ATTACHMENT 3

PROPOSED TECHNICAL SPECIFICATIONS

Technical Specification 3/4.10

"REFUELING OPERATIONS"

3.10 - LIMITING CONDITIONS FOR OPERATION

A. Reactor Mode Switch

The reactor mode switch shall be OPERABLE and locked in the Shutdown or Refuel position. When the reactor mode switch is locked in the Refuel position:

1. A control rod shall not be withdrawn unless the Refuel position one-rod-out interlock is OPERABLE.

2. CORE ALTERATION(s) shall not be performed using equipment associated with a Refuel position interlock unless at least the following associated Refuel position interlocks are OPERABLE for such equipment.

   a. All rods in.
   b. Refuel platform position.
   c. Refuel platform hoists fuel-loaded.
   d. Fuel grapple position.

APPLICABILITY:

OPERATIONAL MODE 5[a][b].

ACTION:

1. With the reactor mode switch not locked in the Shutdown or Refuel position as specified, suspend CORE ALTERATION(s) and lock the reactor mode switch in the Shutdown or Refuel position.

4.10 - SURVEILLANCE REQUIREMENTS

A. Reactor Mode Switch

1. The reactor mode switch shall be verified to be locked in the Shutdown or Refuel position as specified:

   a. Within 2 hours prior to:

      1. Beginning CORE ALTERATION(s), and

      2. Resuming CORE ALTERATION(s) when the reactor mode switch has been unlocked.

   b. At least once per 12 hours.

2. Each of the required reactor mode switch Refuel position interlocks[c] shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST within 24 hours prior to the start of and at least once per 7 days during control rod withdrawal or CORE ALTERATION(s), as applicable.

3. Each of the required reactor mode switch Refuel position interlocks[c] that is affected shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST prior to resuming control rod withdrawal or

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a See Special Test Exceptions 3.12.A and 3.12.B

b The reactor shall be maintained in OPERATIONAL MODE 5 whenever fuel is in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

c The reactor mode switch may be placed in the Run or Startup/Hot Standby position to test the switch interlock functions provided that all control rods are verified to remain fully inserted by a second licensed operator or other technically qualified individual.

3.10 - LIMITING CONDITIONS FOR OPERATION	4.10 - SURVEILLANCE REQUIREMENTS
2. With the one-rod-out interlock inoperable, lock the reactor mode switch in the Shutdown position.	CORE ALTERATION(s), as applicable, following repair, maintenance or replacement of any component that could affect the Refuel position interlock.
3. With any of the above required Refuel position equipment interlocks inoperable, suspend CORE ALTERATION(s) with equipment associated with the inoperable Refuel position equipment interlock.	

3.10 - LIMITING CONDITIONS FOR OPERATION

B. Instrumentation

At least 2 source range monitor[a] (SRM) CHANNEL(s) shall be OPERABLE and inserted to the normal operating level with:

1. Continuous visual indication in the control room,

2. One of the required SRM detectors located in the quadrant where CORE ALTERATION(s) are being performed and the other required SRM detector located in an adjacent quadrant, and

3. Unless adequate SHUTDOWN MARGIN has been demonstrated per Specification 3.3.A and the "one-rod-out" Refuel position interlock has been demonstrated OPERABLE per Specification 3.10.A, the "shorting links" shall be removed from the RPS circuitry prior to and during the time any control rod is withdrawn[b].

APPLICABILITY:

OPERATIONAL MODE 5, unless the following conditions are met:

1. No more than two fuel assemblies are present in each core quadrant associated with an SRM;

4.10 - SURVEILLANCE REQUIREMENTS

B. Instrumentation

Each of the required SRM channels shall be demonstrated OPERABLE by:

1. At least once per 12 hours:

   a. Performance of a CHANNEL CHECK.

   b. Verifying the detectors are inserted to the normal operating level, and

   c. During CORE ALTERATION(s), verifying that the detector of an OPERABLE SRM CHANNEL is located in the core quadrant where CORE ALTERATION(s) are being performed and another is located in an adjacent quadrant.

2. Performance of a CHANNEL FUNCTIONAL TEST:

   a. Within 24 hours prior to the start of CORE ALTERATION(s), and

   b. At least once per 7 days.

3. Verifying that the channel count rate is at least 3 cps[c]:

   a. Prior to control rod withdrawal,

   b. Prior to and at least once per 12 hours during CORE ALTERATION(s),

   c. At least once per 24 hours.

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a The use of special movable detectors during CORE ALTERATION(s) in place of the normal SRM neutron detectors is permissible as long as these special detectors are connected to the normal SRM circuits.

b Not required for control rods removed per Specification 3.10.I and 3.10.J

c May be reduced to 0.7 cps provided signal to noise ratio is greater than or equal to 2.0

3.10 - LIMITING CONDITIONS FOR OPERATION	4.10 - SURVEILLANCE REQUIREMENTS
2. While in the core, these two fuel assemblies are in locations adjacent to the SRM; and	4. Verifying, within 8 hours prior to and at least once per 12 hours during the time any control rod is withdrawn[(b)] that the "shorting links" have been removed from the RPS circuitry unless adequate SHUTDOWN MARGIN has been demonstrated per Specification 3.3.A and the "one-rod-out" Refuel position interlock has been demonstrated OPERABLE per Specification 3.10.A.
3. In the case of movable detectors, each group of fuel assemblies shall be separated by at least two fuel cell locations from any other fuel assemblies.	
ACTION:	
With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATION(s) and fully insert all insertable control rods.	

b Not required for control rods removed per Specification 3.10.I or 3.10.J

3.10 - LIMITING CONDITIONS FOR OPERATION

C. Control Rod Position

All control rods shall be fully inserted[a].

APPLICABILITY:

OPERATIONAL MODE 5 during CORE ALTERATION(s)[b].

ACTION:

With all control rods not fully inserted, suspend all other CORE ALTERATION(s), except that one control rod may be withdrawn under control of the reactor mode switch Refuel position one-rod-out interlock.

4.10 - SURVEILLANCE REQUIREMENTS

C. Control Rod Position

All control rods shall be verified to be fully inserted, except as specified:

1. Within 2 hours prior to:
   a. The start of CORE ALTERATION(s).
   b. The withdrawal of one control rod under the control of the reactor mode switch Refuel position one-rod-out interlock.
2. At least once per 12 hours.

a Except control rods removed per Specification 3.10.I or 3.10.J or one control rod withdrawn under control of the reactor mode switch refuel position one-rod-out interlock.

b See Special Test Exception 3.12.B

3.10 - LIMITING CONDITIONS FOR OPERATION

D. Decay Time

The reactor shall be subcritical for at least 24 hours.

APPLICABILITY:

OPERATIONAL MODE 5, during movement of irradiated fuel in the reactor pressure vessel.

ACTION:

With the reactor subcritical for less than 24 hours, suspend all operations involving movement of irradiated fuel in the reactor pressure vessel.

4.10 - SURVEILLANCE REQUIREMENTS

D. Decay Time

The reactor shall be determined to have been subcritical for at least 24 hours by verification of the date and time of subcriticality prior to movement of irradiated fuel in the reactor pressure vessel.

3.10 - LIMITING CONDITIONS FOR OPERATION

E. Communications

Direct communication shall be maintained between the control room and refueling platform personnel.

APPLICABILITY:

OPERATIONAL MODE 5, during CORE ALTERATION(s)[a].

ACTION:

When direct communication between the control room and refueling platform personnel cannot be maintained, immediately suspend CORE ALTERATION(s).

4.10 - SURVEILLANCE REQUIREMENTS

E. Communications

Direct communication between the control room and refueling platform personnel shall be demonstrated within one hour prior to the start of and at least once per 12 hours during CORE ALTERATION(s).

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a Except movement of control rods with their normal drive system.

3.10 - LIMITING CONDITIONS FOR OPERATION

F. Crane Travel

All movements of a spent fuel shipping cask above the 545 foot elevation of the Reactor Building shall be controlled by the "Restricted Mode" path control system of the reactor building crane.

APPLICABILITY:

At all times.

ACTION:

With the requirements of the above specification not satisfied:

1. Operation may continue with a failed controlled area limit switch for 48 hours provided an operator is on the refueling floor to assure the reactor building crane is operated within the restricted zone painted on the floor, or

2. Place the crane load in a safe condition.

The provisions of Specification 3.0.C are not applicable.

