LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

4.5.H.1. Maintenance of Filled Discharge Pipes (con't)

from the high point and water flow observed.

2. Following any period where the LPCI or core spray systems have not been required to be operable, or have been inoperable the discharge piping of the system or systems being returned to service shall be vented from the high point prior to return of the system to service.

3. Whenever the HPCI or RCIC system is lined up to take suction from the condensate storage tank, the discharge piping of the HPCI and RCIC shall be vented from the high point of the system and water flow observed on a monthly basis.

4. The level switches which monitor the discharge lines shall be functionally tested every month and calibrated every three months.

8609260218 860909
PDR ADOCK 05000321
P PDR

3.5.I Minimum River Level

If the water level as measured in the pump well decreases to less than 60.7 feet (MSL), or if the level in the river* would drop to a level equivalent to less than 60.7 feet in the pump well of the intake structure, an orderly shutdown of the reactor shall be initiated and the reactor shall be in the Cold Shutdown Condition within 24 hours until the level in the river is greater than or equal to 60.7 feet (MSL) equivalent in the pump well.

I. Minimum River Level

The water level as measured in the pump well and the level in the river* shall be verified with the following frequencies:

Level (MSL)	Frequency
1. >61.7 feet	Biweekly
2. ≤61.7 feet	Every 12 hrs

* Only pump well monitoring is required if a temporary weir is not in place.

3.5.H Maintenance of Filled Discharge Pipes

If the discharge piping of the core spray, LPCI, HPCI system , and RCIC system are not filled, a water hammer can develop in this piping when the pump and/or pumps are started. To minimize damage to the discharge piping and to ensure added margin in the operation of these systems, this Technical Specification requires the discharge lines to be filled whenever the system is in an operable condition. If a discharge pipe is not filled, the pumps that supply that line must be assumed inoperable for Specification purposes.

The core spray and RHR system discharge piping high point vent is visually checked for water flow once a month prior to testing to ensure that the lines are filled. The visual checking will avoid starting the core spray or RHR system with a discharge line not filled.

Assurance that the HPCI and RCIC discharge piping remains filled is provided by observing water flow from these system high points monthly.

I. Minimum River Level

A very low flow river stage-discharge relationship was developed at the Plant Hatch intake structure location. USGS rating data were available for flows above 1740 cfs at the Baxley gauge (at U.S. Highway No. 1 Bridge, which is on the plant site). This data, which includes bathmetric surveys of the rating cross-section, was used to extend the USGS rating curve by computation. Since the USGS data used in these computations result in the highest flow for a given low flow stage ever recorded at the location, the computed rating curve should give a conservative low stage for a given flow. The river rating curve at the Plant Hatch intake structure was developed by subtracting 0.1 ft from the USGS guage evaluation for a given discharge. The 0.1 ft adjustment was determined by level survey when the river level at the USGS guage was approximately 62 ft (msl).
At the Plant Hatch site, the river level would be 61.3 ft (msl) for 1200 cfs which is the low flow of record at Charlotte and 60.8 ft (msl) for the hypothetical minimum low flow of 950 cfs.

The minimum low flow is important because of its effect on the operation of Plant service water and RHR service water pumps. The RHR service water pumps at rated flow conditions require, for NPSH, a river stage of only 59.0 feet. Thus, no further consideration is required on river stage with regard to submergence of these pumps.

At the rated flow of 8500 gpm each for the PSW pumps, 4 feet of submergence will satisfy the NPSH and vortexing requirement. This corresponds to a stage in the pump well of 61.2 feet. Normal operation requires about 7840 gpm for each of three pumps. Shutdown or emergency conditions require only one pump with a discharge flow of 4428 gpm. This corresponds to a pump well level of 59.9 feet for safe shutdown. For a 0.1 foot head loss through the trash rack and traveling screen , the corresponding river level would be 60.0 ft (msl), which corresponds to a flow of 660 cfs. Similarly,

I. Minimum River Level (Continued)

the river level associated with the shutdown level in the pump well of 60.7 ft (msl) is 60.8 ft (msl), which corresponds to a flow of 950 cfs. Therefore, the shutdown level of 60.7 ft (msl) in the pump well provides an additional margin that ensures that Plant Hatch is protected against incredibly low flows and that the ultimate heat sink (Altamaha River) is available for at least 30 days. Operationally, it may be desirable to have a higher level in the intake structure during power operation because of the larger PSW flow requirements during plant operation. Supplementation of the river level or flow is permissible to support power operations. River flow is capable of being supplemented by additional discharge from upstream reservoirs. The capability of the upstream reservoirs to supplement river flow is approximately 70 days from normal full pool in Lake Oconee. An additional means of supplementing river stage at the intake structure to support power operation is construction of a temporary weir downstream of the intake structure. In order to assure the 30 day margin for safe shutdown, a river level measurement is taken at a location not affected by the weir and correlated back to the intake structure. When no weir is in place, it is only necessary to read river level in the pump well and compare with the minimum river level LCO.

PLANT SYSTEMS

SERVICE WATER SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.1.2 Two independent plant service water system loops and the standby service water subsystem shall be OPERABLE with:

a. The water level in the pump well of the intake structure greater than or equal to 60.7 feet mean sea level, and

b. The river level* equivalent to greater than or equal to 60.7 feet MSL in the pump well, and

c. Each plant service water system loop containing two OPERABLE plant service water pumps, and

d. The standby service water system containing one OPERABLE standby service water pump.

APPLICABILITY: CONDITIONS 1, 2, 3, 4, and 5.

