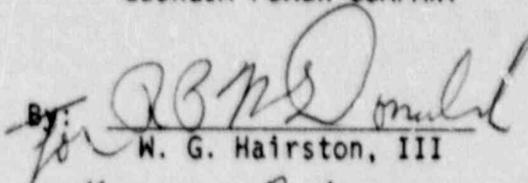
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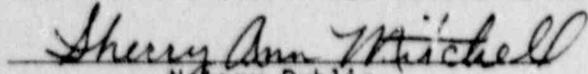
In accordance with the requirements of 10 CFR 50.91, a copy of this letter and all applicable enclosures will be sent to Mr. J. L. Ledbetter of the Environmental Protection Division of the Georgia Department of Natural Resources. GPC requests that the proposed amendment be expeditiously reviewed and issued as soon as possible.

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

GEORGIA POWER COMPANY

By:   
for W. G. Hairston, III

Sworn to and subscribed before me this 20<sup>th</sup> day of October 1989.

  
Notary Public  
MY COMMISSION EXPIRES DEC. 15, 1992

GKM/eb

Enclosures:

1. Basis for Change Request
2. 10 CFR 50.92 Evaluation
3. Page Change Instruction

c: Georgia Power Company  
Mr. H. C. Nix, General Manager - Nuclear Plant  
Mr. J. D. Heidt, Manager Engineering and Licensing - Hatch  
GO-NORMS

U.S. Nuclear Regulatory Commission, Washington, D.C.  
Mr. L. P. Crocker, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II  
Mr. S. D. Ebnetter, Regional Administrator  
Mr. J. E. Menning, Senior Resident Inspector - Hatch

State of Georgia  
Mr. J. L. Ledbetter, Commissioner - Department of Natural Resources

## ENCLOSURE 1

PLANT HATCH - UNITS 1, 2  
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### BASIS FOR CHANGE REQUEST

Both units at Plant Hatch are equipped with end-of-cycle recirculation pump trip (EOC-RPT) system instrumentation. The EOC-RPT system is designed to improve fuel thermal margin by tripping both recirculation pumps upon sensing Turbine Stop Valve (TSV) closure or Turbine Control Valve (TCV) fast closure. Tripping of the recirculation pumps results in reduced core flow which causes a smaller net positive void reactivity addition to the system during pressurization events. This results in a lower power increase and consequently smaller change in critical power ratio. The net result is to reduce the thermal severity of turbine trip, generator load rejection, and feedwater controller failure events.

The increase in thermal margin depends on how fast core flow is reduced. There is a time delay associated with opening the pump motor breakers, and the actual coastdown of the pumps. The coastdown time of the pumps is a physical parameter based on pump design and inertia, and is not expected to change unless major modifications are performed. Plant Technical Specifications (TS) require testing of the time delay associated with opening the breakers and associated logic (EOC-RPT response time). This response time is the subject of this proposed change.

### PROPOSED CHANGE 1:

Proposed Change 1 will add a definition of EOC-RPT response time to the Unit 2 Technical Specifications (similar to that contained in the Standard Technical Specifications [STS]) and change the EOC-RPT response time acceptance criteria in Unit 2 Table 3.3.9.2-3 to 175 milliseconds (ms) for the test associated with TCV fast closure and to 155 ms for the test associated with TSV closure.

### BASIS FOR PROPOSED CHANGE 1:

Amendment 69 to the Unit 2 Technical Specifications added operability and surveillance requirements for the Anticipated Transient Without Scram (ATWS) and EOC-RPT instrumentation. Included was a requirement to verify the EOC-RPT system response time. The requirements, including the verification of instrumentation response time, were based on the STS for a 5WR/4 plant.

ENCLOSURE 1 (Continued)

REQUEST TO REVISE TECHNICAL SPECIFICATIONS:  
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The EOC-RPT response time acceptance criteria approved in Amendment 69 was less than or equal to 135 ms for both TSV closure and TCV fast closure. This time was taken from Unit 2 FSAR Section 5.5.16.2 and is the time required to open the breakers. (The main power breakers for both recirculation pump motors are closed during normal operation.) In order to be consistent with the time delay for RPT actuation used in the FSAR analyses, signal generation and logic response as well as the breaker opening time should be considered in the response time criteria. The STS definition of EOC-RPT Response Time is the time interval between the initial movement of the TCV or TSV and the "complete suppression of the electric arc between fully open contacts of the recirculation pump circuit breaker." Our proposed definition is similar to the STS definition, but has been clarified relative to "initial movement" of the associated valves as discussed below. This discussion focuses on what will be measured during the response time test versus what is assumed in the applicable safety analyses.