4.10 - SURVEILLANCE REQUIREMENTS

F. Crane Travel

1. The spent fuel shipping cask "Restricted Mode" path control system of the reactor building crane shall be demonstrated OPERABLE within 7 days prior to and at least once per 7 days during spent fuel shipping cask movement over the refueling floor.

2. The redundant crane including the rope, hooks, slings, shackles and other operating mechanisms shall be inspected prior to spent fuel shipping cask handling operations and the rope will be replaced if any of the following conditions exist:

   a. Twelve randomly distributed broken wires in one lay or four broken wires in one strand of one rope lay.

   b. Wear of one-third of the original diameter of outside individual wire.

   c. Kinking, crushing, or any other damage resulting in distortion of the rope.

   d. Evidence of any type of heat damage.

   e. Reductions from nominal diameter of more than 1/16 inch for a rope diameter from 7/8 inch to 1-1/4 inch inclusive.

3. The spent fuel cask will be lifted free of all support by a maximum of 1 foot and left hanging for 5 minutes prior to spent fuel cask handling operations.

3.10 - LIMITING CONDITIONS FOR OPERATION

G. Water Level - Reactor Vessel

At least 23 feet of water shall be maintained over the top of the reactor pressure vessel flange.

APPLICABILITY:

During handling of fuel assemblies or control rods within the reactor pressure vessel while in OPERATIONAL MODE 5 when the fuel assemblies or control rods being handled are irradiated or the fuel assemblies or control rods seated within the reactor vessel are irradiated.

ACTION:

With the requirements of the above specification not satisfied, suspend all operations involving handling of fuel assemblies or control rods within the reactor pressure vessel after placing all fuel assemblies and control rods in a safe condition.

4.10 - SURVEILLANCE REQUIREMENTS

G. Water Level - Reactor Vessel

The reactor vessel water level shall be determined to be at least its minimum required depth within 2 hours prior to the start of and at least once per 24 hours during handling of fuel assemblies or control rods within the reactor pressure vessel.

3.10 - LIMITING CONDITIONS FOR OPERATION

H. Water Level - Spent Fuel Storage Pool

At least 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated in the spent fuel storage pool racks.

APPLICABILITY:

Whenever irradiated fuel assemblies are in the spent fuel storage pool.

ACTION:

With the requirements of the above specification not satisfied, suspend all movement of fuel assemblies and crane operations with loads in the spent fuel storage pool area after placing the fuel assemblies and crane load in a safe condition. The provisions of Specification 3.0.C are not applicable.

4.10 - SURVEILLANCE REQUIREMENTS

H. Water Level - Spent Fuel Storage Pool

The water level in the spent fuel storage pool shall be determined to be at least at its minimum required depth at least once per 7 days.

3.10 - LIMITING CONDITIONS FOR OPERATION

I. Single Control Rod Removal

One control rod and/or the associated control rod drive mechanism may be removed from the core and/or reactor pressure vessel provided that at least the following requirements are satisfied until a control rod and associated control rod drive mechanism are reinstalled and the control rod is fully inserted in the core.

1. The reactor mode switch is OPERABLE and locked in the Shutdown position or in the Refuel position per Table 1-2 and Specification 3.10.A.

2. The source range monitors (SRM) are OPERABLE per Specification 3.10.B.

3. The SHUTDOWN MARGIN requirements of Specification 3.3.A are satisfied, except that the control rod selected to be removed;

   a. May be assumed to be the highest worth control rod required to be assumed to be fully withdrawn by the SHUTDOWN MARGIN test, and

   b. Need not be assumed to be immovable or unscrammable.

4. All other control rods in a five-by-five array centered on the control rod being removed are either:

   a. Fully inserted and electrically or hydraulically disarmed, or

   b. The four fuel assemblies surrounding the control rod or control rod drive mechanism to be removed from the core and/or reactor vessel are removed from the core cell.

4.10 - SURVEILLANCE REQUIREMENTS

I. Single Control Rod Removal

Within 4 hours prior to the start of removal of a control rod and/or the associated control rod drive mechanism from the core and/or reactor pressure vessel and at least once per 24 hours thereafter until a control rod and associated control drive mechanism are reinstalled and the control rod is fully inserted in the core, verify that:

1. The reactor mode switch is OPERABLE per Surveillance Requirement 4.1.A.1 or 4.10.A.2, as applicable, and locked in the Shutdown position or in the Refuel position with the "one-rod-out" Refuel position interlock OPERABLE per Specification 3.10.A.

2. The SRM CHANNEL(s) are OPERABLE per Specification 3.10.B.

3. The SHUTDOWN MARGIN requirements of Specification 3.3.A are satisfied per Specification 3.10.I.3.

4. All other control rods in a five-by-five array centered on the control rod being removed are either:

   a. Fully inserted and electrically or hydraulically disarmed, or

   b. The four fuel assemblies surrounding the control rod or control rod drive mechanism to be removed from the core and/or reactor vessel are removed from the core cell.

5. All other control rods are fully inserted.

3.10 - LIMITING CONDITIONS FOR OPERATION

4.10 - SURVEILLANCE REQUIREMENTS

5. All other control rods are fully inserted.

APPLICABILITY:

OPERATIONAL MODE(s) 4 and 5.

ACTION:

With the requirements of the above specification not satisfied, suspend removal of the control rod and/or associated control rod drive mechanism from the core and/or reactor pressure vessel and initiate ACTION to satisfy the above requirements.

3.10 - LIMITING CONDITIONS FOR OPERATION

J. Multiple Control Rod Removal

Any number of control rods and/or control rod drive mechanisms may be removed from the core and/or reactor pressure vessel provided that at least the following requirements are satisfied until all control rods and control rod drive mechanisms are reinstalled and all control rods are fully inserted in the core.

1. The reactor mode switch is OPERABLE and locked in the Shutdown position or in the Refuel position per Specification 3.10.A, except that the Refuel position "one-rod-out" interlock may be bypassed, as required, for those control rods and/or control rod drive mechanisms to be removed, after the fuel assemblies have been removed as specified below.

2. The source range monitors (SRM) are OPERABLE per Specification 3.10.B.

3. The SHUTDOWN MARGIN requirements of Specification 3.3.A are satisfied.

4. All other control rods are either fully inserted or have the surrounding four fuel assemblies removed from the core cell.

5. The four fuel assemblies surrounding each control rod or control rod drive mechanism to be removed from the core and/or reactor vessel are removed from the core cell.

APPLICABILITY:

OPERATIONAL MODE 5.

4.10 - SURVEILLANCE REQUIREMENTS

J. Multiple Control Rod Removal

1. Within 4 hours prior to the start of removal of control rods and/or control rod drive mechanisms from the core and/or reactor pressure vessel and at least once per 24 hours thereafter until all control rods and control rod drive mechanisms are reinstalled and all control rods are fully inserted in the core, verify that:

   a. The reactor mode switch is OPERABLE per Surveillance Requirement 4.1.A.1 or 4.10.A.2, as applicable, and locked in the Shutdown position or in the Refuel position per Specification 3.10.A.

   b. The SRM CHANNEL(s) are OPERABLE per Specification 3.10.B.

   c. The SHUTDOWN MARGIN requirements of Specification 3.3.A are satisfied.

   d. All other control rods are either fully inserted or have the surrounding four fuel assemblies removed from the core cell.

   e. The four fuel assemblies surrounding each control rod and/or control rod drive mechanism to be removed from the core and/or reactor vessel are removed from the core cell.

3.10 - LIMITING CONDITIONS FOR OPERATION

ACTION:

With the requirements of the above specification not satisfied, suspend removal of control rods and/or control rod drive mechanisms from the core and/or reactor pressure vessel and initiate ACTION to satisfy the above requirements.

4.10 - SURVEILLANCE REQUIREMENTS

2. Following replacement of all control rods and/or control rod drive mechanisms removed in accordance with this specification, perform a functional test of the "one-rod-out" Refuel position interlock, if this function had been bypassed.

