

PROPOSED CHANGES

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PROPOSED CHANGES

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REACTOR COOLANT SYSTEM

3/4.4.9 RESIDUAL HEAT REMOVAL

NOT SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.4.9.1 Two shutdown cooling mode loops of the residual heat removal (RHR) system shall be OPERABLE¹ and, at least one recirculation pump shall be in operation or, at least one shutdown cooling mode loop shall be in operation² with each loop consisting of at least:

- a. One OPERABLE RHR pump, and
- b. One OPERABLE RHR heat exchanger.

APPLICABILITY: OPERATIONAL CONDITION 3, with reactor vessel pressure less than the RHR cut-in permissive setpoint.

ACTION:

- a. With less than the above required RHR shutdown cooling mode loops OPERABLE, immediately initiate corrective action to return the required loops to OPERABLE status as soon as possible. Within 1 hour and at least once per 24 hours thereafter, verify the OPERABILITY of at least one alternate method capable of decay heat removal for each inoperable RHR shutdown cooling mode loop. Be in at least COLD SHUTDOWN within 24 hours.³
- b. With neither a recirculation pump nor an RHR shutdown cooling mode loop in operation, immediately initiate corrective action to return either at least one recirculation pump or at least one RHR shutdown cooling mode loop to operation as soon as possible. Within 1 hour establish reactor coolant circulation by an alternate method and monitor reactor coolant temperature and pressure at least once per hour.
- c. The provisions of Specification 3.0.4 are not applicable for up to 4 hours for the purpose of establishing the RHR system in the shutdown cooling mode once the reactor vessel pressure is less than the RHR cut-in permissive setpoint.

SURVEILLANCE REQUIREMENTS

4.4.9.1.1 At least one shutdown cooling mode loop of the residual heat removal system or at least one recirculation pump shall be determined to be in operation and circulating reactor coolant at least once per 12 hours.

¹One RHR shutdown cooling mode loop may be inoperable for up to 2 hours for surveillance testing.

²The shutdown cooling pump may be removed from operation for up to 2 hours per 8-hour period.

³The RHR shutdown cooling mode loop may be removed from operation during hydrostatic testing.

⁴Whenever both RHR shutdown cooling mode loops are inoperable, if unable to attain COLD SHUTDOWN as required by this ACTION, maintain reactor coolant temperature as low as practical by use of alternate heat removal methods.

⁵With the RHR pump suction path aligned to the reactor pressure vessel for shutdown cooling the RHR minimum flow valve may be deenergized in the closed position.

REACTOR COOLANT SYSTEM

COLD SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.4.9.2 Reactor water level shall be maintained greater than or equal to 214 inches and two# shutdown cooling mode loops of the residual heat removal (RHR) system shall be OPERABLE** and, at least one recirculation pump shall be in operation or at least one shutdown cooling mode loop shall be in operation## with each loop consisting of at least:

- a. One OPERABLE RHR pump, and
- b. One OPERABLE RHR heat exchanger.

APPLICABILITY: OPERATIONAL CONDITION 4 when irradiated fuel is in the reactor vessel and the water level is less than 20 feet 6 inches above the top of the reactor pressure vessel flange and heat losses to ambient are not sufficient** to maintain OPERATIONAL CONDITION 4.

ACTION:

- a. With less than the above required RHR shutdown cooling mode loops OPERABLE, within 1 hour and at least once per 24 hours thereafter, verify the operability of at least one alternate method capable of decay heat removal for each inoperable RHR shutdown cooling mode loop.
- b. With neither a recirculation pump nor a RHR shutdown cooling mode loop in operation, immediately initiate corrective action to return either at least one recirculation pump or at least one RHR shutdown cooling mode loop to operation as soon as possible. Within 1 hour establish reactor coolant circulation by an alternate method and monitor reactor coolant temperature and pressure at least once per hour.
- c. With reactor water level less than 214 inches, within 1 hour restore reactor water level to the required level or place two recirculation pumps in operation or place two RHR shutdown cooling mode loops in operation.
- d. The provisions of Specification 3.0.4 are not applicable for up to 4 hours for the purpose of establishing the RHR system in the shutdown cooling mode once the reactor vessel pressure is less than the RHR cut-in permissive setpoint.

#One RHR shutdown cooling mode loop may be inoperable for up to 2 hours for surveillance testing.

*The shutdown cooling pump may be removed from operation for up to 2 hours per 6-hour period.

**Ambient losses must be such that no increase in reactor vessel water temperature will occur (even though COLD SHUTDOWN conditions are being maintained).

##The RHR shutdown cooling pump may be removed from operation during hydrostatic testing.

*** With the RHR pump suction path aligned to the reactor pressure vessel for shutdown cooling the RHR minimum flow valve may be deenergized in the closed position.

