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NED-84-512

September 27, 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  
SUPPLEMENTAL INFORMATION REGARDING  
RESIDUAL HEAT REMOVAL SERVICE WATER SYSTEM PUMPS

Gentlemen:

Georgia Power Company (GPC), pursuant to the request of Mr. J. A. Olshinski, Director, Division of Reactor Safety, Region II Office of Inspection and Enforcement, U. S. Nuclear Regulatory Commission, herein submits the following information to supplement our letter NED-84-510 dated September 26, 1984 regarding the operability of the Residual Heat Removal Service Water (RHRSW) pumps:

1. The effort to replace questionable bolts as of 8:00 a.m., September 27, 1984, is on a schedule ahead of the commitments made in our September 26, 1984 letter. RHRSW pump 2E11-C001B has had the bolts in question replaced and is reinstalled. 2E11-C001A is expected to be returned to service after bolt replacement by noon today. RHRSW pump 2E11-C001D has been removed from service and is in the process of bolt replacement. The last of the four RHRSW pumps, 2E11-C001C will undergo bolt replacement when pump A has been restored to service. There are no known obstacles which will prevent replacement of the remaining questionable bolts by the dates committed to in our earlier correspondence. If any situation arises which will preclude our meeting our stated commitment, appropriate NRC Region II personnel will be notified at the first opportunity.

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Add: J.A. Olshinski  
Region II

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2. Subsequent to the submittal of letter NED-84-510, GPC management learned that sufficient bolts to modify all four RHRSW pumps were not, in fact, on the plant site as was stated in that letter. The misunderstanding on this point originated in the invoicing and transmittal of the packaged bolts. However, an adequate supply of suitable bolts has been located and has been procured on an expedited basis by use of dedicated aircraft. Delivery is expected to support the committed schedule. Additionally, a clarification is required regarding the material of the replacement bolts currently being installed. SA-354 Grade BD bolts were not available in a time frame to support the early effort on 2E11-C001 A and B. Johnston Pump Company supplied a substitute material, A490 Grade BD, for the SA 354 Grade BD material. This substitute material is acceptable under the provisions of ASME Section II, Part A, "Requirements for SA 354 Bolting Material", 1983 edition for use in this application. The use of this bolt material has been analyzed by the pump vendor, Johnston Pump Company, and verified to be fully acceptable. RHRSW pumps 2E11-C001C and D will be rebolted with acceptable bolts manufactured from either A490 Grade BD or SA 354 Grade BD.
3. A review has been conducted of the Plant Hatch Unit 2 Technical Specifications to determine if any secondary impacts on plant operations would result from the inoperability of the RHRSW pumps. Two such Limiting Conditions for Operations (LCOs) were found--3.6.2.2(b), Suppression Pool Cooling and 3.9.12(a), Reactor Coolant Circulation During Refueling Operations. LCO 3.6.2.2(b) calls for action which is similar to and bounded by LCO 3.7.1.1(4) discussed in our September 26, 1984 letter. LCO 3.9.12(a) only applies when the plant is in the refueling mode and therefore is not a concern for continued plant operations. These LCOs and the Applicability Statement 3.0.3 are the only known plant Technical Specifications to be of applicability, to our knowledge and belief. In each case the action required is bounded by the discussion contained in our September 26, 1984 letter.
4. In order to minimize the possibility of any abnormal plant transient which would require the use of the RHRSW pumps, the Plant Hatch Deputy General Manager (acting for the General Manager) issued a memorandum on September 25, 1984 to the Manager of Operations and the Superintendent of Operations which, in part, called for the following:

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- o The reactor remained in operation (the reactor will continue in operation as long as plant conditions permit);
- o All load increases were suspended immediately;
- o All startup testing was suspended; and
- o All work which would significantly increase the risk of a plant trip, with the exception of the required surveillance tests, was suspended.

These actions were reviewed and concurred with by the Plant Review Board. A malfunction of a recirculation pump controller resulted in a load decrease from approximately 700 mwe to 342 mwe during the evening of the 26th. Load level has been maintained at the reduced level in accordance with our commitment to limit transients whenever possible. These operating restrictions will be rescinded upon restoration of one RHRSW pump per subsystem loop to a known acceptable operability condition through replacement of questionable bolts.

