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NED-84-017

April 3, 1984

Director of Nuclear Reactor Regulation
Attention: Mr. John F. Stolz, Chief
Operating Reactors Branch No. 4
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

NRC DOCKET 50-366
OPERATING LICENSE NPF-5
EDWIN I. HATCH NUCLEAR PLANT UNIT 2
REVISION TO REQUEST FOR TECHNICAL SPECIFICATION CHANGES
TO SUPPORT ANALOG TRANSMITTER TRIP SYSTEM INSTALLATION

Gentlemen:


By letter dated January 23, 1984 Georgia Power Company submitted proposed revisions to the Edwin I. Hatch Unit 2 Technical Specifications (Appendix A to the Operating License). These changes were to account for and support the modifications to plant design associated with the installation of a General Electric Company (GE) Analog Transmitter Trip System (ATTS).

Included with that letter was the document entitled "Edwin I. Hatch Nuclear Plant Unit 2, Docket No. 50-366, Proposed Plant Modifications - Analog Transmitter Trip System Installation". Appendix 1 to that document contained a significant hazards review (as required by 10 CFR 50.92) for all of the proposed Technical Specification changes. Since the time that this submittal was made, GPC has changed the methodology used for Plant Hatch significant hazards reviews. Therefore, GPC has completely rewritten these reviews for that submittal, and the new reviews are enclosed with this letter.

Appendix A to the above referenced document should be replaced in its entirety with the enclosure to this letter. This revision does not amend or affect the proposed changes to the Hatch 2 Technical Specifications which were submitted on January 23, 1984.

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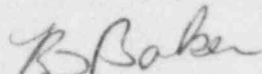
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Georgia Power 

Director of Nuclear Reactor Regulation
Attention: Mr. John F. Stolz, Chief
Operating Reactors Branch No. 4
April 3, 1984
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Pursuant to the requirements of 10 CFR 50.92, J. L. Ledbetter of the Georgia Department of Natural Resources will be sent a copy of this letter and all applicable attachments.

Sincerely yours;



for L. T. Gucwa

CBS

Enclosure

xc: H. C. Nix, Jr.
Senior Resident Inspector
J. P. O'Reilly, (NRC-Region II)
J. L. Ledbetter

APPENDIX 1
SIGNIFICANT HAZARDS REVIEW

Overview of the Individual 10 CFR 50.92 Evaluations of the Proposed ATTS Related Technical Specification Changes for the Edwin I. Hatch Nuclear Plant-Unit 2

The proposed Technical Specification changes which Georgia Power Company is proposing for use with the new ATTS currently being installed at Hatch 2 include new instrument trip setpoints/allowable values and surveillance intervals which take credit for the advantages that the new devices have over those currently installed at the plant, in terms of setpoint drift and instrument accuracy. In addition to these types of revisions this submittal also proposes a number of other types of Technical Specification changes including the following:

- Changes to plant specific equipment identification (MPL) numbers as the result of new numbering which has been assigned to ATTS components.
- Changes which account for modifications to instrument loops or trip logic resulting from the new ATTS design.
- Changes which correct minor typographical or descriptive errors found in the Hatch 2 Technical Specifications during the safety review process for ATTS. The errors found do not necessarily affect sections covering requirements for ATTS components.
- Changes to the Technical Specification Bases Sections to correct existing errors and to update them with respect to the other proposed ATTS changes

All of these proposed modifications were based on the NRC and industry standards listed in Table 1 to this appendix, to the extent practicable. It should be noted that use of many of the documents in Table 1 go beyond the extent of commitments made by GPC, including those made in the Hatch 2 FSAR, and that their use in the design and implementation of ATTS does not represent an extension by GPC of these commitments to other plant systems which are designed to other criteria. In the case where conflicts arose between the requirements of the FSAR and those contained in the listed standards the requirements of Hatch 2 FSAR Sections 3.1 and 7.1.2 and also Appendix A were followed by GPC.

