ENCLOSURE 3

PLANT HATCH - UNITS 1, 2
NRC DOCKETS 50-321, 50-366
OPERATING LICENSES DPR-57, NPF-5
REQUEST TO REVISE TECHNICAL SPECIFICATIONS:
MISCELLANEOUS REFUELING SPECIFICATIONS

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Unit 1

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1.0 Definitions

The following terms are defined so that a uniform interpretation of these specifications may be achieved.

A. (Deleted)

B. Cold Shutdown Condition - Cold shutdown condition means reactor operation with the Mode Switch in the SHUTDOWN position, coolant temperature ≤ 212°F, and with no core alterations permitted.* The Mode Switch may be placed in the REFUEL position while a single control rod and/or control rod drive is being removed from the core and/or reactor pressure vessel per Specification 3.10.E.3.

*During the performance of inservice hydrostatic or leakage testing with all control rods fully inserted and reactor coolant temperature > 212°F, and/or reactor vessel pressurized, the reactor may be considered to be in the Cold Shutdown Condition for the purpose of determining Limiting Condition for Operation applicability. Note that the Cold Shutdown Condition may be referred to in different ways throughout the Technical Specifications. For example, "reactor subcritical and reactor coolant temperature < 212°F," "irradiated fuel in the reactor vessel and the reactor is depressurized," "reactor water temperature < 212°F and reactor coolant system vented," or "reactor is not pressurized (i.e., ≤ 212°F)" should be interpreted as COLD SHUTDOWN. However, compliance with an ACTION requiring COLD SHUTDOWN shall require a reactor coolant temperature ≤ 212°F. In addition, compliance with the following Specifications is required when performing the hydrostatic or leakage testing under the identified conditions: 3.5.B.1.b, 3.5.C.1.c, 3.6.F.2.d, 3.7.C.1.a(7), 3.9.c, and applicable notes in Table 3.2-1.

C. Core Alteration - Core alteration shall be the movement of any fuel, sources, reactivity control components, or other components affecting reactivity within the reactor vessel with the vessel head removed and fuel in the vessel. Movement of source range monitors, local power range monitors, intermediate range monitors, traversing in-core probes, or special movable detectors (including undervessel replacement) is not considered a core alteration. Suspension of core alterations shall not preclude completion of movement of a component to a safe, conservative position.

D. Design Power - Design power refers to the power level at which the reactor is producing 105 percent of reactor vessel rated steam flow. Design power does not necessarily correspond to 105 percent of rated reactor power. The stated design power in megawatts thermal (MWt) is the result of a heat balance for a particular plant design. For Hatch Nuclear Plant Unit 1 the design power is approximately 2537 MWt.

E. Engineered Safety Features - Engineered safety features are those features provided for mitigating the consequences of postulated accidents, including for example containment, emergency core cooling, and standby gas treatment system.

F. Hot Shutdown Condition - Hot shutdown condition means reactor operation with the Mode Switch in the SHUTDOWN position, coolant temperature greater than 212°F, and no core alterations are permitted.*

G. Hot Standby Condition - Hot standby condition means reactor operation with the Mode Switch in the START & HOT STANDBY position, coolant temperature greater than 212°F, reactor pressure less than 1045 psig, critical.

H. Immediate - Immediate means that the required action shall be initiated as soon as practicable, considering the safe operation of the unit and the importance of the required action.

I. Instrument Calibration - An instrument calibration means the adjustment of an instrument output signal so that it corresponds, within acceptable range and accuracy, to a known value(s) of the parameter which the instrument monitors.

J. Instrument Channel - An instrument channel means an arrangement of a sensor and auxiliary equipment required to generate and transmit to a trip system a single trip signal related to the plant parameter monitored by that instrument channel.

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*During the performance of inservice hydrostatic or leakage testing with all control rods fully inserted and reactor coolant temperature > 212°F, and/or reactor vessel pressurized, the reactor may be considered to be in the Cold Shutdown Condition for the purpose of determining Limiting Condition for Operation applicability. However, compliance with an ACTION requiring COLD SHUTDOWN shall require a reactor coolant temperature ≤ 212°F.

