

Georgia Power Company  
333 Piedmont Avenue  
Atlanta, Georgia 30308  
Telephone 404 526-7020

Mailing Address:  
Post Office Box 4545  
Atlanta, Georgia 30302

J. T. Beckham, Jr.  
Vice President and General Manager  
Nuclear Generation



Georgia Power

the southern electric system

SL-1044c  
0641C

September 9, 1986

Director of Nuclear Reactor Regulation  
Attention: Mr. D. Muller, Project Director  
BWR Project Directorate No. 2  
Division of Boiling Water Reactor Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

NRC DOCKETS 50-321, 50-366  
OPERATING LICENSES DPR-57, NPF-51  
EDWIN I. HATCH NUCLEAR PLANT UNITS 1, 2  
TECHNICAL SPECIFICATIONS CHANGES  
PERTAINING TO RIVER WATER LEVEL

Gentlemen:

Georgia Power Company proposes an amendment to the Technical Specifications (Appendix A to the Operating Licenses) for Plant Hatch Units 1 and 2. The proposed amendment pertains to the minimum river level required for continued plant operation. The revised Technical Specifications are consistent with the Standard Technical Specifications in that the minimum allowable river level will be based upon the requirements for safe shutdown of the plant.

The proposed amendment would make the following changes to the Technical Specifications:

1. Specify the water level in the intake structure necessary to assure Plant Service Water (PSW) system operability and the minimum river level for safe shutdown of the plant.
2. Provide an alternate requirement for determination of equivalent river level when a temporary weir is in place.
3. Change the level at which an increased frequency of river level surveillance is required.
4. For Unit 1, remove the throttling requirements for the PSW system pumps.
5. Amend the Bases to reflect the above changes.

8609260209 860709  
PDR ADOCK 05000321  
P PDR

Rec'd w/checked 8/150-00

A00  
/1

Director of Nuclear Reactor Regulation  
Attention: Mr. D. Muller, Project Director  
BWR Project Directorate No. 2  
September 9, 1986  
Page Two

The Plant Review Board and the Safety Review Board subcommittee have reviewed the proposed changes.

Enclosure 1 provides a detailed description of each proposed change and the basis for the change.

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.

Payment of a filing fee in the amount of one hundred and fifty dollars is enclosed.

Georgia Power is presently implementing contingency actions to assure the continued availability of necessary river stage at the Plant Hatch intake structure. These contingencies include providing a supplemental flow from upstream reservoirs and constructing a temporary weir across the Altamaha River, downstream of the intake structure, to increase the usefulness of available river flow.

Because the proposed amendments are considered to be vitally important to the continued availability of Plant Hatch for the generation of electricity during the periods of low river flow, Georgia Power Company has assigned a high priority to this submittal. Therefore, we request that the NRC also assign a high priority to the consideration of the proposed amendment. We are prepared to discuss the details of this request with your staff on an expedited basis.

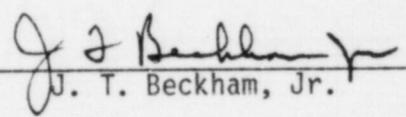
Pursuant to the requirements of 10 CFR 50.91, a copy of this letter and all applicable attachments will be sent to Mr. J. L. Ledbetter of the Environmental Protection Division of the Georgia Department of Natural Resources.

0641C

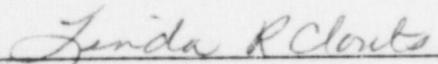
Director of Nuclear Reactor Regulation  
Attention: Mr. D. Muller, Project Director  
BWR Project Directorate No. 2  
September 9, 1986  
Page Three

Mr. J. T. Beckham, Jr. states that he is Vice President of Georgia Power Company and is authorized to execute this oath on behalf of Georgia Power Company, and that to the best of his knowledge and belief, the facts set forth in this letter are true.

GEORGIA POWER COMPANY

By:   
J. T. Beckham, Jr.

Sworn to and subscribed before me this 9th day of September 1986.