The individual 10 CFR 50.92 evaluations on the following pages when taken collectively provide a complete evaluation for significant hazards resulting from all of the proposed ATTS related license changes. Based on the conclusion of each of the individual reviews, which was that each type or grouping of changes did not result in a significant hazard as defined in 10 CFR 50.92, GPC has determined that the same conclusion is valid for this entire license change proposal.

10 CFR 50.92 Evaluation for the Proposed Changes to the Technical Specifications as a Result of the Installation of the Analog Transmitter Trip System for Edwin I. Hatch Nuclear Plant-Unit 2

Georgia Power Company (GPC) has reviewed the requirements of 10 CFR 50.92 as they relate to the proposed Technical Specifications changes due to the installation of the Analog Transmitter Trip System (ATTS). ATTS replaces the pressure, level, and temperature switches in the reactor protection system and emergency core cooling system (ECCS) with analog sensor/trip unit combinations. The system is designed to improve sensor intelligence and reliability, while still providing continued monitoring of critical parameters and performing the intended basic logic function. Since the ATTS instrumentation is superior in design to the mechanical switches currently used at Plant Hatch, certain surveillance intervals may be extended without any significant effect on the expected magnitude of sensor drift or frequency of instrument malfunction. GPC proposes to change the surveillance requirements for the ATTS instrumentation to once per shift for channel checks, once per month for channel functional tests, and once per operating cycle for channel calibrations. These proposed surveillance requirements were previously approved on a generic basis for ATTS equipment by the Nuclear Regulatory Commission (NRC) review of the General Electric Company topical report NEDO-21617-A. Additional changes to the nomenclature used in the Technical Specifications are included for clarification and consistency with this proposed change.

GPC has reviewed the proposed changes and considers them not to involve a significant hazards consideration for the following reasons:

- 1) The proposed surveillance requirement changes would not significantly increase the probability or consequences of an accident previously evaluated, because the new ATTS instruments have been demonstrated to be superior in design to the existing devices in terms of instrument inaccuracy and drift characteristics. In addition, the new setpoints have been rigorously calculated, assuming the proposed surveillance frequencies.
- 2) The proposed surveillance requirement changes would not create the possibility of a new or different accident from any accident previously evaluated, because the new surveillance intervals for ATTS were developed to be consistent with the Plant Hatch-Unit 2 FSAR descriptions.
- 3) The proposed surveillance requirement changes would not involve a significant reduction in a margin of safety, because the new surveillance requirements are tailored to the ATTS instruments, using the methodology of Regulatory Guide 1.105. In addition, the basis for the margins of safety, as described in the FSAR, have been maintained.

10 CFR 50.92 Evaluation for the Proposed Changes to the Technical Specifications Reactor Vessel Water Level - Low Low (Level 2) Trip Setpoint for Edwin I. Hatch Nuclear Plant-Unit 2

Georgia Power Company has reviewed the requirements of 10 CFR 50.92 as they relate to the proposed reactor vessel water level 2 trip setpoint Technical Specifications change. This proposed change lowers the level 2 trip setpoint/allowable value from -38 in. to -55 in., thus decreasing the number of plant transients by decreasing the number of HPCI/RCIC actuations due to normal operational perturbations in water level.

GPC has reviewed the proposed change and considers it not to involve a significant hazards consideration for the following reasons:

- 1) It will not significantly increase the probability or consequences of an accident previously evaluated, because a reevaluation of the FSAR analysis showed that the new setpoint in conjunction with the new ATTS instrumentation would still provide the same degree of plant protection as described in the FSAR.
- 2) It will not create the possibility of a new or different kind of accident from any accident previously evaluated, because the lowered setpoint is still within the bounds of the plant safety analysis and should decrease the number of unnecessary ECCS actuation system challenges.
- 3) It will not involve a significant reduction in a margin of safety, because the setpoint still performs its intended safety function, as described in the FSAR. In addition, the calculations which determined the new setpoint took credit for the improved drift characteristics of the ATTS instruments and the criteria of Regulatory Guide 1.105.

a. See subsection 4B.1 (page 4-2) for discussion of proposed changes.