Turbine Control Valves (TCVs) - Fast closure of the TCVs above 30% reactor power initiates an anticipatory reactor scram and RPT. The fast closure signal is provided by pressure switches on the electrohydraulic control (EHC) oil lines. Oil pressure decreases rapidly following a generator load rejection, and once it drops below the trip setpoint, a pressure switch actuates and sends an initiating signal to both the RPS and RPT logic. The RPT logic sends a signal to the recirculation pump motor breakers. The pressure switch trip setpoint is calibrated every 18 months and is set such that the trip occurs prior to TCV fast closure.

The EOC-RPT response time will be measured from the time the EHC oil pressure drops to the pressure switch trip setpoint to complete de-energization of the recirculation pump motor breakers. The acceptance criteria for this test will be 175 ms.

The transient analyses presented in Unit 2 FSAR Section 15.1.1.1.2, and subsequent reload analyses, assume the EHC oil pressure switch trip setpoint and the initial TCV motion are coincident, and both occur at the start of the transient. A response time of 175 ms is assumed in these analyses. It is appropriate that the EOC-RPT response time test criteria and the response time assumed in the safety analyses be the same since both start when the pressure switch setpoint is reached and both end when the recirculation pump motor breaker is open.

## ENCLOSURE 1 (Continued)

### REQUEST TO REVISE TECHNICAL SPECIFICATIONS: END-OF-CYCLE RECIRCULATION PUMP TRIP RESPONSE TIME

Turbine Stop Valves (TSVs) - Closure of the TSVs above 30% reactor power initiates an anticipatory reactor scram and RPT. Position switches on the stop valves send the signal when the valves are still 90% open. These limit switches are inspected and calibrated each outage. The EOC-RPT response time will be measured from the limit switch actuation to complete de-energization of the recirculation pump motor breakers. The FSAR and subsequent reload turbine trip analyses assume a EOC-RPT response time of 175 ms from the start of valve motion. Our measurement will start from actuation of the limit switch. The turbine trip transient analyses assume it takes 20 ms after initial TSV movement to actuate the limit switch and send the signal to the RPT logic. To account for the time required to actuate the limit switch, our acceptance criteria for the test will be 155 ms, 20 ms less than assumed in the transient analyses.

The proposed change to the EOC-RPT acceptance criteria will be incorporated into Unit 2 Table 3.3.9.2-3, "EOC-RPT System Response Time". The revised criteria will be 175 ms for the test associated with TCV fast closure and 155 ms for the test associated with TSV closure. The response time will be measured from either the time the EHC oil pressure exceeds the switch setpoint or from the time the TSV limit switch is actuated to complete suppression of the electrical arc between the fully open contacts of the recirculation pump motor circuit breakers.

The modified STS definition of EOC-RPT system response time will be added to Section 1.0 "Definitions" in the Unit 2 TS. The STS definition will be modified to state that the response time interval which is being measured for both the TCV and TSV.

#### PROPOSED CHANGE 2:

Proposed Change 2 will add the EOC-RPT response time acceptance criteria of 175 ms for the test associated with the TCV and 155 ms for the test associated with the TSV to Unit 1 Table 4.2-9, and add a note defining EOC-RPT system response time. The note will include a statement that each EOC-RPT test shall include the logic of one type of channel input (TCV fast closure or TSV closure), such that both types of channel inputs are tested at least once per 36 months. This statement has been added for consistency with existing Unit 2 surveillance Requirement 4.3.9.2.3. It is also consistent with the BWR/4 STS.

ENCLOSURE 1 (Continued)

REQUEST TO REVISE TECHNICAL SPECIFICATIONS:  
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BASIS FOR PROPOSED CHANGE 2:

The NRC issued Amendment 76 to the Unit 1 TS on June 10, 1980 which added limiting conditions for operation and surveillance requirements for EOC-RPT. The SER stated (page 5), "to mitigate pressurization transient effects, the EOC-RPT must shut down the recirculation pumps within approximately 175 ms after initial closure movement of either the turbine stop valves or turbine control valves." The 175 ms time delay is the value assumed in the reload transient analyses for Unit 1 as it is for Unit 2. Therefore, this proposed change simply adds the EOC-RPT system response time acceptance criteria to the TS, and defines EOC-RPT response time. The proposed change will make Unit 1 and Unit 2 TS more consistent by defining EOC-RPT response time similarly, and having the same response time acceptance criteria. Per the discussion under Proposed Change 1, the response time interval will start with signal generation from the associated TSV limit switch or from when TCV oil pressure drops to the setpoint of the switch. Adding the note to Unit 1 Table 4.2-9 provides a definition similar to that proposed in the Unit 2 "Definitions" section, and provides clarification to insure the surveillance frequency for performing the EOC-RPT response time test is the same for both units.

