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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 FOR ADDITIONAL INFORMATION REGARDING
IMPLEMENTATION OF ANTICIPATED
TRANSIENTS WITHOUT SCRAM (ATWS) MODIFICATIONS

Gentlemen:

In response to a verbal request of the NRC, additional information regarding Georgia Power Company's (GPC) implementation of modifications required by the ATWS rule, 10 CFR 50.62, is provided in the enclosure. This information supplements GPC's previous letters dated March 4, 1987, and April 29, 1988.

The enclosed responses have been discussed with L. P. Crocker and H. C. Li of the NRC staff. It is GPC's understanding that these responses, with one exception, are acceptable to the NRC staff. Specifically, while the NRC expressed concerns regarding the scope of testing at power of the Alternate Rod Insertion system, GPC believes, as detailed in the enclosure, that the current testing scope is acceptable and achieves compliance with the ATWS rule.

If you have any further questions in this regard, please contact this office at any time.

Sincerely,

W. G. Hairston, III

W. G. Hairston, III

CLT/ac

Enclosure: Request for Additional Information

c: (see next page)

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Georgia Power

c: Georgia Power Company
Mr. H. C. Nix, General Manager - Hatch
Mr. L. T. Gucwa, Manager, Licensing and Engineering - Hatch
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U.S. Nuclear Regulatory Commission, Washington, D.C.
Mr. L. P. Crocker, Licensing Project Manager - Hatch

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

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Georgia Power

ENCLOSURE

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ALTERNATE ROD INSERTION (ARI) IMPLEMENTATION

NRC Item 1: Describe the functioning of the manual initiation switches in the Plant Hatch ARI design.

GPC Response: Two ARI manual initiation control switches, 1C11-S1A and B, are located on control room panel 1H13-P603. The control switches are pushbutton switches with collars. To arm the ARI logic, the collars of both switches must be rotated from the normal position to the armed position. Confirmation of the arming of the ARI logic is provided by the alarming of the ARI MANUAL INITIATION IN ARMED POSITION annunciator. To manually actuate the ARI logic, both switches must be depressed. Confirmation of the manual initiation of the ARI logic is provided by the alarming of the ARI INITIATED annunciator and the illumination of several other indicating lights.

NRC Item 2: The ATWS rule guidance states that the ARI system should be testable at power. Describe the scope of ARI testing that is performed while at power. Specifically, are the relays which actuate the ARI valves (final actuation devices) tested while at power?

GPC Response: As described in GPC's April 29, 1988 letter, the Plant Hatch ARI uses a redundant two-out-of-two logic arrangement. This allows maintenance, testing, or calibration while at power of the system logic and instrumentation up to the final trip devices (four ARI actuation relays and their associated solenoid valves). The four ARI actuation relays thus are not tested while at power.

Each individual level and pressure instrument can be tested during plant operation without initiating the ARI system, since two level or two pressure signals must be present in one channel to complete the signal. Therefore, bypasses are not required for this design approach. If the conditions for ARI initiation occur during sensor maintenance, either the remaining redundant active level channel or pressure channel would be available to initiate the system.

This design configuration was specifically referenced as an acceptable means of meeting the testable at power requirement in Section 6.2, Item 10, of the NRC Safety Evaluation of Licensing Topical Report NEDE-31096-P.

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GPC does not believe extending the testing while at power to cover the four ARI actuation relays is necessary to achieve full compliance with the ATWS rule. Currently, in addition to the described scope of testing while at power, which is performed at least once every 31 days, a complete Logic System Functional Test (LSFT) is performed on the ARI system at least once per operating cycle. The LSFT exercises all portions of the ARI logic; the ARI actuation relays are energized to initiate an ARI scram. This scope and frequency of testing for ARI while at power and during shutdown are consistent with the testing scope for other comparable systems, many of which, unlike ARI, are required to be safety-related.

If testing of the four ARI actuation relays while at power were to be required, GPC would have to install test switches which would block the actuation signals to the ARI solenoid valves during surveillance testing. As an alternative, GPC would possibly pursue modifying the procedures to test ARI at power to include lifting specified leads to accomplish the same function as a test switch. GPC views both alternatives as undesirable, since they increase the possibility of human error or equipment malfunction preventing ARI from functioning when needed. The improvement in ARI reliability due to the ability to test the system more frequently does not justify the introduction of these new failure mechanisms.

