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Executive Department



Georgia Power

the southern electric system

SL-4501  
0208I  
X7GJ17-H220

April 29, 1988

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  
ADDITIONAL INFORMATION REGARDING  
IMPLEMENTATION OF 10 CFR 50.62 (ATWS RULE)

Gentlemen:

NRC's letter to Georgia Power Company (GPC), received February 9, 1988, requested additional information in regard to GPC's implementation of modifications required by 10 CFR 50.62, which had been previously described in GPC's letter of March 4, 1987. Following are the items of additional information requested by NRC, and GPC's responses:

NRC Item 1: It is the staff position that BWR/4 or Hatch designs must be upgraded by the addition of a second trip coil in each of the recirculation loops MG field breakers. The logic to each MG set "A" and "B" generator field breaker is to be one-out-of-two (level) or one-out-of-two (pressure). Please provide the information required by sections 7.0 and 7.1 of the Safety Evaluation of Topical Report (NEDE-31096-P), to justify a design which is different from the reference design.

GPC Response: Section 7.0 of the reference SER requires utilities that have not upgraded their RPT system from the original design to demonstrate that their present design can perform its function in a reliable manner equivalent to the Monticello design or modified Hatch design. The ATWS regulation itself only requires that a "reliable" RPT system be utilized. GPC will agree to modify the actuation logic such that both recirculation pumps will trip on a "one out of two" or "two out of two" high pressure or low level signal. However, for reasons which follow, GPC does not agree that a second trip coil should be added to the recirculation pump MG set generator field breaker.

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A quantitative analysis was previously performed and presented to NRC by Carolina Power and Light Company (CP&L), for its Brunswick plant, which demonstrates that RPT reliability is not increased by the addition of a second trip coil to the MG set generator field breaker. This analysis is documented in CP&L's letters to NRC of April 14, 1987, July 22, 1987 and November 13, 1987. The conclusions of the analysis are based on information that the generator field breaker is less reliable than the MG motor main breaker, and that addition of the second trip coil to the generator field breaker does not significantly increase reliability of this breaker due to the predominance of other failure modes. We understand that NRC and its contractors are currently reviewing the CP&L analysis. GPC has reviewed this analysis and believes that CP&L's conclusions regarding RPT reliability (with and without the addition of the second field breaker trip coil) are applicable to Plant Hatch. This is due to the fact that these analyses are based to a large extent on generic failure rate data and are specific to the RPT system, which is the same design at Hatch and Brunswick.

Moreover, absent any analysis, the requirement to add redundant trip coils to the MG set generator field breaker is in conflict with 10 CFR 50.62. The Statement of Considerations for the Final ATWS Rule, published in the Federal Register (Volume 49, Number 124, page 26040) states:

"In view of the redundancy provided in existing reactor trip systems, the equipment provided by this amendment does not have to be redundant within itself."

Based on the above referenced analysis and the clarification provided in conjunction with the ATWS rule, GPC does not believe that redundant trip coils should be required for the recirculation pump MG set generator field breaker.

NRC Item 2: Describe the devices which isolate the ARI from the ATTS (identified as trip relays in your submittal).

GPC Response: The relays identified as trip relays in GPC's report are Agastat relays located in the non Class 1E sections of Analog Transmitter Trip System (ATTS) panels. These relays were originally installed as spares during ATTS implementation. A schematic depicting the subject relays is provided as Figure 1.

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NRC Item 3: Please identify the physical location of the ARI and RPT logic and describe their independence from other plant logic systems.

GPC Response: The ARI logic panels are seismically mounted in the lower elevation (112') of the Control Building. RPS and RPT logic panels are located in the control room at the 158' elevation. The Control Building is physically separated from the Turbine Building by radiation shield walls, fire walls and fire doors. All ARI hardware is qualified for anticipated operational occurrences. New terminal blocks are provided in the ATTS panels in the control room for termination of the ARI control cables. Initiation logic from the ATTS system is provided by utilizing existing IE relays and additional trip unit slaves which have been added. The IE relays provide electrical isolation from RPS. The ARI system is powered from the plant diesel battery system. This power source is independent from RPS power sources. Fuses provide ARI electrical isolation from this Class IE power source. ARI signals are taken from ECCS sensors which are independent from RPS sensors.