10 CFR 50.92 Evaluation for the Proposed Changes to the Technical Specifications due to the Deletion of the High Drywell Pressure Signal for Residual Heat Removal (Shutdown Cooling Mode), Reactor Pressure Vessel (RPV) Head Spray Valves, and Reactor Water Cleanup Isolation for Edwin I. Hatch Nuclear Plant-Unit 2

Georgia Power Company has reviewed the requirements of 10 CFR 50.92 as they relate to the proposed changes to the Technical Specifications due to the deletion of the high drywell pressure signal for residual heat removal (RHR) (shutdown cooling mode), RPV head spray valves, and RWCU isolation. The purpose of this change is to stop small steam leaks in the drywell from preventing operation of the RHR and RWCU systems during the shutdown cooling mode, thereby prohibiting an acceptable normal shutdown procedure.

GPC has reviewed this proposed change and considers it not to involve a significant hazards consideration for the following reasons:

- 1) It will not significantly increase the probability or consequences of an accident previously evaluated; because the requirements of 10 CRF 100 are still met, and the Appendix K calculations are not affected.
- 2) It will not create the possibility of a new or different kind of accident from any accident previously evaluated, because the deletion of the drywell pressure isolation is only being made on closed-loop systems. In addition, GPC has determined that the reactor vessel low water level trip function which isolates the shutdown cooling mode of RHR and RWCU is adequate for reactor protection. Furthermore, this change does eliminate the possibility for isolation of the shutdown cooling system, due to high drywell pressure, during periods when its function is essential for adequate decay heat removal.
- 3) It will not involve a significant reduction in a margin of safety, because the high drywell pressure isolation has little effect in preventing coolant losses and presently hinders the operability of the RHR shutdown cooling systems during certain plant scenarios.

a. See subsection 4B.2 (page 4-3) for discussion of proposed changes.

10 CFR 50.92 Evaluation for the Proposed Changes to the Technical Specifications due to the Lowered Water Level Trip Setpoint for Isolation of Reactor Water Cleanup and Secondary Containment, and Starting of Standby Gas Treatment System for Edwin I. Hatch Nuclear Plant-Unit 2

Georgia Power Company has reviewed the requirements of 10 CFR 50.92 as they relate to the proposed changes to the Technical Specifications due to the lowered water level trip setpoint for isolation of RWCU and secondary containment, and starting of the standby gas treatment system (SGTS). This change proposes to lower the water level trip setpoint for isolation of RWCU and secondary containment, and startup of the standby gas treatment system (SGTS) from level 3 to level 2. A reactor scram from normal power (50-percent rated) usually results in a reactor vessel water level transient due to a void collapse that causes RWCU isolation at level 3. This usually results in the dropping of the cleanup filter cake and added radwaste processing. These problems may be avoided by lowering RWCU isolation to level 2. Lowering the SGTS actuation and secondary containment isolation from level 3 to level 2 reduces the potential for spurious isolations.

GPC has reviewed the proposed changes and considers them not to involve a significant hazards consideration for the following reasons:

- 1) They will not significantly increase the probability or consequences of an accident from any accident previously evaluated, because the FSAR ECCS analysis already assumes SGTS initiation at level 2. Secondary containment requires a functioning train of SGTS for full effectiveness, and isolation of the containment building is assumed to be simultaneous with SGTS initiation in the FSAR analysis. In addition, the changes will reduce operability problems associated with RWCU and secondary containment isolations.
- 2) They will not create the possibility of a new or different kind of accident from any accident previously evaluated, because the lower setpoint is within the bounds of the FSAR analysis and will not change the basic functions of these trips.
- 3) They will not involve a significant reduction in a margin of safety, because these trips still perform their intended functions, as described in the FSAR.

a. See subsection 4B.3 (page 4-4) for discussion of proposed changes.

