

August 21, 1995

To: Manual Holders

Subject: Oconee SLC Revision

This revision to the SLC Manual revises SLC Section 16.9.8 to provide additional restrictions as to when the HPSW system is considered available with regard to supporting the operability of LPSW system.

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Any questions concerning this revision may be directed to David Nix 803-885-3634.

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Regulatory Compliance

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Oconee Nuclear Station
Selected Licensee Commitments
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16.9 AUXILIARY SYSTEMS

16.9.8 HPSW PUMP REQUIREMENT TO SUPPORT LPSW

COMMITMENT

Adequate suction to the LPSW Pumps requires water from the CCW system to be supplied. In order for water to be supplied to LPSW from CCW during a LOCA/LOOP, HPSW is required to support initial CCW siphon flow and subsequent CCW pump restart. This requires BOTH of the following conditions:

1. Two HPSW Pumps shall be operable and capable of restarting prior to complete drain of the Elevated Water Storage Tank (EWST), to provide sealing water for CCW Pump shafts to prevent loss of siphon flow and to provide cooling for the CCW Pump(s) after re-start of the CCW Pump(s).

AND EITHER

2.a. Elevated water storage tank with HPSW-25 functionally operable to provide sealing/cooling water for CCW Pumps.

OR

2.b. Minimum lake level to provide true gravity flow to the suction of the LPSW Pumps without dependency on siphon flow. (See SLC 16.9.7)

APPLICABILITY:

Any time the LPSW system is required to be operable. Action statements apply to all three units.

ACTION:

a. If the HPSW Jockey Pump is unable to maintain EWST level or fill the EWST, it shall be declared out of service.

b. If any two HPSW Pumps (HPSWP "A", HPSWP "B", or Jockey Pump) are removed from service or inoperable, the LPSW system is not single failure proof. Enter a 72 hour LCO per Technical Specification 3.3.7.b.

c. If either of the two Unit 1 Main Feeder Busses is out of service or inoperable, then the LPSW system is not single failure proof. Enter a 72 hour LCO per Technical Specification 3.3.7.b.

d. If three HPSW Pumps (HPSWP "A", HPSWP "B", and Jockey Pump) are removed from service or inoperable at the same time, then the LPSW system is inoperable. Enter Technical Specification 3.0.

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e. If the EWST is out of service AND the lake level is not adequate to support gravity flow, then the LPSW system is inoperable. (NOTE: EWST is considered out of service if HPSW-25 is out of service or if in any way water cannot be supplied from the EWST via the sealing water path to CCW Pumps or if EWST level cannot be maintained > 70,000 gallons). Enter Technical Specification 3.0.

SURVEILLANCE:

Surveillance per SLC 16.9.1 and the Appendix B testing program is adequate to demonstrate the availability of the equipment and systems discussed here.

BASES:

The HPSW system provides support for the LPSW system suction, station fire suppression capability, back up service water to HPI Pump Motor and Bearing coolers, and back up service water to the TDEFW Pump Bearing and Oil coolers. HPSW system make-up demands are normally met by the HPSW Jockey Pump.

The HPSW system must provide upper guide bearing sealing and motor cooling to the CCW Pumps to ensure the CCW system can provide a suction supply to the LPSW system. Sealing is required any time the CCW system is in the siphon flow mode of operation. Cooling to the CCW Pump motors is required any time the CCW Pumps are required to operate.

At certain lake levels unassisted gravity flow may be possible. If so, the EWST is not required to support siphon flow by providing sealing of the CCW Pump Upper Guide Bearing to prevent some of the air inleakage that could defeat the ECCW siphon. However, HPSW is still required to support operation of the CCW Pumps since procedures require that the CCW pumps must be restarted following a LOCA/LOOP.

LPSW takes suction from the CCW crossover header. During certain analyzed accident conditions, a loss of power to the CCW Pumps for all three units must be assumed. This results in a loss of forced flow to the CCW crossover header. Initially, the sealing requirements are met via the EWST. The duration of the event may last beyond the capability of the inventory of the EWST. Therefore the HPSW Pumps must be capable of being started following a loss of power in order to meet the cooling and seal lubrication requirements of the CCW Pumps.

The HPSW Jockey Pump is supplied by "load shed" power and would not be available until after the load shed is reset. The CCW Design Basis Document (Section 20.1.1.3) requires a re-start of a CCW Pump within one and one half hours. The load shed must be reset to restart the CCW pump, thus the power would also be available to the Jockey Pump within that time frame. The Jockey Pump is of smaller capacity, would not meet fire protection capacity requirements, and would take longer to refill the EWST. Therefore, the Jockey Pump is considered as a substitute for an HPSW Pump only for purposes of

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supporting the siphon or the restart of a CCW Pump and not for Fire Protection.

The HPSW Jockey pump is of smaller capacity than HPSW pumps A and B. Calculation OSC-5945 "HPSW Pump and Fire Protection Flow Test Acceptance Criteria" calculates the accident loads and concludes the HPSW Jockey pump has sufficient capacity to supply those loads plus system leakage provided it is able to maintain EWST level or fill the EWST in normal usage. Accident loads plus system leakage are calculated to be approximately the same as normal loads plus normal system leakage.

All three HPSW pumps are powered from the Unit 1 Main Feeder Busses. Backup power to the Unit 1 Main Feeder Busses is not available from another unit. Therefore, if one of the two available Unit 1 Main Feeder Busses is removed from service, then the remaining HPSW pumps are vulnerable to a single failure of the other Unit 1 Main Feeder Bus. This would also result in LPSW not being single failure proof since HPSW is necessary for LPSW operation in the conditions described above. This condition would affect LPSW for all three units.

An EWST level of 70,000 gallons is chosen as the minimum level for EWST operability since this is the lowest level which would exist during normal daily operation. An EWST level of 70,000 gallons is the setpoint at which an HPSW pump in "base" would start to make up to the EWST. This situation would not be expected to occur during normal system operation since the HPSW Jockey pump is capable of maintaining EWST level at 100,000 gallons.

REFERENCES:

- 1) OSC-5409 Rev 3, " Single Failure Analysis of the ECCW System Supply to the LPSW System "
- 2) OSC-5349 Rev 1, " Minimum Lake Level Required to Maintain Sufficient NPSH to the LPSW Pumps via Gravity Flow "
- 3) OSC 5945 Rev 0, "HPSW Pump and Fire Protection Test Acceptance Criteria"
- 4) PIP 0-094-0952
- 5) PIP 0-094-0995
- 6) PIP 0-095-0307
- 7) PIP 0-095-0174
- 8) Oconee FSAR Sections 9.2.2, 9.5.1, 15.0, Table 9-4, Figure 9-9 through 9-12; 1994 Update
- 9) Technical Specifications 3.0, 3.3.7, 4.0.4, Table 4.1-2, as amended to 2/1/95.

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- 10) Selected Licensee Commitments 16.9.1, 16.9.7, as amended to 2/14/95
- 11) OSS-0254.00-00-1002, Rev 2, " Design Basis Specification for HPSW "
- 12) OSS-0254.00-00-1039, Rev 2, " Design Basis Specification for LPSW "
- 13) OSS-0254.00-00-1003, Rev 5, " Design Basis Specification for CCW "
- 14) Letter dated 4/20/94 from J. W. Hampton (DPC) to NRC regarding supplemental information for revision to Tech Spec 3.4.

STATION MANAGER APPROVAL

B. W. Pule

DATE

8-17-95

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