3.10 - LIMITING CONDITIONS FOR OPERATION

K. Shutdown Cooling and Coolant Circulation - High Water Level

At least one shutdown cooling (SDC) loop shall be OPERABLE and in operation[a], with at least:

1. One OPERABLE SDC pump, and

2. One OPERABLE SDC heat exchanger.

APPLICABILITY:

OPERATIONAL MODE 5, when irradiated fuel is in the reactor vessel and the water level is $\geq$23 feet above the top of the reactor pressure vessel flange.

ACTION:

1. With no SDC loop OPERABLE, within one hour and at least once per 24 hours thereafter, demonstrate 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.

2. With no SDC loop in operation, within one hour establish reactor coolant circulation by an alternate method, monitor reactor coolant temperature at least once per hour, and verify reactor coolant circulation at least once per 12 hours.

4.10 - SURVEILLANCE REQUIREMENTS

K. Shutdown Cooling and Coolant Circulation - High Water Level

At least one SDC loop shall be verified to be in operation and circulating reactor coolant at least once per 12 hours.

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

3.10 - LIMITING CONDITIONS FOR OPERATION

L. Shutdown Cooling and Coolant Circulation - Low Water Level

Two shutdown cooling (SDC) loops shall be OPERABLE and at least one loop shall be in operation[a], with each loop consisting of at least:

1. One OPERABLE SDC pump, and

2. One OPERABLE SDC heat exchanger.

APPLICABILITY:

OPERATIONAL MODE 5, when irradiated fuel is in the reactor vessel and the water level is <23 feet above the top of the reactor pressure vessel flange.

ACTION:

1. With less than the above required SDC loops OPERABLE, within one hour and at least once per 24 hours thereafter, demonstrate the OPERABILITY of at least one alternate method capable of decay heat removal for each inoperable SDC loop.

2. With no SDC loop in operation, within one hour establish reactor coolant circulation by an alternate method, monitor reactor coolant temperature at least once per hour, and verify reactor coolant circulation at least once per 12 hours.

4.10 - SURVEILLANCE REQUIREMENTS

L. Shutdown Cooling and Coolant Circulation - Low Water Level

At least one SDC loop shall be verified to be in operation and circulating reactor coolant at least once per 12 hours.

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

BASES

3/4.10.A Reactor Mode Switch

Locking the OPERABLE reactor mode switch in the Shutdown or Refuel position, as specified, ensures that the restrictions on control rod withdrawal and refueling platform movement during the refueling operations are properly activated. These conditions reinforce the refueling procedures and reduce the probability of inadvertent criticality, damage to reactor internals or fuel assemblies, and exposure of personnel to excessive radioactivity.

The addition of large amounts of reactivity to the core is prevented by operating procedures, which are in turn backed up by refueling interlocks on rod withdrawal and movement of the refueling platform. When the mode switch is in the Refuel position, interlocks prevent the refueling platform from being moved over the core if a control rod is withdrawn and fuel is on a hoist. If the refueling platform is over the core with fuel on a hoist, control rod motion is blocked by the interlocks. With the mode switch in the refuel position only one control rod can be withdrawn.

3/4.10.B Instrumentation

The OPERABILITY of at least two source range monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core, whenever reactor criticality is possible.

The source range monitors (SRM) are provided to monitor the core during periods of station shutdown and to guide the operator during refueling operations and reactor startup. Requiring two OPERABLE source range monitors in and adjacent to any core quadrant where fuel or control rods are being moved assures adequate monitoring of that quadrant during such alterations. Requiring a minimum of 3 counts per second whenever criticality is possible provides assurance that neutron flux is being monitored. The SRM system is designed to provide a signal-to-noise ratio of at least 3:1 and a count rate of at least 3 counts per second. For a signal-to-noise ratio of 2:1, the count rate must be at least 0.7 counts per second. Criticality is considered to be impossible if there are no more than two assemblies in a quadrant and if these are in locations adjacent to the source range monitors (i.e., spatially separated).

Special movable detectors may be used during CORE ALTERATION(s) in place of the normal SRM neutron detectors. These special detectors must be connected to the normal SRM circuits such that the applicable neutron flux indication, control rod blocks and scram signals can be generated. The special detectors provide more flexibility in monitoring reactivity changes during fuel loading since they can be positioned anywhere within the core during refueling provided they meet the location requirements of the specification.

When the Reactor Protection System shorting links are removed, the source range monitors provide added protection against local criticalities by providing an initiating signal for a reactor scram on high neutron flux.

BASES

3/4.10.C Control Rod Position

The requirement that all control rods be inserted during other CORE ALTERATION(s) ensures that fuel will not be loaded into a cell without an inserted control rod.

3/4.10.D Decay Time

The minimum requirement for reactor subcriticality prior to fuel movement ensures that sufficient time has elapsed to allow the radioactive decay of the short lived fission products. This decay time is consistent with the assumptions used in the accident analyses.

3/4.10.E Communications

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status regarding core reactivity conditions during movement of fuel within the reactor pressure vessel.

3/4.10.F Crane Travel

The operation of the reactor building crane in the Restricted Mode during spent fuel shipping cask handling operations, assures that the cask remains within the controlled area once it has been removed from its transport vehicle. The surveillance requirements specified assure that the crane is adequately inspected in accordance with the accepted ANSI Standard (B.30.2.0) and the manufacturer's recommendations to determine that the equipment is in satisfactory condition. The testing of the controlled area limit switches assures that the crane operation will be limited to the designated area in the Restricted Mode of operation. Requiring the lifting and holding of the cask for 5 minutes during the initial lift of cask handling operations puts a load test on the entire crane lifting mechanism as well as the braking system. Performing this test when the cask is being lifted initially assures that the system is OPERABLE prior to lifting the load to excessive height.

3/4.10.G Water Level - Reactor Vessel

3/4.10.H Water Level - Spent Fuel Storage Pool

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly. This minimum water depth is consistent with the assumptions of the accident analysis.

BASES

3/4.10.I Single Control Rod Removal

3/4.10.J Multiple Control Rod Removal

These specifications ensure that maintenance or repair of control rods or control rod drives will be performed under conditions that limit the probability of inadvertent criticality. The requirements for simultaneous removal of more than one control rod are more stringent since the SHUTDOWN MARGIN specification provides for the core to remain subcritical with only one control rod fully withdrawn.

Refueling interlocks restrict the movement of control rods and the operation of the refueling equipment to reinforce operational procedures that prevent the reactor from becoming critical. These interlocks prevent the withdrawal of more than one control rod. Under these conditions, since only one control rod can be withdrawn, the reactor core will always be shut down even with the highest worth control rod withdrawn if adequate SHUTDOWN MARGIN exists. Verification that all the other control rods are fully inserted is required to assure the SHUTDOWN MARGIN is within the limits. Verification that the five-by-five array of control rods are inserted and disarmed while the scram function for the withdrawn control rod is not available is required to ensure that the possibility of criticality remains precluded.

During refueling operations, no more than one control rod is permitted to be withdrawn from a core cell containing one or more fuel assemblies. When all four fuel assemblies are removed from a core cell, the control rod may be withdrawn with no restrictions. With no fuel assemblies in the core cell, the associated control rod has no reactivity control function and is not required to remain inserted. Prior to reloading fuel into the core cell, the associated control rod must be inserted to ensure that an inadvertent criticality does not occur.

3/4.10.K Shutdown Cooling and Coolant Circulation - High Water Level

3/4.10.L Shutdown Cooling and Coolant Circulation - Low Water Level

The requirement that at least one shutdown cooling loop be OPERABLE and in operation or that an alternate method capable of decay heat removal be demonstrated ensures that sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor pressure vessel below 140°F as required during REFUELING.

The requirement to have two shutdown cooling loops OPERABLE when there is less than 23 feet of water above the reactor pressure vessel flange ensures that a single failure of the operating loop will not result in a complete loss of shutdown cooling capability. With the reactor vessel head removed and 23 feet of water above the reactor pressure vessel flange a large heat sink is available for core cooling. Thus, in the event of a failure of the operating shutdown cooling loop, adequate time is provided to initiate alternate methods capable of decay heat removal or emergency procedures to cool the core.