3/4.5 EMERGENCY CORE COOLING SYSTEMS

3/4.5.1 ECCS - OPERATING

LIMITING CONDITION FOR OPERATION

3.5.2 The emergency core cooling systems shall be OPERABLE with:

- a. The core spray system (CSS) consisting of two subsystems with each subsystem comprised of:
 1. Two OPERABLE CSS pumps, and
 2. An OPERABLE flow path capable of taking suction from the suppression chamber and transferring the water through the spray sparger to the reactor vessel.
- b. The low pressure coolant injection (LPCI) system of the residual heat removal system consisting of two subsystems with each subsystem comprised of:
 1. Two OPERABLE LPCI (RHR) pumps, and
 2. An OPERABLE flow path capable of taking suction from the suppression chamber and transferring the water to the reactor vessel. ~~see ##~~
- c. The high pressure cooling injection (HPCI) system consisting of:
 1. One OPERABLE HPCI pump, and
 2. An OPERABLE flow path capable of taking suction from the suppression chamber and transferring the water to the reactor vessel.
- d. The automatic depressurization system (ADS) with at least five OPERABLE ADS valves.

APPLICABILITY: OPERATIONAL CONDITION 1, 2nd ~~no~~ 0 and 3rd ~~no~~.

~~##~~ The HPCI system is not required to be OPERABLE when reactor steam dome pressure is less than or equal to 250 psig.

~~##~~ The ADS is not required to be OPERABLE when reactor steam dome pressure is less than or equal to 250 psig.

~~##~~ Upon receipt of an LPCI initiation signal, operator action is required to manually open the torus suction valves to facilitate LPCI operation if the LPCI system is in the RHR shutdown cooling mode of operation per Specification 3.4.9.1.

~~##~~ See Special Test Exception 3.10.6.

~~##~~ With the RHR pump suction path aligned to the reactor pressure vessel for shutdown cooling the RHR minimum flow valve may be deenergized in the closed position.

EMERGENCY CORE COOLING SYSTEMS

3/4 5.2 ECCS - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.5.2 At least two of the following subsystems shall be OPERABLE:

- a. Core spray system (CSS) subsystems with a subsystem comprised of:
 1. At least two OPERABLE CSS pumps, and
 2. An OPERABLE flow path capable of taking suction from at least one of the following water sources and transferring the water through the spray sparger to the reactor vessel:
 - a) From the suppression chamber, or
 - b) When the suppression chamber water level is less than the limit required in Specification 3.5.3 or is drained, from the condensate storage tank containing at least 150,000 available gallons of water, equivalent to a level of 18 feet.
- b. Low pressure coolant injection (LPCI) system subsystems with a subsystem comprised of:
 1. At least two OPERABLE LPCI (RHR) pumps, and
 2. An OPERABLE flow path capable of taking suction from the suppression chamber and transferring the water to the reactor vessel**

APPLICABILITY: OPERATIONAL CONDITION 4 and 5^a.

ACTION:

- a. With one of the above required subsystem(s) inoperable, restore at least two subsystem(s) to OPERABLE status within 4 hours or suspend all operations with a potential for draining the reactor vessel.
- b. With both of the above required subsystems inoperable, suspend CORE ALTERATIONS and all operations with a potential for draining the reactor vessel. Restore at least one subsystem to OPERABLE status within 4 hours or establish SECONDARY CONTAINMENT INTEGRITY within the next 8 hours.

^aThe ECCS is not required to be OPERABLE provided that the reactor vessel head is removed, the cavity is flooded, the spent fuel pool gates are removed, and water level is maintained within the limits of Specification 3.9.8 and 3.9.9.

^{**}Upon receipt of a LPCI initiation signal, operator action is required to manually open the torus suction valves to facilitate LPCI operation if the LPCI system is in the RHR shutdown cooling mode of operation per Specification 3.4.9.2. With the RHR pump suction path aligned to the reactor pressure vessel for shutdown cooling the RHR minimum flow valve may be deenergized in the closed position.

CONTAINMENT SYSTEMS

SUPPRESSION POOL AND DRYWELL SPRAY

LIMITING CONDITION FOR OPERATION

3.6.2.2 The suppression pool and drywell spray mode of the residual heat removal (RHR) system shall be OPERABLE with two independent loops, each loop consisting of:

- a. One OPERABLE RHR pump, and
- b. An OPERABLE flow path capable of recirculating water from the suppression chamber through an RHR heat exchanger and the suppression pool and drywell spray spargers.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

- a. With one suppression pool and/or drywell spray loop inoperable, restore 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.
- b. With both suppression pool and/or drywell spray loops inoperable, restore at least one loop to OPERABLE status within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN^a within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.2 The suppression pool and drywell spray mode of the RHR system shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. By verifying that each of the required RHR pumps develops a flow of at least 500 gpm on recirculation flow through the RHR heat exchanger and suppression pool spray sparger when tested pursuant to Specification 4.0.5.
- c. By performance of an air or smoke flow test of the drywell spray nozzles at least once per 5 years and verifying that each spray nozzle is unobstructed.

^aWhenever both RHR subsystems are inoperable, if unable to attain COLD SHUTDOWN as required by this ACTION, maintain reactor coolant temperature as low as practical by use of alternate heat removal methods.

With the RHR pump suction path aligned to the reactor pressure vessel for shutdown cooling the RHR minimum flow valve may be deenergized in the closed position.