10 CFR 50.92 Evaluation for the Proposed Changes to the Technical Specifications due to the Deletion of Ambient Temperature Loops in the Leak Detection System for Edwin I. Hatch Nuclear Plant-Unit 2

Georgia Power Company has reviewed the requirements of 10 CFR 50.92 as they relate to the proposed change to the Technical Specifications due to the deletion of ambient temperature loops from the leak detection system for the Reactor Water Clean-Up pump rooms (two) and heat exchanger room. As part of the ATTS modification, the change proposes to use the hot leg of the differential temperature sensor for the high ambient temperature trip rather than using an independent trip element and trip device. This arrangement may cause slight changes in the sensitivity of the leak detection system, depending upon the heating, ventilation, and air-conditioning (HVAC) design, but it will not defeat the intended function of the system. In general, this new arrangement will create more reliable leakage detection since the HVAC system will be drawing air across the RTDs. Therefore, there is no possibility of the sensors being located in a dead air space relative to certain break locations in the room. The proposed Technical Specifications revisions will reference the trip unit loop from which the ambient temperature trip is taken in place of the existing ambient temperature trip instrument.

GPC has reviewed the proposed changes and considers them not to involve a significant hazards consideration for the following reasons:

- 1) The modification will not significantly increase the probability or consequences of an accident previously evaluated, because this change is consistent with the applicable criteria listed in sections 3.1 and 7.1.2 and in Appendix A of the FSAR and in general, is more reliable in detecting leaks.
- 2) The modification will not create the possibility of a new or different accident from any accident previously evaluated, because plant trip logic remains unchanged, and the current single-failure criteria are maintained.
- 3) The modification will not involve a significant reduction in a margin of safety, because single-failure criteria and the level of redundancy for each trip function are maintained. Also, in general, the new location of the sensors will be more reliable for detecting leaks.

a. See subsection 4B.4 (page 4-5) for discussion of proposed changes.

10 CFR 50.92 Evaluation for the Proposed Changes to the Technical Specifications due to the Deletion of Drywell Pressure Sensors Ell-N011A, B, C, D for Edwin I. Hatch Nuclear Plant-Unit 2

Georgia Power Company has reviewed the requirements of 10 CFR 50.92 as they relate to the proposed change to the Technical Specifications due to the deletion of drywell pressure sensors Ell-N011A, B, C, D. This change proposes to make the drywell pressure sensor configuration consistent with that for the water level 2 and 3 sensors. Drywell pressure sensors Ell N010A, B, C, D may be used to provide signals for all four systems of the ECCS and still maintain single-failure criteria. This change deletes instruments Ell-N011A, B, C, D and transfers their associated trip function (Core Spray, RHR and HPCI high drywell pressure) to instruments Ell-N010A, B, C, D. Since these instruments (Ell-N010A, B, C, D) are being incorporated into the ATTS modification, the instrument number in the Technical Specifications was changed to Ell-N694A, B, C, D. It should be noted that there is an editorial error in Specification Table 3.3.3-1, item 4a; this item should be listed as Ell-N010A, B, C, D. The Technical Specifications revision involves changing the instrument numbers from Ell-N010A, B, C, D to Ell-N694A, B, C, D.

GPC has reviewed the proposed change and considers it not to involve a significant hazards consideration for the following reasons:

- 1) It will not significantly increase the probability or consequences of an accident previously evaluated, because this change is consistent with applicable criteria listed in sections 3.1 and 7.1.2 and in Appendix A of the FSAR.
- 2) It will not create the possibility of a new or different accident from any accident previously evaluated, because the basic trip functions and trip system redundancies, as described in the FSAR, are unchanged.
- 3) It will not involve a significant reduction in a margin of safety, because single-failure criteria and the level of redundancy for each trip function are maintained, and the new surveillance requirements are consistent with the capabilities of the new ATTS instrumentation.

a. See subsection 4B.5 (page 4-8) for discussion of proposed changes.