3.10 - LIMITING CONDITIONS FOR OPERATION

A. Reactor Mode Switch

The reactor mode switch shall be OPERABLE and locked in the Shutdown or Refuel position. When the reactor mode switch is locked in the Refuel position:

1. A control rod shall not be withdrawn unless the Refuel position one-rod-out interlock is OPERABLE.

2. CORE ALTERATION(s) shall not be performed using equipment associated with a Refuel position interlock unless at least the following associated Refuel position interlocks are OPERABLE for such equipment.

   a. All rods in.
   b. Refuel platform position.
   c. Refuel platform hoists fuel-loaded.
   d. Fuel grapple position.

APPLICABILITY:

OPERATIONAL MODE 5[a][b].

ACTION:

1. With the reactor mode switch not locked in the Shutdown or Refuel position as specified, suspend CORE ALTERATION(s) and lock the reactor mode switch in the Shutdown or Refuel position.

4.10 - SURVEILLANCE REQUIREMENTS

A. Reactor Mode Switch

1. The reactor mode switch shall be verified to be locked in the Shutdown or Refuel position as specified:

   a. Within 2 hours prior to:

      1. Beginning CORE ALTERATION(s), and

      2. Resuming CORE ALTERATION(s) when the reactor mode switch has been unlocked.

   b. At least once per 12 hours.

2. Each of the required reactor mode switch Refuel position interlocks[c] shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST within 24 hours prior to the start of and at least once per 7 days during control rod withdrawal or CORE ALTERATION(s), as applicable.

3. Each of the required reactor mode switch Refuel position interlocks[c] that is affected shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST prior to resuming control rod withdrawal or

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a See Special Test Exceptions 3.12.A and 3.12.B

b The reactor shall be maintained in OPERATIONAL MODE 5 whenever fuel is in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

c The reactor mode switch may be placed in the Run or Startup/Hot Standby position to test the switch interlock functions provided that all control rods are verified to remain fully inserted by a second licensed operator or other technically qualified individual.

3.10 - LIMITING CONDITIONS FOR OPERATION	4.10 - SURVEILLANCE REQUIREMENTS
2. With the one-rod-out interlock inoperable, lock the reactor mode switch in the Shutdown position.	CORE ALTERATION(s), as applicable, following repair, maintenance or replacement of any component that could affect the Refuel position interlock.
3. With any of the above required Refuel position equipment interlocks inoperable, suspend CORE ALTERATION(s) with equipment associated with the inoperable Refuel position equipment interlock.	

3.10 - LIMITING CONDITIONS FOR OPERATION

B. Instrumentation

At least 2 source range monitor[a] (SRM) CHANNEL(s) shall be OPERABLE and inserted to the normal operating level with:

1. Continuous visual indication in the control room,

2. One of the required SRM detectors located in the quadrant where CORE ALTERATION(s) are being performed and the other required SRM detector located in an adjacent quadrant, and

3. Unless adequate SHUTDOWN MARGIN has been demonstrated per Specification 3.3.A and the "one-rod-out" Refuel position interlock has been demonstrated OPERABLE per Specification 3.10.A, the "shorting links" shall be removed from the RPS circuitry prior to and during the time any control rod is withdrawn[b].

APPLICABILITY:

OPERATIONAL MODE 5, unless the following conditions are met:

1. No more than two fuel assemblies are present in each core quadrant associated with an SRM;

4.10 - SURVEILLANCE REQUIREMENTS

B. Instrumentation

Each of the required SRM channels shall be demonstrated OPERABLE by:

1. At least once per 12 hours:

   a. Performance of a CHANNEL CHECK.

   b. Verifying the detectors are inserted to the normal operating level, and

   c. During CORE ALTERATION(s), verifying that the detector of an OPERABLE SRM CHANNEL is located in the core quadrant where CORE ALTERATION(s) are being performed and another is located in an adjacent quadrant.

2. Performance of a CHANNEL FUNCTIONAL TEST:

   a. Within 24 hours prior to the start of CORE ALTERATION(s), and

   b. At least once per 7 days.

3. Verifying that the channel count rate is at least 3 cps[c]:

   a. Prior to control rod withdrawal,

   b. Prior to and at least once per 12 hours during CORE ALTERATION(s),

   c. At least once per 24 hours.

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a The use of special movable detectors during CORE ALTERATION(s) in place of the normal SRM neutron detectors is permissible as long as these special detectors are connected to the normal SRM circuits.

b Not required for control rods removed per Specification 3.10.I and 3.10.J

c May be reduced to 0.7 cps provided signal to noise ratio is greater than or equal to 2.0

3.10 - LIMITING CONDITIONS FOR OPERATION

2. While in the core, these two fuel assemblies are in locations adjacent to the SRM; and

3. In the case of movable detectors, each group of fuel assemblies shall be separated by at least two fuel cell locations from any other fuel assemblies.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATION(s) and fully insert all insertable control rods.

4.10 - SURVEILLANCE REQUIREMENTS

4. Verifying, within 8 hours prior to and at least once per 12 hours during the time any control rod is withdrawn[(b)] that the "shorting links" have been removed from the RPS circuitry unless adequate SHUTDOWN MARGIN has been demonstrated per Specification 3.3.A and the "one-rod-out" Refuel position interlock has been demonstrated OPERABLE per Specification 3.10.A.

b Not required for control rods removed per Specification 3.10.I or 3.10.J

3.10 - LIMITING CONDITIONS FOR OPERATION

C. Control Rod Position

All control rods shall be fully inserted[a].

APPLICABILITY:

OPERATIONAL MODE 5 during CORE ALTERATION(s)[b].

ACTION:

With all control rods not fully inserted, suspend all other CORE ALTERATION(s), except that one control rod may be withdrawn under control of the reactor mode switch Refuel position one-rod-out interlock.

4.10 - SURVEILLANCE REQUIREMENTS

C. Control Rod Position

All control rods shall be verified to be fully inserted, except as specified:

1. Within 2 hours prior to:
   a. The start of CORE ALTERATION(s).
   b. The withdrawal of one control rod under the control of the reactor mode switch Refuel position one-rod-out interlock.
2. At least once per 12 hours.

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a Except control rods removed per Specification 3.10.I or 3.10.J or one control rod withdrawn under control of the reactor mode switch refuel position one-rod-out interlock.

b See Special Test Exception 3.12.B

3.10 - LIMITING CONDITIONS FOR OPERATION

D. Decay Time

The reactor shall be subcritical for at least 24 hours.

APPLICABILITY:

OPERATIONAL MODE 5, during movement of irradiated fuel in the reactor pressure vessel.

ACTION:

With the reactor subcritical for less than 24 hours, suspend all operations involving movement of irradiated fuel in the reactor pressure vessel.

4.10 - SURVEILLANCE REQUIREMENTS

D. Decay Time

The reactor shall be determined to have been subcritical for at least 24 hours by verification of the date and time of subcriticality prior to movement of irradiated fuel in the reactor pressure vessel.

3.10 - LIMITING CONDITIONS FOR OPERATION

E. Communications

Direct communication shall be maintained between the control room and refueling platform personnel.

APPLICABILITY:

OPERATIONAL MODE 5, during CORE ALTERATION(s)[a].

ACTION:

When direct communication between the control room and refueling platform personnel cannot be maintained, immediately suspend CORE ALTERATION(s).

4.10 - SURVEILLANCE REQUIREMENTS

E. Communications

Direct communication between the control room and refueling platform personnel shall be demonstrated within one hour prior to the start of and at least once per 12 hours during CORE ALTERATION(s).

a Except movement of control rods with their normal drive system.

3.10 - LIMITING CONDITIONS FOR OPERATION

F. Crane Travel

All movements of a spent fuel shipping cask above the 623 foot elevation of the Reactor Building shall be controlled by the "Restricted Mode" path control system of the reactor building crane.

APPLICABILITY:

At all times.

ACTION:

With the requirements of the above specification not satisfied:

1. Operation may continue with a failed controlled area limit switch for 48 hours provided an operator is on the refueling floor to assure the reactor building crane is operated within the restricted zone painted on the floor, or
2. Place the crane load in a safe condition.

The provisions of Specification 3.0.C are not applicable.