CONTAINMENT SYSTEMS

SUPPRESSION POOL COOLING

LIMITING CONDITION FOR OPERATION

3.6.2.3 The suppression pool cooling mode of the residual heat removal (RHR) system shall be OPERABLE with two independent loops, each loop consisting of:

- a. One OPERABLE RHR pump, and
- b. An OPERABLE flow path capable of recirculating water from the suppression chamber through an RHR heat exchanger.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

- a. With one suppression pool cooling loop inoperable, restore the inoperable loop to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- b. With both suppression pool cooling loops inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN^a within the next 24 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.3 The suppression pool cooling mode of the RHR system shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. By verifying that each of the required RHR pumps develops a flow of at least 10,000 gpm on recirculation flow through the RHR heat exchanger and the suppression pool when tested pursuant to Specification 4.0.5.

^aWhenever both RHR subsystems are inoperable, if unable to attain COLD SHUTDOWN as required by this ACTION, maintain reactor coolant temperature as low as practical by use of alternate heat removal methods.

With the RHR pump suction path aligned to the reactor pressure vessel for shutdown cooling the RHR minimum flow valve may be deenergized in the closed position.

REFUELING OPERATIONS

3/4.9.11 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

HIGH WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.11.1 At least one shutdown cooling mode loop of the residual heat removal (RHR) system shall be OPERABLE with at least:

- a. One OPERABLE RHR pump, and
- b. One OPERABLE RHR heat exchanger.

APPLICABILITY: OPERATIONAL CONDITION 5, when irradiated fuel is in the reactor vessel and the water level is greater than or equal to 20 feet 6 inches above the top of the reactor pressure vessel flange and heat losses to ambient* are not sufficient to maintain OPERATIONAL CONDITION 5.

ACTION:

With no RHR shutdown cooling mode loop OPERABLE, within 1 hour and at least once per 24 hours thereafter, verify the OPERABILITY of at least one alternate method capable of decay heat removal. Otherwise, suspend all operations involving an increase in the reactor decay heat load and establish SECONDARY CONTAINMENT INTEGRITY within 4 hours.

SURVEILLANCE REQUIREMENTS

4.9.11.1 At least once per 12 hours verify at least one RHR shutdown cooling mode loop is capable of taking suction from the reactor vessel and discharging back to the reactor vessel through an RHR heat exchanger with available cooling water.

*Ambient losses must be such that no increase in reactor vessel water temperature will occur (even though COLD SHUTDOWN conditions are being maintained).

With the RHR pump suction path aligned to the reactor pressure vessel for shutdown cooling the RHR minimum flow valve may be deenergized in the closed position.

REFUELING OPERATIONS

LOW WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.11.2 Reactor water level shall be maintained greater than or equal to 214 inches and two# shutdown cooling mode loops of the residual heat removal (RHR) system shall be OPERABLE and, at least one recirculation pump shall be in operation, or at least one shutdown cooling mode loop shall be in operation*** with each loop consisting of at least:

- a. One OPERABLE RHR pump, and
- b. One OPERABLE RHR heat exchanger.

APPLICABILITY: OPERATIONAL CONDITION 5 when irradiated fuel is in the reactor vessel and the water level is less than 20 feet 6 inches above the top of the reactor pressure vessel flange and heat losses to ambient** are not sufficient to maintain OPERATIONAL CONDITION 5.

ACTION:

- a. With less than the above required RHR shutdown cooling mode loops OPERABLE, within 1 hour and at least once per 24 hours thereafter, verify the operability of at least one alternate method capable of decay heat removal for each inoperable RHR shutdown cooling mode loop.
- b. With neither a recirculation pump nor an RHR shutdown cooling mode loop in operation immediately initiate corrective action to return either at least one recirculation pump or at least one RHR shutdown cooling mode loop to operation as soon as possible. Within 1 hour establish reactor coolant circulation by an alternate method and monitor reactor coolant temperature and pressure at least once per hour.
- c. With reactor water level less than 214 inches, within 1 hour restore reactor water level to the required level or place two recirculation pumps in operation or place two RHR shutdown cooling mode loops in operation.

SURVEILLANCE REQUIREMENTS

4.9.11.2.1 At least one shutdown cooling mode loop of the residual heat removal system or at least one recirculation pump shall be determined to be in operation and circulating reactor coolant at least once per 12 hours.

4.9.11.2.2 Verify reactor water level to be greater than or equal to 214 inches at least once per 12 hours.

4.9.11.2.3 At least once per 12 hours verify the required RHR shutdown cooling mode loop(s) are capable of taking suction from the reactor vessel and discharging back to the reactor vessel through the RHR heat exchanger(s) with their associated cooling water available.

#One RHR shutdown cooling mode loop may be inoperable for up to 2 hours for surveillance testing.

*The shutdown cooling pump may be removed from operation for up to 2 hours per 8-hour period.

##The RHR shutdown cooling pump may be removed from operation during hydrostatic testing.

**Ambient losses must be such that no increase in reactor vessel water temperature will occur (even though COLD SHUTDOWN conditions are being maintained).

*** With the RHR pump suction path aligned to the reactor pressure vessel for shutdown cooling the RHR minimum flow valve may be deenergized in the closed position.