

3.7 PLANT SYSTEMS

3.7.2 Emergency Service Water (ESW) System and Normal Heat Sink

LCO 3.7.2 Two ESW subsystems and normal heat sink shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ESW subsystem inoperable.	A.1 Restore ESW subsystem to OPERABLE status.	7 days
B. Water temperature of the normal heat sink is > 90°F and ≤ 92°F.	B.1 Verify water temperature of the normal heat sink is ≤ 90°F averaged over the previous 24 hour period.	Once per hour
C. Required Action and associated Completion Time of Condition A or B not met.  <u>OR</u>  Both ESW subsystems inoperable.  <u>OR</u>  Normal heat sink inoperable [for reasons other than condition B].	C.1 Be in MODE 3.  <u>AND</u>  C.2 Be in MODE 4.	12 hours    36 hours

BASES

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APPLICABILITY  
(continued)

In MODES 4 and 5, the OPERABILITY requirements of the ESW System and normal heat sink are determined by the systems they support, and therefore the requirements are not the same for all facets of operation in MODES 4 and 5. Thus, the LCOs of the systems supported by the ESW System and normal heat sink will govern ESW System and normal heat sink OPERABILITY requirements in MODES 4 and 5.

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ACTIONS

A.1

With one ESW subsystem inoperable, the ESW subsystem must be restored to OPERABLE status within 7 days. With the unit in this condition, the remaining OPERABLE ESW subsystem is adequate to perform the heat removal function. However, the overall reliability is reduced because a single failure in the OPERABLE ESW subsystem could result in loss of ESW function.

The 7 day Completion Time is based on the redundant ESW System capabilities afforded by the OPERABLE subsystem, the low probability of an event occurring during this time period, and is consistent with the allowed Completion Time for restoring an inoperable DG.

B.1

With water temperature of the normal heat sink  $> 90^{\circ}\text{F}$  and  $\leq 92^{\circ}\text{F}$ , the design basis assumptions associated with the initial normal heat sink temperature are bounded provided the temperature of the normal heat sink when averaged over the previous 24 hour period is  $\leq 90^{\circ}\text{F}$ . To ensure that the  $92^{\circ}\text{F}$  normal heat sink temperature limit is not exceeded, Required Action B.1 is provided to more frequently monitor the temperature of the normal heat sink. The once per hour completion time takes into consideration normal heat sink temperature variations and the increased monitoring frequency needed to ensure design basis assumptions and equipment limitations are not exceeded in this condition. If the water temperature of the normal heat sink exceeds  $90^{\circ}\text{F}$  when averaged over the previous 24 hour period or the water temperature of the normal heat sink exceeds  $92^{\circ}\text{F}$ , Condition C must be entered immediately.

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**BASES**

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**ACTIONS**  
(continued)

C.1 and C.2

If the ESW System cannot be restored to OPERABLE status within the associated Completion Time, or both ESW subsystems are inoperable, or the normal heat sink is inoperable, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

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**SURVEILLANCE**  
**REQUIREMENTS**

SR 3.7.2.1

This SR verifies the water level in the pump bay of the pump structure to be sufficient for the proper operation of the ESW pumps (the pump's ability to meet the minimum flow rate and anticipatory actions required for flood conditions are

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BASES

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LCO  
(continued)      Emergency heat sink water temperature is not addressed in this LCO since the maximum water temperature of the emergency cooling tower reservoir has been demonstrated, based on historical data, to be bounded by the normal heat sink requirements (LCO 3.7.2, "Emergency Service Water (ESW) System and Normal Heat Sink").

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APPLICABILITY      In MODES 1, 2, and 3, the emergency heat sink is required to be OPERABLE to provide a seismic Class I source of cooling water to the ESW and HPSW Systems when the normal heat sink is unavailable. Therefore, the emergency heat sink is required to be OPERABLE in these MODES.

In MODES 4 and 5, the OPERABILITY requirements of the emergency heat sink are determined by the systems it supports in the event the normal heat sink is unavailable.

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ACTIONS

A.1

With one required emergency cooling tower fan inoperable, action must be taken to restore the required emergency cooling tower fan to OPERABLE status within 14 days. The 14 day Completion Time is based on the remaining heat removal capability, the low probability of an event occurring requiring the inoperable emergency cooling tower fan to function, and the capability of the remaining emergency cooling tower fan.

B.1

With the emergency heat sink inoperable for reasons other than Condition A, the emergency heat sink must be restored to OPERABLE status within 7 days. With the unit in this condition, the normal heat sink (Conowingo Pond) is adequate to perform the heat removal function; however, the overall reliability is reduced. The 7 day Completion Time is based on the remaining heat removal capability and the low probability of an event occurring requiring the emergency heat sink to be OPERABLE during this time period.

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BASES

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APPLICABILITY (continued) In MODES 4 and 5, the OPERABILITY requirements of the ESW System and normal heat sink are determined by the systems they support, and therefore the requirements are not the same for all facets of operation in MODES 4 and 5. Thus, the LCOs of the systems supported by the ESW System and normal heat sink will govern ESW System and normal heat sink OPERABILITY requirements in MODES 4 and 5.

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(continued)

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**BASES**

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**ACTIONS**  
(continued)

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BASES

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LCO  
(continued)

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