10 CFR 50.92 Evaluation for the Proposed Trip Setpoint/Allowable Value Modifications to the Technical Specifications for Edwin I. Hatch Nuclear Plant-Unit 2

Georgia Power Company has reviewed the requirements of 10 CFR 50.92 as they relate to the proposed miscellaneous trip setpoint/allowable value modifications to the Technical Specifications. The purpose of this change is to update the Technical Specifications trip setpoints for instruments being replaced by the ATTS. Since the time that the original setpoints were determined, a better calculational method has been developed. This proposed change uses Regulatory Guide 1.105 methodology in updating the setpoints for the instruments being replaced with the new ATTS units, and takes credit for the improved error and drift characteristics of the new system. This change replaces the trip setpoints listed in the Technical Specifications with these newly generated allowable values.

GPC has reviewed the proposed changes and considers them not to involve a significant hazards consideration for the following reasons:

- 1) They will not significantly increase the probability or consequences of an accident previously evaluated, because the new ATTS instruments are of a superior design as compared to the current instruments. In addition, the setpoints were determined using the criteria of Regulatory Guide 1.105, and therefore still meet the FSAR criteria.
- 2) They will not create the possibility of a new or different kind of accident from any accident previously evaluated, because the basic trip functions, as described in the FSAR, are unchanged.
- 3) They will not involve a significant reduction in a margin of safety, because for most trips, the original design basis was maintained. Any new design bases were fully addressed with regard to the FSAR requirements. In addition, the criteria of Regulatory Guide 1.105 were used in the calculation of the new setpoints.

a. See subsection 4B.6 (page 4-9) for discussion of proposed changes.

10 CFR 50.92 Evaluation for the Proposed Changes to the Technical Specifications due to the Reactor Vessel Water Level - High (Level 8) Trip Instrumentation Modification for Edwin I. Hatch Nuclear Plant-Unit 2

Georgia Power Company has reviewed the requirements of 10 CFR 50.92 as they relate to the proposed changes to the Technical Specifications due to the reactor vessel water level - high (level 8) trip setpoint change. This change proposes to replace the current instruments with new ATTS units. The ATTS instruments are superior in design as compared to the mechanical switches currently used at Plant Hatch. Using the criteria of Regulatory Guide 1.105, the setpoint/allowable value will be lowered from 58 in. to 56.5 in.

GPC has reviewed this change and considers it not to involve a significant hazards consideration, because it represents a more conservative and restrictive Technical Specification requirement than that which is currently in place. Consequently, this change is consistent with Item (ii) of the "Examples of Amendments that are Considered Not Likely to Involve Significant Hazards Considerations" listed on page 14,870 of the April 6, 1983, issue of the Federal Register and will not result in a significant hazards consideration.

a. See subsection 4B.7 (page 4-19) for discussion of proposed changes.

10 CFR 50.92 Evaluation for the Proposed Change to the Technical Specifications as a Result of the Elimination of the Reactor Pressure Permissive to the Bypass of the MSIV Closure Signal Due to Low Condenser Vacuum for Edwin I. Hatch Nuclear Plant-Unit 2

Georgia Power Company has reviewed the requirements of 10 CFR 50.92 as they relate to the proposed change to the Technical Specifications as a result of the elimination of the reactor pressure permissive to the bypass of the main steam isolation valve (MSIV) closure signal due to low condenser vacuum. The change proposes to delete the reactor steam dome pressure permissive which prevents the group 1 isolation valves from being bypassed on a low condenser vacuum isolation at reactor pressure above the scram setpoint. With the permissive deleted, the operator may open the valves from a hot pressurized condition before clearing a scram. Currently the operator must clear the scram signal prior to opening the MSIVs when in this condition. By eliminating this permissive, the plant protective features and, therefore, plant safety are not compromised in any manner.