Appendix A of the NRC SER addressing 10 CFR 50.62 provides a checklist for plant specific review of ARI. Plant Hatch complies with all items on this checklist with the exception of Item 10.(b), which addresses ARI bypass features. ARI bypass is not necessary for testability of the Plant Hatch ARI system at power due to the configuration of the logic (see next response).

NRC Item 4: Describe the system design which permits the test/calibration of the system logic while the plant is in power operation.

GPC Response: The Plant Hatch ARI uses a redundant 2 out of 2 logic arrangement. This allows maintenance, test or calibration of the system logic and instrumentation up to but not including the final trip devices. 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 do occur during sensor maintenance, either the remaining redundant active level channel or pressure channel would be available to initiate the system.

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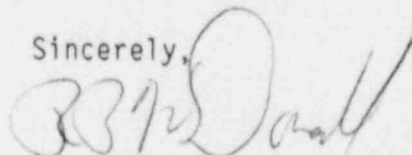
NRC Item 5: Identify if bypass switching is utilized in the ARI and RPT systems and if employed describe its conformance with the criteria used in the RTS.

GPC Response: See GPC response to NRC Item 4 above.

NRC additionally inquired verbally as to whether GPC was using ATTS trip units of diverse manufacturer for the ARI and RPS functions. GPC is using the most reliable trip units available for performance of these functions. As such, the trip units are of the same manufacturer. GPC is participating in a BWR Owners Group activity to address the generic question of ARI trip unit diversity.

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

Sincerely,



R. P. McDonald  
Executive Vice President,  
Nuclear Operations

REB/lc

Enclosure: Figure 1

c: Georgia Power Company  
Mr. J. T. Beckham, Jr., Vice President - Plant Hatch  
Mr. L. T. Gucwa, Manager Nuclear Safety and Licensing  
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  
Dr. J. N. Grace, Regional Administrator  
Mr. P. Holmes-Ray, Senior Resident Inspector - Hatch

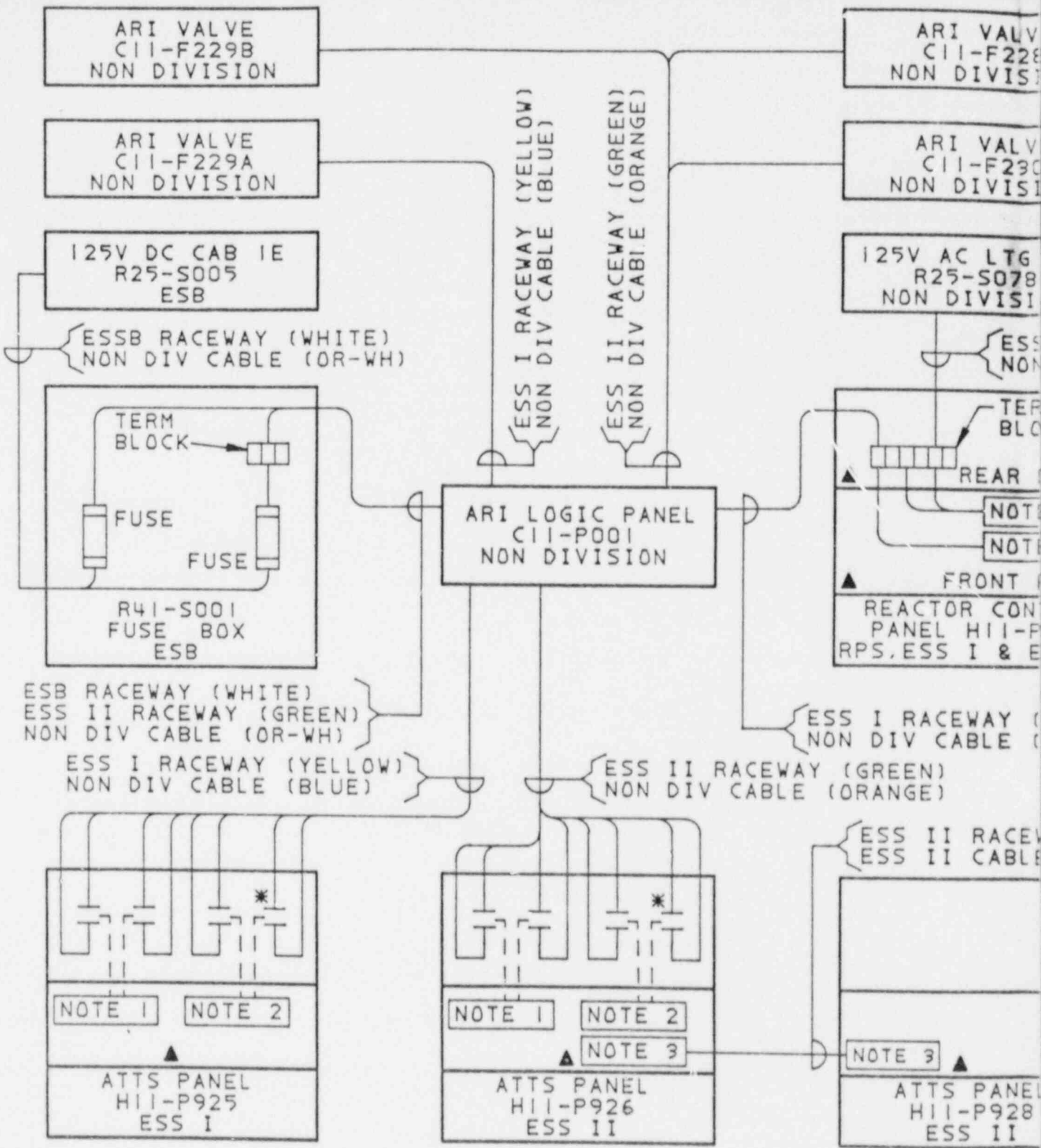
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ENCLOSURE