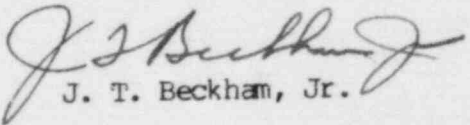
5. A standing order was issued on September 26, 1984, which gave guidance to plant personnel regarding preferred plant operations in the event of a reactor trip. Briefly, the Standing Order called for the plant to be maintained in a hot standby condition following a reactor scram, if plant circumstances would allow. Further, the operation of the RHRSW pumps was prohibited unless absolutely necessary to maintain the reactor in a safe condition or to protect plant equipment and the general public. It noted that the decision to operate the pumps should come from the Operations Supervisor on shift. This order should minimize the possibility, to the extent possible, of the operation of the RHRSW pumps. These operating restrictions will be rescinded upon restoration of one RHRSW pump per subsystem loop to a known acceptable operability condition through replacement of questionable bolts.
6. As noted in our September 26, 1984 letter, in the event of an Operating Basis Earthquake (OBE) the stresses on the pump column will be greater for an operating pump than for a non-operating pump. Since the submittal of that letter, we have received a more detailed quantification of the stresses seen in the OBE and Design

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Basis Earthquake (DBE) for operating and non-operating pumps. A summary of these stresses is provided in the enclosed Table 1. It can be seen that the allowable stresses for the material which is in question (SA-193) are greater than the seismic loads for non-operating pumps in the event of an OBE, as noted in our September 26, 1984 letter. Further, the table shows that the material used in the replacement bolts (SA-354/A490) has an allowable stress well in excess of the seismic loadings on the pumps in the operating or non-operating mode in the event of an OBE. If one compares the Relocation Analysis OBE loading from line 1 of the table to the listed allowable for the SA-354/A490 material, the multiplier of 1.5 should be applied for the flat face flange assumption and the allowable becomes 45,000psi.

Should you require any further clarification or amplification regarding the Plant Hatch RHRSW pumps, please contact my office.

Yours very truly,

  
J. T. Beckham, Jr.

WEB/mb

Enclosure

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



TABLE 1

PLANT HATCH-UNIT 2 RHR SERVICE WATER PUMPS COLUMN STRESSES

<u>Loadings on Bolts (in psi)</u>	<u>DBE</u>	<u>OBE</u>
Relocation Analysis for flat faced flange Total Loads RHRSW Pumps Operating - Note 1	45,361	39,181
Total Code Allowables (SA-193) Per Original Analysis - Note 2	27,000	22,500
Seismic Loads - Note 3 RHRSW Pumps Not Operating	19,334	17,691
1984 Analysis for raised face flange Revision Completed 9/26/84 - Note 4	25,206	19,239
Total Code Allowables (SA-193) Per Revised Analysis - Note 5	27,000	15,000
Total Code Allowables (SA-354/A490) New Bolt Material - Note 6	112,500	30,000

Notes:

1. Analysis revised to reflect relocation of seismic support assuming flat face flanges.
2. Assuming SA-193 Grade B8 bolts 15,000 psi allowable loads, 30,000 psi yield per ASME Section III 1971, with 1.5 x allowable stresses for OBE and 0.9 x yield strength for DBE. (multiplier of 1.5 corresponds to use of flat face flanges)
3. Seismic loads are total bolt loadings with RHRSW pump in a non-operating pump only, not at rated pressure.
4. Analysis revised to reflect raised face flange connection (which Plant Hatch has) in lieu of previously assumed flat faced flange connection. Flat faced flanges were originally assumed for a more conservative analysis.
5. Assuming SA-193 Grade B8 bolts, 15,000 psi allowable loads, 30,000 psi yield per ASME Section III 1971, with 1.0 x allowable stress for OBE and 0.9 x yield for DBE. (multiplier of 1.0 corresponds to use of raised face flange)
6. Assuming SA-354 grade BD or A490 grade BD, per ASME Section II Part A, with 30,000 psi allowable and 125,000 psi yield, with 1.0 x allowable stress for OBE and 0.9 x yield for DBE. (multiplier of 1.0 corresponds to use of raised face flange)