Z. Reactor Pressure - Unless otherwise indicated, a reactor pressure listed in these Technical Specifications is that pressure measured at the reactor vessel steam dome.

AA. Refuel Mode - The reactor is in the Refuel Mode when fuel is in the reactor vessel with the head closure bolts less than fully tensioned or with the head removed. The Mode Switch may be in SHUTDOWN or REFUEL.

BB. Refueling Outage - Refueling [illegible] is the period of time between the shutdown of the Unit prior to a refueling and the startup of the Unit after that refueling.

CC. Run Mode - The reactor is in the Run Mode when the Mode Switch is in the RUN position. In this mode the reactor pressure is at or above 825 psig and the reactor protection system is energized with APRM Scram (excluding the APRM 15% of the flux scram) and APRM rod blocks in service.

DD. Safety Limit - The Safety Limits are limits below which the reasonable maintenance of the physical barriers which guard against the controlled release of radioactivity is assured. Exceeding such a limit requires Unit shutdown and review by the Atomic Energy Commission before resumption of Unit Operation. Operation beyond such a limit may not in itself result in serious consequences, but it indicates an operational deficiency subject to regulatory review.

EE. Secondary Containment Integrity - Secondary containment integrity means that the reactor building is intact and all the following conditions are met:

1. At least one door in each access opening is closed.

2. The standby gas treatment system is operable.

3. All automatic ventilation system isolation valves are operable or are secured in the isolated position.

FF. Shutdown Mode - The reactor is in the Shutdown Mode when the Mode Switch is in the SHUTDOWN position and no core alterations are permitted. When the Mode Switch is placed in the SHUTDOWN position a scram is initiated, power to the control rod drives is removed, and the reactor protection system trip systems are de-energized for two seconds and cannot be reset before ten seconds have elapsed.

3.10.E.1. Requirements for Withdrawal of 1 or 2 Control Rods (Continued)

a. performed. All other refueling interlocks shall be operable.

b. Prior to performing control rod drive maintenance without removing fuel assemblies:

(1) A shutdown margin test shall be made as described in Specification 4.10.E.1.b.

(2) All the control rod drives in the 5 x 5 rod array centered on the control rod or drive undergoing maintenance shall have their directional control valves electrically disarmed.

2. Requirements for Withdrawal of More Than 2 Control Rods

Any number of control rods may be withdrawn or removed from the reactor core provided the Mode Switch is locked in the REFUEL position. After the fuel assemblies in the two by two cell containing the control rod to be withdrawn are removed, the refueling interlock which prevents withdrawal of that control rod may be bypassed. All other interlocks shall be operable.

3. Requirements for Withdrawal of a Control Rod in the Cold Shutdown Condition

The Mode Switch may be placed in the REFUEL position while in the Cold Shutdown Condition to allow withdrawal of a single control rod or withdrawal and subsequent removal of the associated control rod drive provided at least the following requirements are met:

a. One of the following conditions exist:

(1) The Refuel position one-rod-out interlock is operable per Specification 3.10.A.1 (control rod full-in position indication must also be operable),

OR

(2) A control rod withdrawal block is inserted.

b. All other control rods are fully inserted.

4.10.E.1. Requirements for Withdrawal of 1 or 2 Control Rods (Continued)

b. Prior to performing control rod drive maintenance without removing fuel assemblies it shall be demonstrated that the core is subcritical by a margin of at least 0.38% ΔK with the highest worth control rod capable of withdrawal fully withdrawn.

3. Requirements for Withdrawal of a Control Rod in the Cold Shutdown Condition

For the condition of the Mode Switch being placed in the REFUEL position while in the Cold Shutdown Condition, verify the following:

a. The applicable surveillances are performed, at the required frequencies, for the LCOs specified in 3.10.E.3.a.1, if credit is being taken for Specification 3.10.E.3.a.1.

b. The applicable surveillances are performed, at the required frequencies, for the LCOs specified in 3.10.E.3.c.1, if credit is being taken for Specification 3.10.E.3.c.1.

c. One of the following conditions exists:

(1) The requirements are met for Specifications Table 3.1-1, Scram Numbers 1, 2, 3, and 8 (Inoperative and 15% Flux only); AND the Electric Power Monitoring for the Reactor Protection System is operable per Specification 3.9.D; AND all control rods are operable per Specification 3.3.