GPC has reviewed the proposed changes and considers them not to involve a significant hazards consideration for the following reasons:

- 1) The modification will not significantly increase the probability or consequences of an accident previously evaluated, because the permissive being deleted does not perform a safety function.
- 2) The modification will not create the possibility of a new or different kind of accident from any accident previously evaluated, because the elimination of this permissive has no effect on the reactor protection system. Also, the manual bypass of MSIV closure is performed only when the reactor is not operating at full power.
- 3) The modification will not involve a significant reduction in a margin of safety, because the permissive being deleted does not perform a safety function.

a. See subsection 4B.8 (page 4-20) for discussion of proposed changes.

TABLE 1

ATTS CONFORMANCE CRITERIA

IEEE STANDARDS

IEEE-279-1971: Criteria for Protection System for Nuclear Power Generating Station

IEEE-323-1974: Qualifying Class 1E Equipment for Nuclear-Power Generating Stations

IEEE-336-1977: Installation, Inspection and Testing Requirements for Instrumentation and Electrical Equipment During the Construction of Nuclear Power Generating Stations

IEEE-338-1977: Criteria for Periodic Testing of Nuclear Power Generating Station Safety Systems

IEEE-344-1975: Recommended Practices for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations

IEEE-397-1977: Application of the Single-Failure Criterion to Nuclear Power Generating Station Class 1E Systems

IEEE-420-1973: Trial-Use Guide for Class 1E Control Switchboards for Nuclear Power Generating Stations

IEEE-494-1974: Method for Identification of Documents Related to Class 1E Equipment and Systems for Nuclear Power Generating Stations

NRC REGULATORY GUIDES

Regulatory Guide 1.22: Periodic Testing of Protection System Actuation Functions

Regulatory Guide 1.28: Quality Assurance Program Requirements

Regulatory Guide 1.29: Seismic Design Classification

Regulatory Guide 1.30: Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electrical Equipment

Regulatory Guide 1.38: Quality Assurance Requirements for Packing, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants

Regulatory Guide 1.47: Bypassed and Inoperable Status Indication for Nuclear Power Plant Safety Systems

TABLE 1

Regulatory Guide 1.53: Application of the Single-Failure Criterion to Nuclear Power Plant Protection Systems

Regulatory Guide 1.61: Damping Value for Seismic Design of Nuclear Power Plants

Regulatory Guide 1.62: Manual Initiation of Protective Actions

Regulatory Guide 1.64: Quality Assurance Requirements for the Design of Nuclear Power Plants

Regulatory Guide 1.68: Initial Test Program for Water-Cooled Reactor Power Plants

Regulatory Guide 1.75: Physical Independence of Electrical Systems

Regulatory Guide 1.89: Qualification of Class 1E Equipment for Nuclear Power Plants

Regulatory Guide 1.92: Combining Modal Responses and Spatial Components in Seismic Response Analysis

Regulatory Guide 1.97: Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident

Regulatory Guide 1.100: Seismic Qualification of Electric Equipment for Nuclear Power Plants

Regulatory Guide 1.131: Qualification Tests of Electric Cables, Field Splices, and Connections for Light-Water-Cooled Nuclear Power Plants

NRC REGULATIONS

Regulation 10CFR21: Reporting of Defects and Noncompliance

Regulation 10CFR50.49: Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants

Regulation 10CFR50.55a: Issuance, Limitation and Conditions of Licenses and Construction Permits (CP) - Codes and Standards

Regulation 10CFR50, Appendix A: General Design Criteria (GDC) for Nuclear Power Plants

TABLE 1

GDC 1:	Quality Standards and Records
GDC 2:	Design Basis for Protection Against Natural Phenomena
GDC 5:	Sharing of Structures, Systems, and Components
GDC 10:	Reactor Design
GDC 13:	Instrumentation and Control
GDC 20:	Protection System Functions
GDC 21:	Protection System Reliability and Testability
GDC 22:	Protection System Independence
GDC 23:	Protection System Failure Mode
GDC 24:	Separation of Protection and Control Systems
GDC 29:	Protection Against Anticipated Operational Occurrences