4.10 - SURVEILLANCE REQUIREMENTS

F. Crane Travel

1. The spent fuel shipping cask "Restricted Mode" path control system of the reactor building crane shall be demonstrated OPERABLE within 7 days prior to and at least once per 7 days during spent fuel shipping cask movement above the 623 foot elevation of the reactor building.
2. The redundant crane including the rope, hooks, slings, shackles and other operating mechanisms shall be inspected prior to spent fuel shipping cask handling operations and the rope will be replaced if any of the following conditions exist:
   a. Twelve randomly distributed broken wires in one lay or four broken wires in one strand of one rope lay.
   b. Wear of one-third of the original diameter of outside individual wire.
   c. Kinking, crushing, or any other damage resulting in distortion of the rope.
   d. Evidence of any type of heat damage.
   e. Reductions from nominal diameter of more than 1/16 inch for a rope diameter from 7/8 inch to 1-1/4 inch inclusive.
3. The spent fuel cask will be lifted free of all support by a maximum of 1 foot and left hanging for 5 minutes prior to spent fuel cask handling operations.

3.10 - LIMITING CONDITIONS FOR OPERATION

G. Water Level - Reactor Vessel

At least 23 feet of water shall be maintained over the top of the reactor pressure vessel flange.

APPLICABILITY:

During handling of fuel assemblies or control rods within the reactor pressure vessel while in OPERATIONAL MODE 5 when the fuel assemblies or control rods being handled are irradiated or the fuel assemblies or control rods seated within the reactor vessel are irradiated.

ACTION:

With the requirements of the above specification not satisfied, suspend all operations involving handling of fuel assemblies or control rods within the reactor pressure vessel after placing all fuel assemblies and control rods in a safe condition.

4.10 - SURVEILLANCE REQUIREMENTS

G. Water Level - Reactor Vessel

The reactor vessel water level shall be determined to be at least its minimum required depth within 2 hours prior to the start of and at least once per 24 hours during handling of fuel assemblies or control rods within the reactor pressure vessel.

3.10 - LIMITING CONDITIONS FOR OPERATION

H. Water Level - Spent Fuel Storage Pool

At least 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated in the spent fuel storage pool racks.

APPLICABILITY:

Whenever irradiated fuel assemblies are in the spent fuel storage pool.

ACTION:

With the requirements of the above specification not satisfied, suspend all movement of fuel assemblies and crane operations with loads in the spent fuel storage pool area after placing the fuel assemblies and crane load in a safe condition. The provisions of Specification 3.0.C are not applicable.

4.10 - SURVEILLANCE REQUIREMENTS

H. Water Level - Spent Fuel Storage Pool

The water level in the spent fuel storage pool shall be determined to be at least at its minimum required depth at least once per 7 days.

3.10 - LIMITING CONDITIONS FOR OPERATION

I. Single Control Rod Removal

One control rod and/or the associated control rod drive mechanism may be removed from the core and/or reactor pressure vessel provided that at least the following requirements are satisfied until a control rod and associated control rod drive mechanism are reinstalled and the control rod is fully inserted in the core.

1. The reactor mode switch is OPERABLE and locked in the Shutdown position or in the Refuel position per Table 1-2 and Specification 3.10.A.

2. The source range monitors (SRM) are OPERABLE per Specification 3.10.B.

3. The SHUTDOWN MARGIN requirements of Specification 3.3.A are satisfied, except that the control rod selected to be removed;

   a. May be assumed to be the highest worth control rod required to be assumed to be fully withdrawn by the SHUTDOWN MARGIN test, and

   b. Need not be assumed to be immovable or unscrammable.

4. All other control rods in a five-by-five array centered on the control rod being removed are either:

   a. Fully inserted and electrically or hydraulically disarmed, or

   b. The four fuel assemblies surrounding the control rod or control rod drive mechanism to be removed from the core and/or reactor vessel are removed from the core cell.

4.10 - SURVEILLANCE REQUIREMENTS

I. Single Control Rod Removal

Within 4 hours prior to the start of removal of a control rod and/or the associated control rod drive mechanism from the core and/or reactor pressure vessel and at least once per 24 hours thereafter until a control rod and associated control drive mechanism are reinstalled and the control rod is fully inserted in the core, verify that:

1. The reactor mode switch is OPERABLE per Surveillance Requirement 4.1.A.1 or 4.10.A.2, as applicable, and locked in the Shutdown position or in the Refuel position with the "one-rod-out" Refuel position interlock OPERABLE per Specification 3.10.A.

2. The SRM CHANNEL(s) are OPERABLE per Specification 3.10.B.

3. The SHUTDOWN MARGIN requirements of Specification 3.3.A are satisfied per Specification 3.10.I.3.

4. All other control rods in a five-by-five array centered on the control rod being removed are either:

   a. Fully inserted and electrically or hydraulically disarmed, or

   b. The four fuel assemblies surrounding the control rod or control rod drive mechanism to be removed from the core and/or reactor vessel are removed from the core cell.

5. All other control rods are fully inserted.

3.10 - LIMITING CONDITIONS FOR OPERATION

4.10 - SURVEILLANCE REQUIREMENTS

5. All other control rods are fully inserted.

APPLICABILITY:

OPERATIONAL MODE(s) 4 and 5.

ACTION:

With the requirements of the above specification not satisfied, suspend removal of the control rod and/or associated control rod drive mechanism from the core and/or reactor pressure vessel and initiate ACTION to satisfy the above requirements.

3.10 - LIMITING CONDITIONS FOR OPERATION

J. Multiple Control Rod Removal

Any number of control rods and/or control rod drive mechanisms may be removed from the core and/or reactor pressure vessel provided that at least the following requirements are satisfied until all control rods and control rod drive mechanisms are reinstalled and all control rods are fully inserted in the core.

1. The reactor mode switch is OPERABLE and locked in the Shutdown position or in the Refuel position per Specification 3.10.A, except that the Refuel position "one-rod-out" interlock may be bypassed, as required, for those control rods and/or control rod drive mechanisms to be removed, after the fuel assemblies have been removed as specified below.

2. The source range monitors (SRM) are OPERABLE per Specification 3.10.B.

3. The SHUTDOWN MARGIN requirements of Specification 3.3.A are satisfied.

4. All other control rods are either fully inserted or have the surrounding four fuel assemblies removed from the core cell.

5. The four fuel assemblies surrounding each control rod or control rod drive mechanism to be removed from the core and/or reactor vessel are removed from the core cell.

APPLICABILITY:

OPERATIONAL MODE 5.

4.10 - SURVEILLANCE REQUIREMENTS

J. Multiple Control Rod Removal

1. Within 4 hours prior to the start of removal of control rods and/or control rod drive mechanisms from the core and/or reactor pressure vessel and at least once per 24 hours thereafter until all control rods and control rod drive mechanisms are reinstalled and all control rods are fully inserted in the core, verify that:

   a. The reactor mode switch is OPERABLE per Surveillance Requirement 4.1.A.1 or 4.10.A.2, as applicable, and locked in the Shutdown position or in the Refuel position per Specification 3.10.A.

   b. The SRM CHANNEL(s) are OPERABLE per Specification 3.10.B.

   c. The SHUTDOWN MARGIN requirements of Specification 3.3.A are satisfied.

   d. All other control rods are either fully inserted or have the surrounding four fuel assemblies removed from the core cell.

   e. The four fuel assemblies surrounding each control rod and/or control rod drive mechanism to be removed from the core and/or reactor vessel are removed from the core cell.

3.10 - LIMITING CONDITIONS FOR OPERATION

ACTION:

With the requirements of the above specification not satisfied, suspend removal of control rods and/or control rod drive mechanisms from the core and/or reactor pressure vessel and initiate ACTION to satisfy the above requirements.

4.10 - SURVEILLANCE REQUIREMENTS

2. Following replacement of all control rods and/or control rod drive mechanisms removed in accordance with this specification, perform a functional test of the "one-rod-out" Refuel position interlock, if this function had been bypassed.

3.10 - LIMITING CONDITIONS FOR OPERATION

K. Residual Heat Removal and Coolant Circulation - High Water Level

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

1. One OPERABLE RHR pump, and

2. One OPERABLE RHR heat exchanger.

APPLICABILITY:

OPERATIONAL MODE 5, when irradiated fuel is in the reactor vessel and the water level is $\geq$23 feet above the top of the reactor pressure vessel flange.

ACTION:

With no RHR shutdown cooling mode loop OPERABLE, within one hour and at least once per 24 hours thereafter, demonstrate 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.