  
Notary Public  
Notary Public, Clayton County, Georgia  
Commission Expires Dec. 12, 1990

RDB/lc

Enclosures

c: Georgia Power Company  
Mr. J. P. O'Reilly  
Mr. H. C. Nix, Jr.  
GO-NORMS

U. S. Nuclear Regulatory Commission  
Dr. J. N. Grace, Regional Administrator  
Senior Resident Inspector

State of Georgia  
Mr. J. L. Ledbetter

ENCLOSURE 1

NRC DOCKETS 50-321, 50-366  
OPERATING LICENSES DPR-57, NPF-5  
EDWIN I. HATCH NUCLEAR PLANT UNITS 1, 2  
TECHNICAL SPECIFICATIONS CHANGES  
PERTAINING TO RIVER WATER LEVEL  
BASIS FOR CHANGES

The proposed amendment would make the following changes to the Technical Specifications:

1. Specify the water level in the intake structure necessary to assure Plant Service Water (PSW) system operability and the minimum river level for safe shutdown of the plant.
2. Provide an alternate requirement for determination of equivalent river level when a temporary weir is in place.
3. Change the level at which an increased frequency of river level surveillance is required.
4. For Unit 1, remove the throttling requirements for the PSW system pumps.
5. Amend the Bases to reflect the above changes.

The proposed amendment represents a revision of the basis for the Technical Specifications for PSW operability and minimum river level. The current Plant Hatch FSARs and Technical Specifications reflect the minimum water levels for full-power operation requirements of the PSW system, rather than the minimum river level which would ensure safe plant shutdown. Georgia Power Company believes that the appropriate basis is assuring that sufficient cooling capacity is available for continued operation of safety-related equipment during safe shutdown (long-term) conditions. Safe shutdown flow requirements for the PSW system are about one fifth of those required during full-power operation. Full-power operation requires 3 PSW pumps at approximately 7840 gpm each. Shutdown operation requires only one PSW pump at approximately 4500 gpm.

The current Plant Service Water Technical Specifications represent one of the few places where normal operational considerations serve as the basis for the Specification, rather than safe shutdown. If the change is implemented, decisions regarding continued plant operation would be based upon the real safety basis of the plant rather than upon full-power constraints. Note that the complementary changes to the Hatch FSARs will be made in the next annual revision, following your approval of the enclosed changes. Revisions will also be made to the Emergency Plan, as appropriate.

## ENCLOSURE 1 (Continued)

TECHNICAL SPECIFICATIONS CHANGES  
PERTAINING TO RIVER WATER LEVEL  
BASIS FOR CHANGES

The terms "river level" and "pump well level" appear to be used synonymously in the Hatch FSARs and the Technical Specifications. Therefore, the terminology requires the following clarification. The river and the pump well are separated by a fixed position trash rack and a traveling trash screen which remove debris from the water to prevent damage to the pumps. When the screen is clean, the river level and the pump well level are nearly the same. However, if debris accumulates on the screen, a difference between the level of the river and the level in the pump well can occur. It is more technically valid to measure the level in the pump well for pump operational considerations. A certain level above the pump suction is necessary for both net positive suction head (NPSH) and vortexing considerations for the protection of the pumps. Thus, a more certain measurement of the submergence at the pump provides a better assurance that the requirements for pump protection are being met.

Operational considerations may necessitate construction of a downstream weir, thus creating an artificially high river level at the intake structure and on the gauge located at the U.S. Route 1 bridge. To assure safe (long-term) shutdown of the plant, the true "natural" river level must be determined. Therefore, the proposed Technical Specification requires monitoring of the river level at a location not affected by the weir (during periods of operation with the weir in place) and correlated to the level in the pump well. The weir is currently being installed. The downstream gauge was installed and correlated to the gauge located at the U.S. Route 1 bridge prior to construction of the weir. Installation of the weir will not significantly increase the rate of siltation in the intake structure.

Also, river flow can be supplemented by upstream reservoirs. The reservoir used for supplemental flow is approximately 5 days upstream. In other words, from the time a change in supplemental flow at the reservoir until the time the effects of the change can be measured at the plant is approximately 5 days. Therefore, sufficient time exists to take action, if necessary, as a result of changing supplemental flow.

Operation at a reduced river level may slightly increase the head loss through the trash screen. However, this result will not impinge upon safe shutdown operation unless the level in the pump well falls below 59.9 ft mean sea level (msl). The differential temperature between the inlet water and the end of the discharge mixing zone is not expected to exceed any thermal limits or permits.