OR

(2) All other control rods in a five-by-five array centered on the control rod being withdrawn are disarmed AND the requirements of Specification 3.3.A, Core Reactivity Margin, are met except the single control rod to be withdrawn may be assumed to be the highest-worth control rod.

NOTE: If the control rod being withdrawn is not insertable, then requirement c.2 must be chosen.

With one or more of the above requirements not met with the affected control rod insertable, fully insert all insertable control rods AND place the Mode Switch in the SHUTDOWN position within one hour.

With one or more of the above requirements not met with the effected control rod not insertable, immediately suspend withdrawal of the control rod and removal of the associated CRD AND either fully insert all control rods as soon as practical or satisfy the applicable LCO requirements.

c. Prior to entering this condition, and every 24 hours thereafter, assure that:

(1) All other control rods in a five-by-five array centered on the control rod being withdrawn are disarmed, if credit is being taken for Specification 3.10.E.3.c.2, and

(2) All other control rods are fully inserted, and

(3) A control rod withdrawal block is inserted, if credit is being taken for Specification 3.10.E.3.a.2.

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3.10.E.1. Requirements for Withdrawal of 1 or 2 Control Rods

The maintenance is performed with the Mode Switch in the REFUEL position to provide the refueling interlocks normally available during refueling operations. In order to withdraw a second control rod after withdrawal of the first rod, it is necessary to bypass the refueling interlock on the first control rod which prevents more than one control rod from being withdrawn at the same time.

The requirement that an adequate shutdown margin be demonstrated and that all surrounding control rods have their directional control valves electrically disarmed ensures that inadvertent criticality cannot occur during this maintenance. The adequacy of the shutdown margin is verified by demonstrating that the core is shut down by a margin of 0.38 percent Δk with the strongest available control rod fully withdrawn. The safety design basis (FSAR - Section 3.6.5.2) states that the reactor must remain subcritical under all conditions with the single highest worth control rod fully withdrawn.

2. Requirements for Withdrawal of More Than 2 Control Rods

Specification 3.10.E.2. allows unloading of a significant portion of the reactor core. This operation is performed with the Mode Switch in the REFUEL position to provide the refueling interlocks normally available during refueling operations. In order to withdraw more than one control rod, it is necessary to bypass the refueling interlock on each withdrawn control rod which prevents more than one control rod from being withdrawn at a time. The requirement that the fuel assemblies in the cell controlled by the control rod be removed from the reactor core before the interlock can be bypassed ensures that withdrawal of another control rod does not result in inadvertent criticality. Each control rod provides primary reactivity control for the fuel assemblies in the cell associated with that control rod. Thus, removal of an entire cell (fuel assemblies plus control rod) results in a lower reactivity potential of the core.

3. Requirements for Withdrawal of a Control Rod in the Cold Shutdown Condition

Specification 3.10.E.3 allows the Mode Switch to be placed in the REFUEL position while in the Cold Shutdown Condition to allow withdrawal of a single control rod or withdrawal and subsequent removal of the associated control rod drive. The criteria listed emulate equipment operability conditions which normally exist in the Refuel Mode and are designed to preclude the possibility of an inadvertent criticality. The surveillance requirements listed provide assurance that these criteria are met before and during the operation.

F. Reactor Building Cranes

The reactor building crane and monorail hoist are required to be operable for handling the spent fuel cask, new fuel, or spent fuel pool gates. Administratively limiting the height that the spent fuel cask is raised over the refueling floor minimizes the damage that could result from an accident. The design of the reactor building and crane is such that casks of current design cannot be lifted more than two feet above the refueling floor. An analysis has been made which shows that the floor over which the spent fuel cask is handled can satisfactorily sustain a dropped cask from a height of 2 feet. Modifications to the main reactor building crane are being studied in order to increase its ability to withstand a single failure. A spent fuel cask will not be lifted until these modifications have been accepted by the NRC and the NRC has approved the lifting of a cask by the crane, and the appropriate Technical Specifications.

G. Spent Fuel Cask Lifting Trunnions and Yoke

Before lifting a spent fuel cask, the trunnions and yoke shall be in good working condition and properly connected.