4.10 - SURVEILLANCE REQUIREMENTS

K. Residual Heat Removal and Coolant Circulation - High Water Level

1. At least one shutdown cooling mode loop of the RHR system shall be verified to be capable of circulating reactor coolant at least once per 12 hours.

2. Monitor the reactor coolant temperature at least once per hour.

3.10 - LIMITING CONDITIONS FOR OPERATION

L. Residual Heat Removal and Coolant Circulation - Low Water Level

Two shutdown cooling mode loops of the residual heat removal (RHR) system shall be OPERABLE, with each loop consisting of at least:

1. One OPERABLE RHR pump, and
2. One OPERABLE RHR heat exchanger.

APPLICABILITY:

OPERATIONAL MODE 5, when irradiated fuel is in the reactor vessel and the water level is <23 feet above the top of the reactor pressure vessel flange.

ACTION:

With less than the above required shutdown cooling mode loops of the RHR system OPERABLE, within one hour and at least once per 24 hours thereafter, demonstrate the OPERABILITY of at least one alternate method capable of decay heat removal for each inoperable RHR shutdown cooling mode loop.

4.10 - SURVEILLANCE REQUIREMENTS

L. Residual Heat Removal and Coolant Circulation - Low Water Level

1. At least one shutdown cooling mode loop of the RHR system shall be verified to be capable of circulating reactor coolant at least once per 12 hours.
2. Monitor the reactor coolant temperature at least once per hour.

BASES

3/4.10.A Reactor Mode Switch

Locking the OPERABLE reactor mode switch in the Shutdown or Refuel position, as specified, ensures that the restrictions on control rod withdrawal and refueling platform movement during the refueling operations are properly activated. These conditions reinforce the refueling procedures and reduce the probability of inadvertent criticality, damage to reactor internals or fuel assemblies, and exposure of personnel to excessive radioactivity.

The addition of large amounts of reactivity to the core is prevented by operating procedures, which are in turn backed up by refueling interlocks on rod withdrawal and movement of the refueling platform. When the mode switch is in the Refuel position, interlocks prevent the refueling platform from being moved over the core if a control rod is withdrawn and fuel is on a hoist. If the refueling platform is over the core with fuel on a hoist, control rod motion is blocked by the interlocks. With the mode switch in the refuel position only one control rod can be withdrawn.

3/4.10.B Instrumentation

The OPERABILITY of at least two source range monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core, whenever reactor criticality is possible.

The source range monitors (SRM) are provided to monitor the core during periods of station shutdown and to guide the operator during refueling operations and reactor startup. Requiring two OPERABLE source range monitors in and adjacent to any core quadrant where fuel or control rods are being moved assures adequate monitoring of that quadrant during such alterations. Requiring a minimum of 3 counts per second whenever criticality is possible provides assurance that neutron flux is being monitored. The SRM system is designed to provide a signal-to-noise ratio of at least 3:1 and a count rate of at least 3 counts per second. For a signal-to-noise ratio of 2:1, the count rate must be at least 0.7 counts per second. Criticality is considered to be impossible if there are no more than two assemblies in a quadrant and if these are in locations adjacent to the source range monitors (i.e., spatially separated).

Special movable detectors may be used during CORE ALTERATION(s) in place of the normal SRM neutron detectors. These special detectors must be connected to the normal SRM circuits such that the applicable neutron flux indication, control rod blocks and scram signals can be generated. The special detectors provide more flexibility in monitoring reactivity changes during fuel loading since they can be positioned anywhere within the core during refueling provided they meet the location requirements of the specification.

When the Reactor Protection System shorting links are removed, the source range monitors provide added protection against local criticalities by providing an initiating signal for a reactor scram on high neutron flux.

BASES

3/4.10.C Control Rod Position

The requirement that all control rods be inserted during other CORE ALTERATION(s) ensures that fuel will not be loaded into a cell without an inserted control rod.

3/4.10.D Decay Time

The minimum requirement for reactor subcriticality prior to fuel movement ensures that sufficient time has elapsed to allow the radioactive decay of the short lived fission products. This decay time is consistent with the assumptions used in the accident analyses.

3/4.10.E Communications

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status regarding core reactivity conditions during movement of fuel within the reactor pressure vessel.

3/4.10.F Crane Travel

The operation of the reactor building crane in the Restricted Mode during spent fuel shipping cask handling operations assures that the cask remains within the controlled area once it has been removed from its transport vehicle. The surveillance requirements specified assure that the crane is adequately inspected in accordance with the accepted ANSI Standard (B.30.2.0) and the manufacturer's recommendations to determine that the equipment is in satisfactory condition. The testing of the controlled area limit switches assures that the crane operation will be limited to the designated area in the Restricted Mode of operation. Requiring the lifting and holding of the cask for 5 minutes during the initial lift of cask handling operations puts a load test on the entire crane lifting mechanism as well as the braking system. Performing this test when the cask is being lifted initially assures that the system is OPERABLE prior to lifting the load to excessive height.

3/4.10.G Water Level - Reactor Vessel

3/4.10.H Water Level - Spent Fuel Storage Pool

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly. This minimum water depth is consistent with the assumptions of the accident analysis.

BASES

3/4.10.I Single Control Rod Removal

3/4.10.J Multiple Control Rod Removal

These specifications ensure that maintenance or repair of control rods or control rod drives will be performed under conditions that limit the probability of inadvertent criticality. The requirements for simultaneous removal of more than one control rod are more stringent since the SHUTDOWN MARGIN specification provides for the core to remain subcritical with only one control rod fully withdrawn.

Refueling interlocks restrict the movement of control rods and the operation of the refueling equipment to reinforce operational procedures that prevent the reactor from becoming critical. These interlocks prevent the withdrawal of more than one control rod. Under these conditions, since only one control rod can be withdrawn, the reactor core will always be shut down even with the highest worth control rod withdrawn if adequate SHUTDOWN MARGIN exists. Verification that all the other control rods are fully inserted is required to assure the SHUTDOWN MARGIN is within the limits. Verification that the five-by-five array of control rods are inserted and disarmed while the scram function for the withdrawn control rod is not available is required to ensure that the possibility of criticality remains precluded.

During refueling operations, no more than one control rod is permitted to be withdrawn from a core cell containing one or more fuel assemblies. When all four fuel assemblies are removed from a core cell, the control rod may be withdrawn with no restrictions. With no fuel assemblies in the core cell, the associated control rod has no reactivity control function and is not required to remain inserted. Prior to reloading fuel into the core cell, the associated control rod must be inserted to ensure that an inadvertent criticality does not occur.

3/4.10.K Residual Heat Removal and Coolant Circulation - High Water Level

3/4.10.L Residual Heat Removal and Coolant Circulation - Low Water Level

The requirement that at least one shutdown cooling mode loop of the residual heat removal (RHR) system be OPERABLE or that an alternate method capable of decay heat removal be demonstrated ensures that sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor pressure vessel below 140°F as required during REFUELING.

The requirement to have two shutdown cooling mode loops of the RHR system OPERABLE when there is less than 23 feet of water above the reactor pressure vessel flange ensures that a single failure of the operating loop will not result in a complete loss of shutdown cooling capability. With the reactor vessel head removed and 23 feet of water above the reactor pressure vessel flange a large heat sink is available for core cooling. Thus, in the event of a failure of the operating shutdown cooling loop, adequate time is provided to initiate alternate methods capable of decay heat removal or emergency procedures to cool the core.

ATTACHMENT 4

EXISTING TECHNICAL SPECIFICATIONS

Technical Specification 3/4.10

"REFUELING OPERATIONS"

ATTACHMENT 4

DELETION OF CURRENT TECHNICAL SPECIFICATIONS

This technical specification amendment will replace the current sections 3/4.10, Refueling, for the Dresden Unit 2 and Unit 3 Technical Specifications. The specifications are replaced in its entirety with revised pages that combine the Unit 2 and Unit 3 specifications.

