

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT		
<p>3.5 CORE AND CONTAINMENT COOLING SYSTEMS</p>	<p>4.5 CORE AND CONTAINMENT COOLING SYSTEMS</p>		
<p><u>Applicability:</u></p>	<p><u>Applicability:</u></p>		
<p>Applies to the operational status of the core and suppression pool cooling subsystems.</p>	<p>Applies to the Surveillance Requirements of the core and suppression pool cooling subsystems which are required when the corresponding Limiting Condition for Operation is in effect.</p>		
<p><u>Objective:</u></p>	<p><u>Objective:</u></p>		
<p>To assure the operability of the core and suppression pool cooling subsystems under all conditions for which this cooling capability is an essential response.</p>	<p>To verify the operability of the core and suppression pool cooling subsystems under all conditions for which this cooling capability is an essential response to station abnormalities.</p>		
<p><u>Specification:</u></p>	<p><u>Specification:</u></p>		
<p>A. <u>Core Spray and LPCI Subsystems</u></p>	<p>A. <u>Core Spray and LPCI Subsystems</u></p>		
<p>1. Both core spray subsystems shall be OPERABLE whenever irradiated fuel is in the vessel and prior to reactor startup from a COLD CONDITION, except as specified in 3.5.A.2 and 3.5.G.3 below.</p>	<p>1. Core Spray Subsystem Testing.</p>		
	<table> <tr> <th><u>Item</u></th><th><u>Frequency</u></th></tr> </table>	<u>Item</u>	<u>Frequency</u>
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	<table> <tr> <td>a. Simulated Automatic Actuation test.</td><td>Annual</td></tr> </table>	a. Simulated Automatic Actuation test.	Annual
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	<table> <tr> <td>b. Pump Operability</td><td>Once/3 months As specified in the IST Program</td></tr> </table>	b. Pump Operability	Once/3 months As specified in the IST Program
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LIMITING CONDITIONS FOR OPERATION

3. The LPCI Subsystem shall be OPERABLE whenever irradiated fuel is in the reactor vessel, and prior to reactor startup from a COLD CONDITION, except as specified in 3.5.A.4, 3.5.A.5 and 3.5.G.3 below.

4. With one RHR (LPCI) pump inoperable, provided the remaining RHR (LPCI) active components, both Core Spray subsystems, the containment spray subsystem, and the diesel generators are verified to be OPERABLE, restore the inoperable RHR (LPCI) pump to OPERABLE status within 30 days.

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3. LPCI Subsystem Testing shall be as follows:

<u>Item</u>	<u>Frequency</u>
a. Simulated Automatic Actuation Test	Annual
b. Pump Operability	Once/3 months As specified in the IST Program
c. Motor Operated Valve Operability	Once/3 months As specified in the IST Program
d. Pump Flow Rate	Once/3 months

Three L₁ pumps shall del. at 14,400 gpm against a system head corresponding to a vessel pressure of 20 psig based on individual pump tests.

- e. Once per shift visually inspect and verify that RHR valve panel lights and instrumentation are functioning normally.

LIMITING CONDITIONS FOR OPERATIONC Residual Heat Removal (RHR)
Service Water System

1. Except as specified in 3.5.C.2, 3.5.C.3, 3.5.C.4, and 3.5.G.3 below, both RHR service water subsystem loops shall be operable whenever irradiated fuel is in the reactor vessel and reactor coolant temperature is greater than 212°F.
2. With one RHRSW pump inoperable, provided the remaining active components of both RHRSW subsystems are verified to be OPERABLE, 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.
3. With one RHRSW pump in each subsystem inoperable, provided the remaining active components of both RHRSW subsystems and the diesel generators are verified to be OPERABLE, 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.

SURVEILLANCE REQUIREMENTSC. Surveillance of the RHR Service Water System

1. Surveillance of the RHR service water system shall be as follows:

RHR Service Water Subsystem
Testing:

<u>Item</u>	<u>Frequency</u>
a. Pump and Motor operated valve operability.	Once/3 months <i>As specified in the IST Program</i>
b. Flow Rate Test-Each RHR service water pump shall deliver at least 2040 gpm at a TDH of 610 ft. or more.	after major pump maintenance and every 3 months

LIMITING CONDITIONS FOR OPERATION

4. With one RHRSW subsystem inoperable, provided the remaining RHRSW subsystem and its associated diesel generator are verified to be OPERABLE, restore the inoperable system to OPERABLE status with at least one OPERABLE pump within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

D. HPCI Subsystem

1. The HPCI Subsystem shall be OPERABLE whenever there is irradiated fuel in the reactor vessel, reactor pressure is greater than 150 psig, and prior to reactor startup from a COLD CONDITION, except as specified in 3.5.D.2 below.