## ENCLOSURE 1 (Continued)

TECHNICAL SPECIFICATIONS CHANGES  
PERTAINING TO RIVER WATER LEVEL  
BASIS FOR CHANGES

The PSW pump vendor has specified the necessary level above the pump suction for both NPSH and vortexing considerations for rated conditions. This level is 48 in. above the suction for a rated flow from 4 PSW pumps of 8500 gpm each, which translates to a pump well level of 61.2 ft msl. The current Technical Specifications requirement is 61.7 ft msl river level for all conditions. For safe shutdown, only 1 pump is needed, and the flow requirements are reduced to about 4500 gpm. The pump well level needed to achieve shutdown operation is 59.9 ft. However, the proposed level in the Technical Specifications provides an additional margin of pump submergence above 59.9 ft to ensure availability of the ultimate heat sink (Altamaha River) for 30 days during low river flow periods.

Proposed Change 1:

In Technical Specification 3.5.I (Unit 1), change the words to read: "If the water level as measured in the pump well decreases to less than 60.7 feet (MSL)..." In Technical Specification 3.7.1.2.a (Unit 2), change the words to read: "The water level in the pump well of the intake structure greater than or equal to 60.7 feet mean sea level, and..."

Basis for Proposed Change 1:

Current practice is to monitor the river water level as the parameter required for PSW operability and, hence, continued full-power reactor operation. However, this level can differ from the water level in the pump well due to flow restrictions introduced by the trash rack, intake screen, and debris. PSW operability and capacity are directly affected by the pump well level. Therefore, we are specifying that the location of parameter monitoring should directly affect the PSW operability, rather than including a hypothetical trash loading of the screen. The change in monitoring point has no effect upon safety. In fact, the monitoring of conditions that directly affect pump performance results in additional assurance of safe operation. Monitoring pump well level will assure that there is an adequate water supply at the pump.

The design and accident analyses contained in the FSAR which form the design bases for Plant Hatch assume that an adequate supply of river water is available to support a safe plant shutdown. In order to establish a minimum water level in the river intake structure at which the plant can be safely shut down, the minimum submergence requirements

## ENCLOSURE 1 (Continued)

TECHNICAL SPECIFICATIONS CHANGES  
PERTAINING TO RIVER WATER LEVEL  
BASIS FOR CHANGES

of the PSW pumps and the Residual Heat Removal Service Water (RHRSW) Pumps must be considered. The PSW and RHRSW systems provide essential cooling water and remove decay heat from the containment to the ultimate heat sink (Altamaha River). The ultimate heat sink must be available for approximately 30 days post shutdown to be consistent with the design bases.

a. Decay Heat Removal Considerations

The decay and sensible heat removal from the reactor vessel to the containment are not affected by low river level. However, this heat must be transferred from the containment to the ultimate heat sink. This safety function is provided by the PSW and RHRSW systems.

Per the pump vendor, the PSW pumps require 48 in. of submergence at their rated flow (8500 gpm) for NPSH and vortexing considerations. At 7000 gpm, the minimum submergence is 32 in., which corresponds to a level in the pump well of 59 ft 10 in. msl. Normal operation requires 7840 gpm for each of 3 pumps, while emergency shutdown requires only about 4500 gpm out of a single pump.

The RHRSW pumps will produce rated flow (4000 gpm per pump) below 59 ft 10 in., which is the required level for PSW operability for safe shutdown. Therefore, RHRSW pump operability will be assured by maintaining adequate submergence for the PSW pumps.

b. Hydrological Considerations

The Altamaha River is the ultimate heat sink for Plant Hatch. The area of the drainage basin affecting the Altamaha at the plant site is about 12,000 mi<sup>2</sup>, including 3 major dams upstream. For large rivers, such as the Altamaha, there is some minimum base flow (level) that can be sustained from ground water and aquifer flows. During periods of extreme drought, these aquifers are depleted very slowly, and the river flows approach a low asymptotic limit. The hypothetical minimum flow at the Plant Hatch site is estimated to be 950 cfs, which corresponds to a river level of 60.8 ft msl. Assuming a 0.1-ft head loss through the trash rack and traveling screen the proposed Technical Specifications level yields a river level of 60.8 ft msl, which corresponds to the hypothetical minimum level.