PLANT HATCH - UNITS 1, 2  
MRC DOCKETS 50-321, 50-366  
OPERATING LICENSES DPR-57, NPF-5  
ADDITIONAL INFORMATION REGARDING  
IMPLEMENTATION OF 10 CFR 50.62 (ATWS RULE)

FIGURE 1

Schematic depicting isolation of ARI from ATTS



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR. 1	APPR. 2	APPR. 3	APPR. 4
A	11-21-86	BGT	EEC	ISSUED FOR DCR 86-234	RBV	RFM	DE	

**FOR INFORMATION ONLY**

NOTES:

1. EXISTING LOW LVL SIGNAL USED FOR ARI INITIATION LOGIC (2 CHANNELS).
2. EXISTING HIGH PRESSURE SIGNAL USED FOR ARI INITIATION LOGIC (2 CHANNELS).
3. HPCI TORUS HIGH WATER LEVEL TRIP UNITS AND INCOMING CABLE FROM CAP PRESS XMTRS E41-N062B AND E41-N062D ARE RELOCATED FROM H11-P926 TO H11-P928 WHICH PROVIDES SPACE IN H11-P926 FOR SLAVE TRIP UNITS REQUIRED FOR ARI.
4. INSTALL ANNUNCIATOR WITH "ACK", "TEST" AND "RESET" PUSHBUTTONS DEDICATED TO ARI.
5. INSTALL MANUAL CONTROL SWITCHES AND SYSTEM STATUS LIGHTS FOR ARI.
6. NON IE SECTION OF PANEL IS INDICATED BY \*.
7. IE SECTION OF PANEL IS INDICATED BY ▲.
8. MAINTAIN NON-DIV/ESSI/ESSII SEPARATION WITH-IN PANELS PER DWG A-17361 SECT 3.3 (SH.24 & 25).

E  
ON

E  
ON

CAB  
ON

M  
CK

PANEL

E 4

E 5

PANEL

FROL  
603  
SS II

II RACEWAY (GREEN)  
DIV CABLE (ORANGE)

(YELLOW)  
(BLUE)

AY (GREEN)  
(GREEN)

TI  
APERTURE  
CARD

Also Available On  
Aperture Card

CAD  
APPLICON ADS-02

SKETCH NUMBER	REV
SE-86-234-104	A
REF DWG NUMBER	REV
N/A	

WORK THIS DWG WITH SE-86-234-49

PPR. 5 REMARKS

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Southern Company Services, Inc. FOR GEORGIA POWER COMPANY

HATCH-UNIT NO.1 ATWS-ARI  
SEPARATION CRITERIA

DESIGNED <i>RWBairley</i>	DRAWN BGT
TYPED	CHECKED <i>E.L. Lamm</i>
SCALE NO SCALE	CONTINUED ON SHEET
PROJ. I.D.	DRAWING NUMBER
	SHEET
	REV.