SURVEILLANCE REQUIREMENTSD. HPCI Subsystem

1. HPCI Subsystem testing shall be performed as follows:

<u>Item</u>	<u>Frequency</u>
a. Simulated Automatic Actuation Test	Annual
b. Pump Operability	Once/3 Months As specified in the IST Program
c. Motor Operated Valve Operability	Once/5 Months As specified in the IST Program
d. At rated reactor pressure demonstrate ability to deliver rated flow at a discharge pressure greater than or equal to that pressure required to accomplish vessel injection if vessel pressure were as high as 1040 psig.	Once/3 Months

LIMITING CONDITION FOR OPERATION

SURVEILLANCE REQUIREMENT

J. River Water Supply System

1. Except as specified in 3.5.J.2 below, at least one pump in each river water supply system loop shall be OPERABLE whenever irradiated fuel is in the reactor vessel and reactor coolant temperature is greater than 212°F.

2. With one river water supply loop inoperable, provided the other river water supply loop and its associated diesel generator are verified to be OPERABLE, restore at least one pump in the inoperable loop 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.

J. River Water Supply System

1. River Water Supply System Testing:

<u>Item</u>	<u>Frequency</u>
a. Simulated automatic actuation test.	Once/operating cycle
b. Pump and motor operated valve operability.	Once/3 months <i>As specified in the IST Program</i>
c. Flow Rate Test	
Each river water supply system pump shall deliver at least 6000 gpm at TDH of 46 ft. or more.	After major pump maintenance and once per 3 months Daily when river elevation is less than 727 feet.
d. Operating Pump Flow Rate Demonstration	
Each Operating River Water Supply System Pump shall deliver at least 6000 gpm.	Daily

4.5 BASES

Core and Containment Cooling Systems Surveillance Frequencies

The testing interval for the core and containment cooling systems is based on industry practice, quantitative reliability analysis, judgement and practicality. The core cooling systems have not been designed to be fully testable during operation. For example, in the case of the HPCI, automatic initiation during power operation would result in pumping cold water into the reactor water vessel which is not desirable. Complete ADS testing during power operation causes an undesirable loss-of-coolant inventory. To increase the availability of the core and containment cooling systems, the components which make up the system, i.e., instrumentation, pumps, valves, etc., are tested frequently. The pumps and motor operated injection valves are also tested every three months to assure their operability. The test intervals are based upon Section XI of the ASME Code. A simulated automatic actuation test once per year combined with frequent tests of the pumps and injection valves is deemed to be adequate testing of these systems.

When components and subsystems are out-of-service, overall core and containment cooling reliability is maintained by evaluating the operability of the remaining equipment. The degree of evaluation depends on the nature of the reason for the out-of-service equipment. For routine out-of-service periods caused by preventative maintenance, etc., the evaluation may consist of verifying the redundant equipment is not known to be inoperable and applicable surveillance intervals have been satisfied. However, if a failure due to a design deficiency caused the outage, then the evaluation of operability should be thorough enough to assure that a generic problem does not exist.

The RHR valve power bus is not instrumented. For this reason surveillance requirements require once per shift observation and verification of lights and instrumentation operability.

LIMITING CONDITIONS FOR OPERATIONE. Emergency Service Water System

1. Except as required in Specification 3.8.E.2 below, both Emergency Service Water System loops shall be OPERABLE whenever irradiated fuel is in the reactor vessel and reactor coolant temperature is greater than 212°F.

2. With one of the Emergency Service Water System pumps or loops inoperable, REACTOR POWER OPERATION must be limited to seven days unless OPERABILITY of that system is restored within this period. During such seven days all active components of the other Emergency Service Water System shall be OPERABLE, provided the requirements of Specification 3.5.G are met.

3. If the requirements of Specification 3.8.E cannot be met, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTSE. Emergency Service Water System

1. Emergency Service Water System surveillance shall be as follows:

- a. Simulated automatic actuation test. Once/OPERATING CYCLE

- b. Pump and motor operated valve OPERABILITY. *Once/3 months. As specified in the IST Program.*

- c. Flow Rate Test

Each Emergency Service Water pump shall deliver at least that flow determined from Figure 4.8.E-1 for the existing river water temperature.	After major pump maintenance and once per 3 months, except weekly during periods of time the river water temperature exceeds 80°F.
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2. With one Emergency Service Water System pump or loop inoperable, the OPERABLE pump and loop shall be verified to be OPERABLE. In addition, the requirements of Specification 4.5.G.1 shall be met.