## ENCLOSURE 1 (Continued)

TECHNICAL SPECIFICATIONS CHANGES  
PERTAINING TO RIVER WATER LEVEL  
BASIS FOR CHANGES

The equivalent river level for a pump well level of 59.9 ft is similarly calculated to be 60.0 ft, which correlates to a river flow of 660 cfs. This level is far below any postulated low flow condition which could occur in the Altamaha River. In addition, frequent surveillance of the approach channel to the intake structure and the topography of the river near the intake structure assures that a postulated gross shift in river flow away from the intake is highly unlikely, as discussed in the Hatch 2 FSAR, Chapter 2.

c. Summary

The pump well level proposed for the Technical Specifications is 60.7 ft. This level corresponds to a river flow rate equal to the hypothetical low flow level. Establishment of the Technical Specifications level at 60.7 ft, when the shutdown PSW flow requirements can be met at 59.9 ft, provides an additional margin that ensures that Plant Hatch is protected against incredibly low flows and that the ultimate heat sink is available for the required 30-day period. Since shutdown PSW flow requirements can be supported at 59.9 ft, accident analyses are not adversely affected by this change, and the basis for the Technical Specification is unchanged. Although this revision allows plant operation to continue at lower river levels, no new type of accident is introduced. The margin of safety is not affected.

Proposed Change 2:

In Technical Specification 3.5.I (Unit 1), change the words to read: "the level in the river would correspond to a level in the pump well of the intake structure of less than 60.7 feet..." In Technical Specification 3.7.1.2.b (Unit 2), change the wording to read: "The river level equivalent to greater than or equal to 60.7 feet MSL in the pump well, and..."

Basis for Proposed Change 2:

The logical basis for the level used in Proposed Change 2 is the same as the logic in Proposed Change 1. The basis for Proposed Change 2 is that operational considerations may include the installation of a temporary

## ENCLOSURE 1 (Continued)

TECHNICAL SPECIFICATIONS CHANGES  
PERTAINING TO RIVER WATER LEVEL  
BASIS FOR CHANGES

weir downstream of the intake structure. Depending upon the exact location and height of the weir, the level gauge located in the intake structure might not accurately reflect the level in the river. Regardless of the installation of a weir, the same minimum river level is necessary to bring the plant to safe shutdown conditions. Therefore, we are specifying that, with a weir installed, an additional reading of river level must be taken at a location not affected by the weir and correlated to the level in the pump well. No new accidents are introduced by this change. Modes of operation are not affected. The margin of safety remains the same as in Proposed Change 1.

Proposed Change 3:

In Technical Specifications 4.5.I (Unit 1) and 4.7.1.2 (Unit 2), change the level at which an increased frequency of level surveillance is required.

Basis for Proposed Change 3:

The basis for the frequency of surveillance is to provide increased awareness of the decreasing river level in order to prevent the level from dropping to an unsafe level without warning. Since we have proposed a decrease in the shutdown level, we are proposing a similar decrease in the level for initiating increased surveillance. The level for initiating increased surveillance is 1-ft above the level requiring plant shutdown. Note that the proposed levels and frequencies are consistent between the two units. This change does not involve an unreviewed safety question, because the accident analyses and the margin of safety are not affected.

Proposed Change 4:

In Technical Specification 3.5.I (Unit 1), delete all reference to throttling the pump discharge.

Basis for Proposed Change 4:

The basis for throttling the pumps was based upon continued full-power operation. Since we are proposing to change the basis to safe shutdown operations, there is no need to retain a throttling requirement. This change does not involve an unreviewed safety question, because the accident analyses and the margin of safety are not affected.

ENCLOSURE 1 (Continued)

TECHNICAL SPECIFICATIONS CHANGES  
PERTAINING TO RIVER WATER LEVEL  
BASIS FOR CHANGES

Proposed Change 5:

Amend the Bases to reflect the above changes.

Basis for Proposed Change 5:

These changes are consistent with the new basis for the Technical Specifications described above.