Delete the following pages:

DPR - 19	DPR - 25
3/4.10-1	3/4.10-1
3/4.10-2	3/4.10-2
3/4.10-3	3/4.10-3
3/4.10-4	3/4.10-4
3/4.10-5	3/4.10-5
3/4.10-6	3/4.10-6
3/4.10-7	3/4.10-7
3/4.10-8	3/4.10-8
B 3/4.10-9	B 3/4.10-9
B 3/4.10-10	B 3/4.10-10
B 3/4.10-11	B 3/4.10-11
B 3/4.10-12	B 3/4.10-12

ATTACHMENT 4

DELETION OF CURRENT TECHNICAL SPECIFICATIONS

This technical specification amendment will replace the current sections 3/4.10, Refueling, for the Quad Cities Unit 1 and Unit 2 Technical Specifications. The specifications are replaced in its entirety with revised pages that combine the Unit 1 and Unit 2 specifications.

Delete the following pages:

DPR - 29	DPR - 30
3/4.10-1	3/4.10-1
3/4.10-2	3/4.10-2
3/4.10-3	3/4.10-3
3/4.10-4	3/4.10-3a
3/4.10-5	3/4.10-4
3/4.10-6	3/4.10-5
3/4.10-7	3/4.10-6
3/4.10-8	--
3/4.10-9	--
3/4.10-10	--

ATTACHMENT 5

DRESDEN 2/3 DIFFERENCES

Technical Specification 3/4.10

"REFUELING OPERATIONS"

ATTACHMENT 5

COMPARISON OF DRESDEN UNIT 2 AND UNIT 3 TECHNICAL SPECIFICATIONS FOR THE IDENTIFICATION OF TECHNICAL DIFFERENCES

SECTION 3/4.10
"REFUELING"

Commonwealth Edison has conducted a comparison review of the Dresden Unit 2 and Unit 3 Technical Specifications to identify any technical differences in support of combining the Technical Specifications into one document. The intent of the review was not to identify any differences in presentation style (e.g. table formats, use of capital letters, etc.), punctuation or spelling errors, but rather to identify areas which the Technical Specifications are technically or administratively different.

The review of Section 3/4.10 "Refueling" did not reveal any technical differences.

ATTACHMENT 5

QUAD CITIES 1/2 DIFFERENCES

Technical Specification 3/4.10

"REFUELING OPERATIONS"

ATTACHMENT 5

COMPARISON OF QUAD CITIES UNIT 1 AND UNIT 2 TECHNICAL SPECIFICATIONS FOR THE IDENTIFICATION OF TECHNICAL DIFFERENCES

SECTION 3/4.10
"REFUELING"

Commonwealth Edison has conducted a comparison review of the Quad Cities Unit 1 and Unit 2 Technical Specifications to identify any technical differences in support of combining the Technical Specifications into one document. The intent of the review was not to identify any differences in presentation style (e.g. table formats, use of capital letters, etc.), punctuation or spelling errors, but rather to identify areas which the Technical Specifications are technically or administratively different.

The review of Section 3/4.10 "Refueling" did not reveal any technical differences.

ATTACHMENT 6

SIGNIFICANT HAZARDS CONSIDERATIONS AND ENVIRONMENTAL ASSESSMENT EVALUATION

Technical Specification 3/4.10

"REFUELING OPERATIONS"

ATTACHMENT 6

EVALUATION OF SIGNIFICANT HAZARDS CONSIDERATION

Commonwealth Edison has evaluated this proposed amendment and determined that it involves no significant hazards consideration. According to 10 CFR 50.92(c), a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility, in accordance with the proposed amendment, would not:

1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or

2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or

3) Involve a significant reduction in a margin of safety.

The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated because:

The proposed changes to specification 3/4.10 to delete the present applicability and objective sections represent administrative changes to format and presentation of material. The proposed changes provide the user with a format that will allow better access to needed information and provides concise Applicability and Action requirements. The additions of applicability and action requirements represent clarification of intended requirements that do not presently state all required conditions of operability or provide clearly stated action statements if the requirements are not met. The added requirements follow STS guidelines that are in use at many operating BWRs with similar design and operating configurations as Dresden and Quad Cities Stations.

The generic changes to the technical specifications involve administrative changes to format and arrangement of the material. As such, these changes cannot involve a significant increase in the probability or consequences of an accident previously evaluated.

Proposed Changes to the Refueling Interlocks Specifications

The proposed changes to the Refueling Interlocks specifications include the retention of present Refueling Interlock requirements in Operational Mode 5, during core alterations, and the addition of STS guidelines to allow the reactor mode switch to be in either the Refuel or Shutdown position. The proposed addition of the Shutdown reactor mode switch position provides consistency with the addition of the STS definition for Operational Mode 5 in Table 1-2. Present Applicability is during core alterations which is retained in the proposed changes. Clarifications are added to the proposed Applicability such that Refueling Interlocks are required in Operational Mode

5 during core alterations with equipment associated with the Refuel position interlocks. Proposed Actions are added where none presently exist and are taken from STS guidelines. The proposed Actions ensure that with Refueling Interlock LCO requirements not met, safe conditions are established so that Core Alterations are suspended and/or the reactor mode switch is locked in the Shutdown or Refuel position. Present Surveillance Requirements are retained in the proposed specification and STS provisions are added to verify that the reactor mode switch is locked in the Shutdown or Refuel position. The proposed changes maintain necessary operability of the Refueling Interlocks when required to perform their design function. No new Operational Modes are introduced by the proposed changes and the intent of present provisions is maintained. Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

Proposed Changes to the Core Monitoring Specifications

Present core monitoring requirements are retained in the proposed rewrite of these specifications. The present requirement for two SRM's to be operable during core alterations is retained along with the requirements for the SRM's to be inserted to the normal operating level, for one to be located in the quadrant where core alterations are taking place and one in an adjacent quadrant. The present allowance for use of a special movable detector in place of an SRM is retained. Present surveillance requirements are retained and have been demonstrated through use that they provide acceptable levels of testing to ensure the operability of the core monitoring instrumentation. The present core monitoring specifications do not contain remedial action provisions. Proposed actions are taken from proven STS guidelines and require that with the requirements of the LCO not met, all core alterations and control rod movement is suspended and all insertable control rods are inserted. Since at least the present level of core monitoring is retained by the proposed changes, they do not involve a significant increase in the probability or consequences of an accident previously evaluated.

Proposed Changes to the Spent Fuel Cask Handling Specifications

Present limitations on spent fuel cask handling are encompassed in the proposed rewrite of this specification. The proposed addition to this specification is an Action to specify that when operations are not in compliance with the LCO, that steps are to be taken to suspend heavy load handling operations and to initiate action to satisfy the LCO provisions. Since present, proven specifications are encompassed and provisions added help to ensure continued safe handling of heavy loads, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ATTACHMENT 6

Proposed Changes to the Fuel Storage Pool Water Level Specifications

Present provisions are used to develop the proposed changes to the Fuel Storage Pool Water Level specifications with the addition of STS action guidelines. Water level requirements of at least 23 feet above the top of fuel in the fuel storage pool are adopted when irradiated fuel is stored in the fuel storage pool. Present daily surveillance requirement to record the fuel storage pool level is changed to once per 7 days in accordance with STS guidelines. The proposed actions added from the STS are needed since no remedial action provisions currently exist. The proposed actions require with the water level requirement not met, that all operations involving handling of fuel assemblies and crane operations with loads in the spent fuel storage pool area be suspended after placing the fuel assemblies and crane load in a safe condition. The proposed changes help to ensure that safe conditions are established in the fuel storage pool when the pool water level is less than the lower limit of 23 feet above the top of fuel stored in the storage racks. Other present provisions, that are identical to STS, are retained. Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

Proposed Changes to the Control Rod and Control Rod Drive Maintenance - Single Control Rod Removal Specifications

Present provisions currently in use at Dresden and Quad Cities for control rod and control rod drive maintenance are replaced with more prescriptive STS guidelines. Present limitations of a maximum of two nonadjacent control rods that are allowed to be withdrawn for maintenance are replaced with requirements that only allow one control rod and/or control rod drive mechanism to be removed. Restrictions in place in order to allow this maintenance include requiring the reactor mode switch to be operable and locked in the Shutdown or Refuel position, the required SRMs to be operable, shutdown margin requirements to be met, and all other control rods in a five-by-five square array centered on the control rod to be removed, to be inserted and disarmed or the affected core cell being worked on to be defueled. The proposed LCO is more restrictive than present provisions and provides necessary controls on this maintenance activity. The proposed applicability of operational modes 4 and 5 reflects STS guidelines and provides acceptable plant conditions to perform the required maintenance considering the restrictions on these activities which are contained in the LCO. Present surveillance requirements are replaced with SRs that verify all the restrictions on control rod and/or control rod drive removal that are contained in the LCO. The addition of STS action provisions require suspension of maintenance activities if the provisions of the LCO are not met, and require that action be initiated to satisfy the LCO requirements. The addition of the STS allowance for the reactor mode switch to be in the Shutdown or Refuel position for this maintenance adds operational flexibility without reducing any protective features. In order to

withdraw control rods, the reactor mode switch must still be placed in the Refuel position. Control rod drive mechanisms can be removed with the reactor mode switch in either the Shutdown or Refuel position. The proposed changes add more restrictive STS guidelines that are applicable for use at Dresden and Quad Cities. Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

Proposed Changes to the Extended Core Maintenance - Multiple Control Rod Removal Specifications

The proposed changes for the Extended Core Maintenance - Multiple Control Rod Removal specifications are similar to those for control rod and control rod drive maintenance - single control rod removal. Present provisions currently in use at Dresden and Quad Cities for extended core maintenance are replaced with STS guidelines that contain more prescriptive LCO, action and surveillance requirements.