ACTION:

a. In CONDITION 1, 2, or 3:

1. With one plant service water pump inoperable, operation may continue and the provisions of Specification 3.0.4 are not applicable; restore the inoperable pump to OPERABLE status within 30 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

2. With one plant service water pump in each loop inoperable, operation may continue and the provisions of Specification 3.0.4 are not applicable; restore at least one inoperable pump to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

3. With one plant service water system loop inoperable, restore the inoperable loop to OPERABLE status with at least one OPERABLE pump or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

* Only pump well monitoring is required if a temporary weir is not in place.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

4. With the standby service water subsystem inoperable for up to 60 days, provide Hatch - Unit 1 service water cooling to the 1B Diesel generator by verifying OPERABILITY of the Hatch - Unit 1 service water cooling source per Hatch - Unit 1 technical specifications within 8 hours. Otherwise, declare the 1B diesel generator inoperable and take the ACTION required by Specification 3.8.1.1

5. With water level less than specified in 3.7.1.2.a or 3.7.1.2.b, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. In CONDITION 4 or 5:

1. With up to three plant service water pumps or one plant service water loop inoperable, or

2. With two plant service water pumps and the standby service water subsystem inoperable,

restore both plant service water loops with at least one pump in each loop and the standby service water subsystem to OPERABLE status within 7 days or declare the core spray system, the LPCI system and the associated diesel generators inoperable and take the ACTION required by Specifications 3.5.3.1, 3.5.3.2 and 3.8.1.2.

SURVEILLANCE REQUIREMENTS

4.7.1.2 The plant service water system and the standby service water subsystem shall be demonstrated OPERABLE:

a. By verifying that the water level in the pump well of the intake structure is greater than or equal to 60.7 feet MSL and the river level* would correspond to a level in the pump well of the intake structure of greater than or equal to 60.7 feet.

1. At least once per 14 days when the level in the pump well of the intake structure is above 61.7 feet MSL, and

2. At least once per 12 hours when the level in the pump well of the intake structure is less than or equal to 61.7 feet MSL.

* Only pump well monitoring is required if a temporary weir is not in place.

SURVEILLANCE CONDITIONS (Continued)

b. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed or otherwise secured in position, is in its correct position.

c. At least once per 12 months by verifying the river bottom conditions in the vicinity of the intake structure.

d. At least twice per 12 months by verifying the river stage discharge rating curve in the unit vicinity from recent USGS gaging data and computation of a very low flow rating curve to Elevation 60.0 msl.

e. At least once per 18 months during shutdown, by verifying that:

1. Each automatic valve servicing non-safety related equipment actuates to its isolation position on an isolation test signal.

2. Each plant service water pump starts automatically, when on Standby, to maintain service water pressure $\geq$ 60 psig.

3. The standby service water subsystem pump starts automatically when the 1B diesel generator starts

3/4.7 PLANT SYSTEMS

Bases

3/4.7.1 SERVICE WATER SYSTEMS

The OPERABILITY of the service water systems ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during safe shutdown (long term) conditions. The redundant cooling capacity of these systems, assuming a single failure, is consistent with the assumptions used in the accident conditions within acceptable limits. The minimum water level is based on shutdown cooling requirements and includes NPSH and vortexing considerations for the PSW pumps. Requirements for the PSW pumps are more limiting than RHRSW. At the rated flow of 8500 gpm each for the PSW pumps, 4 feet of submergence will satisfy the NPSH and vortexing requirement. This corresponds to a stage in the pump well of 61.2 feet. Normal operation requires about 7840 gpm for each of three pumps. Shutdown or emergency conditions require only one pump with a discharge flow of 4428 gpm. This corresponds to a level of 59.9 feet for safe shutdown. The river level allows for continued operation of the PSW and RHRSW systems for a minimum of 30 days following plant shutdown to bring the plant to long term shutdown condition, and includes allowance for the drop in base river flow due to worst drought conditions. Operationally, it may be desirable to have a higher level in the intake structure during power operation because of the larger PSW flow requirements during plant operation. Supplementation of the river level or flow is permissible to support power operations. River flow is capable of being supplemented by additional discharge of upstream reservoirs. The capability of the upstream reservoirs to supplement river flow is approximately 70 days from normal full pool in Lake Oconee. An additional means of supplementing river stage at the intake structure, to support power operation, is construction of a temporary weir downstream of the intake structure. In order to assure the 30 day margin for safe shutdown, a river level measurement is taken at a location not affected by the weir and correlated back to the intake structure. When no weir is in place, it is only necessary to read river level in the pump well and compare with the minimum river level LCO.

3/4.7.2 MAIN CONTROL ROOM ENVIRONMENTAL CONTROL SYSTEM

The OPERABILITY of the main control room environmental control system ensures that (1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for equipment and instrumentation cooled by this system, and (2) the control room will remain habitable for operations personnel during the following all credible accident conditions. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criterion 10 of Appendix "A", 10 CFR Part 50.

3/4.7.3 REACTOR CORE ISOLATION COOLING SYSTEM

The reactor core isolation cooling (RCIC) system is provided to assure adequate core cooling in the event of reactor isolation from its primary heat sink and the loss of feedwater flow to the reactor vessel without requiring actuation of any of the emergency core cooling equipment. The RCIC system is conservatively required to be OPERABLE whenever reactor pressure exceeds 150 psig even though the residual heat removal (RHR) system provides adequate core cooling up to 350 psig.

The RCIC system specifications are applicable during CONDITIONS 1,2 and 3 when reactor vessel pressure exceeds 150 psig because RCIC is the primary non-ECCS source of emergency core cooling when the reactor is pressurized.

Two sources of water are available to the RCIC system. Suction is initially taken from the condensate storage tank and is automatically transferred to the suppression pool upon low CST level or high suppression pool level.

With RCIC inoperable, adequate core cooling is assured by the demonstrated OPERABILITY OF THE HPCI system and justifies the specified 14 day out-of-service period.