ENCLOSURE 2

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10 CFR 50.92 EVALUATION

PROPOSED CHANGE 1:

Proposed Change 1 adds a modified STS definition of EOC-RPT response time to the Unit 2 TS, and changes the EOC-RPT response time acceptance criteria from 135 ms to 155 ms for the test associated with TSV closure and from 135 ms to 175 ms for the test associated with TCV fast closure.

BASIS:

Changing the acceptance criteria to 155 ms and 175 ms does not reflect any changes in the physical arrangement or function of the RPT logic. As documented in the FSAR, the current TS acceptance criteria of 135 ms is based on the opening time of the breakers, and does not include signal generation or logic response time. The modified STS definition of EOC-RPT response time will allow measurement of the EOC-RPT response time to be consistent with the assumptions in the applicable transient analyses.

Georgia Power Company has evaluated this proposed change and determined it involves no significant hazards considerations.

This proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated. The RPT system will not be altered in any way and will continue to function and respond as described in Unit 2 FSAR Sections 5.5.16 and 15.1.1.1.2. The proposed changes, which are based on the STS, will result in testing that verifies the pump trip system responds as currently described in the Unit 2 FSAR (Section 15.1.1.1.2). The proposed change, in fact, results in a more complete, accurate, and meaningful test.

This proposed change does not create the possibility of a new or different kind of accident from any previously analyzed, because the RPT system will not be altered by the change. The trip system will continue to respond (trip) on the present signals at the present trip setpoints. The result of its response to a trip signal will continue to be as described in the FSAR. No other response or function will be possible because these changes will not result in physical changes to the logic system, its inputs, or its outputs.

ENCLOSURE 2 (Continued)

REQUEST TO REVISE TECHNICAL SPECIFICATIONS:  
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This proposed change does not involve a significant decrease in the margin of safety because the proposed test definition and acceptance criteria match those given in Unit 2 FSAR Section 15.1.1.1.2 within limitation of actual EOC-RPT response time measurement. The test definition is taken from the STS and the acceptance criteria is based on the defined test. The proposed changes actually result in better and more meaningful testing of EOC-RPT. The proposed testing would better verify the RPT system's ability to perform its intended function in its intended manner as defined in the Technical Specification Bases and the Unit 2 FSAR.

PROPOSED CHANGE 2:

Proposed Change 2 will add the EOC-RPT response time acceptance criteria of 175 ms for the test associated with the TCV and 155 ms for the test associated with the TSV to the Unit 1 TS, along with a note defining EOC-RPT system response times. The note includes specification of the surveillance frequency, for consistency with the Unit 2 TS and the BWR/4 STS.

BASIS:

Georgia Power Company has evaluated this proposed change and determined it involves no significant hazards considerations.

This proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated. Adding acceptance criteria for the test does not reflect any changes in the physical arrangement or function of the RPT logic. The change provides additional requirements not presently in the TS, and clarifies the surveillance frequency for consistency between Unit 1, Unit 2, and BWR/4 STS requirements.

This proposed change does not create the possibility of a new or different kind of accident from any previously analyzed, because the RPT system will not be altered by the change. The trip system will continue to respond (trip) on the present signals at the present trip setpoints. The result of its response to a trip signal will continue to be as described in the FSAR. No other response or function will be possible because these changes will not result in physical changes to the logic system its inputs, or its outputs.

ENCLOSURE 2 (Continued)

REQUEST TO REVISE TECHNICAL SPECIFICATIONS:  
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This proposed change does not involve a significant decrease in the margin of safety, because the EOC-RPT acceptance criteria is consistent with that currently assumed in the FSAR and subsequent reload analyses. Adding the acceptance criteria constitutes an additional limitation not presently included in the TS, and clarifies the surveillance frequency allows consistency between the testing requirements for both units.