The LCO restrictions on removal of any number of control rods and/or control rod drive mechanisms include requiring the reactor mode switch to be operable and locked in the Shutdown or Refuel position, the SRMs to be operable per specification 3.10.B, the shutdown margin requirements to be met, all other control rods to be either inserted or their core cells defueled, and the core cell being worked on is defueled. Proposed applicability is restricted to operational mode 5 in accordance with STS guidelines. Present specifications do not contain Action provisions and STS guidelines are followed for this addition. The proposed Action requires suspension of the removal of control rods and/or control rod drive mechanisms from the core and/or reactor pressure vessel if the conditions of the LCO are not satisfied. Present surveillance requirements only verify that a core cell is defueled prior to maintenance activities. This present SR is replaced with STS SRs that verify all the conditions of the LCO within 4 hours prior to start of the removal of control rods and/or control rod drive mechanisms and at least once per 24 hours thereafter until all control rods and control rod drive mechanisms are reinstalled and all control rods are inserted in the core.The addition of the STS allowance for the reactor mode switch to be in the Shutdown or Refuel position for this maintenance adds operational flexibility without reducing any protective features. In order to withdraw control rods, the reactor mode switch must be in the Refuel position. Control rod drive mechanisms can be removed with the reactor mode switch in either the Shutdown or Refuel position. The proposed changes add more restrictive STS provisions on control rod and/or control rod drive mechanism removal for maintenance that are applicable for use at Dresden and Quad Cities. Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ATTACHMENT 6

Create the possibility of a new or different kind of accident from any previously evaluated because:

Since the Generic Changes proposed to the technical specifications are administrative in nature, they cannot create the possibility of a new or different kind of accident from any previously evaluated.

The proposed changes for Dresden and Quad Cities Technical Specification Section 3/4.10 are based on present provisions and STS guidelines or later operating BWR plants' NRC accepted changes. These proposed changes have been reviewed for acceptability at the Dresden and Quad Cities Nuclear Stations considering similarity of system or component design versus the STS or later operating BWRs. No new modes of operation are introduced by the proposed changes, considering the acceptable operational modes in present specifications, the STS, or later operating BWRs. The proposed changes do not modify existing setpoints or design assumptions for system or component operation. Proposed changes to action statements in many places add requirements that are not in the present technical specifications or adopt requirements that have been used successfully at other operating BWRs with designs similar to Dresden and Quad Cities. The proposed changes either maintain at least the present level of operability or adopt relaxations to present requirements which still provide a proven acceptable level of operability. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any previously evaluated.

Involve a significant reduction in the margin of safety because:

Due to the administrative nature of the generic changes, they do not involve a significant reduction in the margin of safety.

The proposed changes to Technical Specification Section 3/4.10 implement present requirements, the intent of present requirements, or provisions that have been found acceptable for use on other operating BWRs with system designs similar to that at Dresden and Quad Cities. The proposed changes are intended to improve readability, usability, and the understanding of technical specification requirements while maintaining acceptable levels of safe operation. The proposed changes have been evaluated and found to be acceptable for use at Dresden and Quad Cities based on system design, safety analysis requirements and operational performance. Since the proposed changes are based on NRC accepted provisions at other operating plants that are applicable at Dresden and Quad Cities and maintain necessary levels of system, component or parameter operability, the proposed changes do not involve a significant reduction in the margin of safety.

ATTACHMENT 6

Conclusion

Proposed Specifications 3/4.10.C, D, E, G, K and L are new requirements added to the proposed section.

Guidance has been provided in 51 FR 7744 for the application of standards to license change requests for determination of the existence of significant hazards considerations. This document provides examples of amendments which are not likely considered to involve significant hazards considerations.

This proposed amendment does not involve a significant relaxation of the criteria used to establish safety limits, a significant relaxation of the bases for the limiting safety system settings or a significant relaxation of the bases for the limiting conditions for operations. The proposed amendments most closely fit the example of changes that constitute an additional limitation, restriction, or control not presently included in the Technical Specifications, e.g., a more stringent surveillance requirement (e.(ii) of 51 FR 7751) and/or a purely administrative change (e.(i) of 51 FR 7751). Therefore, based on the guidance established in 10 CFR 50.92(c), the proposed changes do not constitute a significant hazards consideration.

ATTACHMENT 6

ENVIRONMENTAL ASSESSMENT STATEMENT APPLICABILITY REVIEW

Commonwealth Edison has evaluated the proposed amendment against the criteria for the identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.20. It has been determined that the proposed changes meet the criteria for a categorical exclusion as provided under 10 CFR 51.22 (c)(9). This conclusion has been determined because the changes requested do not pose significant hazards consideration or do not involve a significant increase in the amounts, and no significant changes in the types, of any effluent that may be released offsite. Additionally, this request does not involve a significant increase in individual or cumulative occupational radiation exposure. Therefore, the Environmental Assessment Statement is not applicable for these changes.

ATTACHMENT 7

GENERIC LETTER 87-09 IMPLEMENTATION

Technical Specification 3/4.10

"REFUELING OPERATIONS"

ATTACHMENT 7

APPLICATION OF GENERIC LETTER 87-09
REVISION TO SPECIFICATION 3.0.D

The Dresden/Quad Cities Technical Specification Upgrade Program has implemented the recommendations of Generic Letter 87-09. Included in these recommendations was a revision to Standard Technical Specification 3.0.4 for which these stations had no corresponding restriction. Under the proposed Specification, entry into an operational mode or other specified condition is permitted under compliance with the Action requirements. Indicated below is the method of implementation for this recommendation for each Action requirement in this package.

PROPOSED TECH SPEC	ACTION	APPL. MODEs	CONT. OPS IN APP. COND?	CAT	CLARIFICATION
3.10.A	1	5	If Suspension of Core Alterations	Yes	
	2	5	If Suspension of Core Alterations	Yes	
	3	5	If Suspension of Core Alterations	Yes	
3.10.B		5	If Suspension of Core Alterations	Yes	
3.10.C		5 during Core Alterations	Suspend Core Alterations	No	
3.10.D		5 during movement of fuel	Suspend Irradiated Fuel Movement	No	
3.10.E		5 during Core Alterations	Suspend Core Alterations	No	
3.10.F		Fuel in Spent Fuel Pool	Place Crane in Safe Condition	No	
3.10.G		5 during handling of fuel or control rods	Suspend Handling of Fuel Assemblies	No	
3.10.H		Fuel in Spent Fuel Pool	Suspend Handling of Fuel Assemblies	No	

PROPOSED TECH SPEC	ACTION	APPL. MODEs	CONT. OPS IN APP. COND?	CAT	CLARIFICATION
3.10.I		4 & 5	Suspend Removal of Control Rod	Yes	
3.10.J		5	Suspend Removal of Control Rods	Yes	
3.10.K	1	5	1/24 hrs	Yes	Within 1 hour and every 24 hours thereafter.
	2	5	1/1 hr	Yes	Within 1 hour and every 1 hour thereafter.
3.10.L	1	5	1/24 hrs	Yes	Within 1 hour and every 24 hours thereafter.
	2	5	1/1 hr	Yes	Within 1 hour and every 1 hour thereafter.