LIMITING CONDITIONS FOR OPERATIONAL AND SURVEILLANCE REQUIREMENTS

BASES

CHANNEL FUNCTIONAL TEST

A CHANNEL FUNCTIONAL TEST shall be:

a. Analog channels - the injection of a simulated signal into the channel as close to the primary sensor as practicable to verify OPERABILITY including alarm and/or trip functions and channel failure trips.

b. Bistable channels - the injection of a simulated signal into the channel sensor to verify OPERABILITY including alarm and/or trip functions.

CORE ALTERATION

CORE ALTERATION shall be the movement of any fuel, sources, reactivity control components, or other components affecting reactivity within the reactor vessel with the vessel head removed and fuel in the vessel. Movement of source range monitors, local power range monitors, intermediate range monitors, traversing in-core probes, or special movable detectors (including undervessel replacement) is not considered a CORE ALTERATION. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe, conservative position.

CORE MAXIMUM FRACTION OF LIMITING POWER DENSITY

The CORE MAXIMUM FRACTION OF LIMITING POWER DENSITY (CMFLPD) shall be the largest FLPD which exists in the core for a given operating condition.

CORE OPERATING LIMITS REPORT

The CORE OPERATING LIMITS REPORT shall be the unit-specific document that provides core operating limits for the current operating reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Specification 6.9.1.11. Plant operation within these operating limits is addressed in individual specifications.

CRITICAL POWER RATIO

The CRITICAL POWER RATIO (CPR) shall be the ratio of that power in the assembly which is calculated by application of an NRC-approved critical power correlation to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.

$\bar{E}$-AVERAGE DISINTEGRATION ENERGY

$\bar{E}$ shall be the average, weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling, of the sum of the average beta and gamma energies per disintegration, in MeV, for isotopes with half lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

TABLE 1.2

OPERATIONAL CONDITIONS

CONDITION[a]	MODE SWITCH POSITION	AVERAGE REACTOR COOLANT TEMPERATURE
1. POWER OPERATION	Run	Any Temperature
2. STARTUP	Startup/Hot Standby	Any Temperature
3. HOT SHUTDOWN	Shutdown	> 212°F[c]
4. COLD SHUTDOWN	Shutdown[d]	≤ 212°F[c]
5. REFUELING	Shutdown or Refuel[b]	≤ 212°F

a. In Conditions 1 through 4, fuel is in the reactor vessel with the reactor vessel head closure bolts fully tensioned. In Condition 5, fuel is in the reactor vessel with the head closure bolts less than fully tensioned or with the head removed.
b. See Special Test Exception 3.10.3.
c. During the performance of inservice hydrostatic or leak testing with all control rods fully inserted and reactor coolant temperature above 212°F, the reactor may be considered to be in the COLD SHUTDOWN condition for the purpose of determining Limiting Condition for Operation applicability. However, compliance with an ACTION requiring COLD SHUTDOWN shall require a reactor coolant temperature ≤ 212°F. In addition, compliance with the following Specifications is required when performing the hydrostatic and leak testing under the identified conditions: 3.6.5.1, 3.6.5.2, 3.6.6.1, and 3.7.1.1.
d. The reactor mode switch may be placed in the Refuel position while a single control rod and/or control rod drive is being removed from the core and/or reactor pressure vessel per Specification 3.10.5.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

b. In CONDITION 5, if an RHRSW subsystem is inoperable, its supported RHR subsystem being used for decay heat removal shall be considered inoperable. Only one operable RHRSW pump per subsystem is required. Take the ACTION required by Specification 3.9.12.

c. In condition *, with up to three RHRSW pumps inoperable or with one RHRSW subsystem inoperable, restore both subsystems with at least one pump in each system to OPERABLE status within 7 days or be in COLD SHUTDOWN within the next 24 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.1 Each residual heat removal service water system subsystem shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position, and

b. At least once per 92 days by verifying that each pump develops a discharge pressure of $\geq$ 300 psig at a flow of $\geq$ 4000 gpm.

3/4.9.3 CONTROL ROD POSITION

LIMITING CONDITION FOR OPERATION

3.9.3 All control rods shall be fully inserted.*

APPLICABILITY: CONDITION 5, when moving fuel assemblies or startup sources in the core.