Based on the above considerations, GPC concludes that the current scope of ARI testing while at power is acceptable and achieves compliance with the ATWS rule.

NRC Item 3: Describe how GPC intends to address the ATWS rule requirement that each boiling water reactor have an ARI that is diverse (from the reactor trip system (RTS)) from sensor output to the final actuation device. Specifically, the NRC staff position on ARI versus RTS diversity requires a diverse manufacturer for the analog transmitter trip unit (ATTU) circuit boards to assure sufficient diversity between ARI and RTS.

GPC Response: Currently, GPC uses General Electric (GE) ATTU circuit boards in both the Plant Hatch ARI system and the Reactor Protection System (RPS) to provide the reactor pressure and reactor water level trip signals. GPC participated in the BWR Owner's Group (BWROG) activity to address the issue of ARI and RPS trip unit diversity. GPC concurred with the position expressed in the BWROG letter to the NRC dated June 28, 1988, that the ARI design provides a diverse logic circuit and valve design from RPS which addresses the major contributors to common cause

failure; therefore, manufacturer diversity of the trip units is not necessary to meet the intent of the ATWS rule.

However, the NRC staff has continued to maintain its position that manufacturer diversity is required, as noted in the NRC response, dated August 8, 1988, to the referenced BWROG letter. Therein the NRC encouraged licensees to provide a maximum effort to satisfy the diversity requirements. GPC will agree to replace the GE ATTU circuit boards in the ARI system with circuit boards manufactured by Rosemount. This modification will be completed by the end of the Plant Hatch Units 1 and 2 refueling outages currently scheduled, respectively, for 1990 and 1991.

RECIRCULATION PUMP TRIP (RPT) IMPLEMENTATION

NRC Item 1: In GPC's April 29, 1988, letter responding to NRC questions on GPC's implementation of the ATWS rule requirements, GPC agreed to upgrade the RPT system. The upgraded RPT will duplicate the RPT design used at Brunswick Steam Electric Plant (BSEP) by Carolina Power and Light Company (CP&L), as documented in CP&L's letters to the NRC of April 14, 1987, July 22, 1987, and November 13, 1987. Provide further details on the implementation of the upgraded RPT at Plant Hatch which demonstrates that the reliability analysis performed on the BSEP RPT is applicable to the Plant Hatch upgraded RPT.

GPC Response: GPC plans to upgrade the existing Plant Hatch RPT design by modifying the actuation logic so the current redundant two-out-of-two logic used to actuate ARI will also be used to simultaneously trip both recirculation pumps. This modification will be completed by the end of the Plant Hatch Units 1 and 2 refueling outages currently scheduled, respectively, for 1990 and 1991. The CP&L reliability analysis performed for the BSEP RPT design is directly applicable to the Plant Hatch upgraded RPT design.

The ARI/RPT trip signal will actuate a single trip coil in each recirculation system motor generator (M/G) set drive motor breaker. The upgraded Plant Hatch RPT design will duplicate the BSEP RPT design. As such, the upgraded design will differ from the Monticello RPT design, referenced in Section 7.1 of the NRC Safety Evaluation of Licensing Topical Report NEDE-31096-P, in the same manner as the BSEP RPT design. Monticello trips the recirculation M/G set field breaker using redundant trip coils; whereas the BSEP and Plant Hatch designs trip the M/G set drive motor breaker (main 4-kV breaker).

ENCLOSURE (Continued)

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The CP&L reliability analysis demonstrated that in both the Monticello and BSEP designs, the circuit breaker (field breaker model AKF-2-25 and 4160-V breaker, respectively) failures dominate. Therefore, the analysis focused on the relative unavailabilities of the two breakers. The CP&L analysis demonstrates that the 4160-V breaker is more reliable than the model AKF-2-25. The use of the more reliable 4160-V breaker in the BSEP and Plant Hatch RPT offsets the use of the two trip coils in the Monticello RPT design, resulting in the BSEP/Plant Hatch RPT design being at least equivalent in reliability to the Monticello RPT.

It should be noted that the specific manufacturer of the trip units (GE or Rosemount) used in ARI/RPT initiation logic does not impact the results of the CP&L RPT reliability study, since generic failure data were used for those components in the analysis.