ENCLOSURE 2

NRC DOCKETS 50-321, 50-366  
OPERATING LICENSES DPR-57, NPF-5  
EDWIN I. HATCH NUCLEAR PLANT UNITS 1, 2  
TECHNICAL SPECIFICATIONS CHANGES  
PERTAINING TO RIVER WATER LEVEL  
TO CFR 50.92 EVALUATION

Proposed Change 1:

In Technical Specification 3.5.I (Unit 1), change the words to read: "If the water level as measured in the pump well decreases to less than 60.7 feet (MSL)..." In Technical Specification 3.7.1.2.a (Unit 2), change the words to read: "The water level in the pump well of the intake structure greater than or equal to 60.7 feet mean sea level, and..."

Basis for Proposed Change 1:

This change does not involve a significant increase in the probability or consequences of an accident, because no new modes of operation are introduced.

The possibility of a different kind of accident from any analyzed previously is not created by this change, because no new accidents are introduced.

Margins of safety are not significantly reduced by this change, because the proposed allowable values preserve appropriate margins to the analytical limits, as specified by the pump manufacturer.

Proposed Change 2:

In Technical Specification 3.5.I (Unit 1), change the words to read: "the level in the river would correspond to a level in the pump well of the intake structure of less than 60.7 feet..." In Technical Specification 3.7.1.2.b (Unit 2), change the wording to read: "The river level equivalent to greater than or equal to 60.7 feet MSL in the pump well, and..."

Basis for Proposed Change 2:

This change does not involve a significant increase in the probability or consequences of an accident, because no new modes of operation are introduced.

ENCLOSURE 2 (Continued)

TECHNICAL SPECIFICATIONS CHANGES  
PERTAINING TO RIVER WATER LEVEL  
TO CFR 50.92 EVALUATION

The possibility of a different kind of accident from any analyzed previously is not created by this change, because no new accidents are introduced.

Margins of safety are not significantly reduced by this change, because the proposed allowable values preserve appropriate margins to the analytical limits, by assuring that sufficient river level is available to bring the plant to safe shutdown.

Proposed Change 3:

In Technical Specifications 4.5.I (Unit 1) and 4.7.1.2 (Unit 2), change the level at which an increased frequency of level surveillance is required.

Basis for Proposed Change 3:

This change does not involve a significant increase in the probability or consequences of an accident, because no new modes of operation are introduced.

The possibility of a different kind of accident from any analyzed previously is not created by this change, because no new accidents are introduced.

Margins of safety are not significantly reduced by this change, because the proposed allowable values preserve appropriate margins to the analytical limits, by assuring that sufficient river level is available to bring the plant to safe shutdown.

ENCLOSURE 2 (Continued)

TECHNICAL SPECIFICATIONS CHANGES  
PERTAINING TO RIVER WATER LEVEL  
TO CFR 50.92 EVALUATION

Proposed Change 4:

In Technical Specification 3.5.I (Unit 1), delete all reference to throttling the pump discharge.

Basis for Proposed Change 4:

This change does not involve a significant increase in the probability or consequences of an accident, because no new modes of operation are introduced.

The possibility of a different kind of accident from any analyzed previously is not created by this change, because no new accidents are introduced.

Margins of safety are not significantly reduced by this change, throttling is no longer required for continued full-power operation.

Proposed Change 5:

Amend the Bases to reflect the above changes.

Basis for Proposed Change 5:

This change is consistent with the new basis for the Technical Specifications described above.

ENCLOSURE 3

NRC DOCKETS 50-321, 50-366  
 OPERATING LICENSES DPR-57, NPF-5  
 EDWIN I. HATCH NUCLEAR PLANT UNITS 1, 2  
TECHNICAL SPECIFICATIONS CHANGES  
PERTAINING TO RIVER WATER LEVEL

The proposed changes to the Technical Specifications (Appendix A to Operating Licenses DPR-57 and NPF-5) would be incorporated as follows:

	<u>Remove Page</u>	<u>Insert Page</u>
UNIT 1		
	3.5-11	3.5-11
	3.5-19	3.5-19
	3.5-20	3.5-20
UNIT 2		
	3/4 7-3	3/4 7-3
	3/4 7-4	3/4 7-4
	3/4 7-5	3/4 7-5
	B 3/4 7-1	B 3/4 7-1
	- - -	B 3/4 7-1a