ACTION:

With all control rods not fully inserted, suspend fuel and startup source movement. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.3 All control rods shall be verified to be fully inserted within 2 hours prior to the start of and at least once per 12 hours during fuel or startup source movement.

*Except control rods removed per Specification 3.9.11.1 or 3.9.11.2.
**See Special Test Exception 3.10.3.

SPECIAL TEST EXCEPTIONS

3/4.10.5 SINGLE CONTROL ROD WITHDRAWAL - COLD SHUTDOWN

LIMITING CONDITIONS FOR OPERATION

3.10.5 The Reactor Mode Switch may be placed in the REFUEL position while in the Cold Shutdown Condition to allow withdrawal of a single control rod or withdrawal and subsequent removal of the associated control rod drive provided at least the following requirements are met:

a. One of the following conditions exist:

1. The Refuel position one-rod-out interlock is OPERABLE per Specification 3.9.1, AND control rod position indication is OPERABLE per Specification 3.1.3.7;

OR

2. A control rod withdrawal block is inserted.

b. All other control rods are fully inserted.

c. One of the following conditions exists:

1. The requirements are met for Specifications Table 3.3.1-1, functions 1.a, 1.b, 2.a, 2.d, 11 and 12; AND the electric power monitoring for the reactor protection system is operable per Specification 3.8.2.7; AND all control rods are operable per Specification 3.1.3.1.

OR

2. All other control rods in a five-by-five array centered on the control rod being withdrawn are disarmed AND the requirements of Specification 3.1.1, Shutdown Margin, are met except the single control rod to be withdrawn may be assumed to be the highest-worth control rod.

NOTE: If the control rod being withdrawn is not insertable, then requirement c.2 must be chosen.

APPLICABILITY: CONDITION 4 with the Reactor Mode Switch in the Refuel position.

SPECIAL TEST EXCEPTIONS

3/4.10.5 SINGLE CONTROL ROD WITHDRAWAL - COLD SHUTDOWN

LIMITING CONDITIONS FOR OPERATION

ACTION:

a. With one or more of the above requirements not met with the affected control rod insertable, fully insert all insertable control rods AND place the Reactor Mode Switch in the SHUTDOWN position within one hour.

b. With one or more of the above requirements not met with the affected control rod not insertable, immediately suspend withdrawal of the control rod and removal of the associated CRD AND either fully insert all control rods as soon as practical or satisfy the applicable LCO requirements.

SURVEILLANCE REQUIREMENTS

4.10.5 For the condition of the Reactor Mode Switch being placed in the REFUEL position while in MODE 4, verify the following as applicable:

a. The applicable surveillances are performed, at the required frequency, for the LCOs specified in 3.10.5.a.1, if credit is being taken for Specification 3.10.5.a.1.

b. The applicable surveillances are performed, at the required frequency, for the LCOs specified in 3.10.5.c.1, if credit is being taken for Specification 3.10.5.c.1.

c. Prior to entering this condition, and every 24 hours thereafter, assure that:

1. All other control rods in a five-by-five array centered on the control rod being withdrawn are disarmed, if credit is being taken for Specification 3.10.5.c.2, and

2. All other control rods are fully inserted, and

3. A control rod withdrawal block is inserted, if credit is being taken for Specification 3.10.5.a.2.

3/4.9 REFUELING OPERATIONS

BASES

3/4.9.1 REACTOR MODE SWITCH

Locking the OPERABLE reactor mode switch in the refuel position ensures that the restrictions on 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 the reactor internals or fuel assemblies, and exposure of personnel to excessive radioactivity.

3/4.9.2 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. During the unloading, it is not necessary to maintain 3 cps because core alterations will involve only reactivity removal and will not result in criticality. The loading of up to four bundles around the SRMs before attaining the 3 cps is permissible because these bundles form a subcritical configuration.

3/4.9.3 CONTROL ROD POSITION

The requirement that all control rods be inserted during fuel or startup source movement ensures that fuel will not be loaded into a cell without a control rod and prevents two positive reactivity changes from occurring simultaneously.

3/4.9.4 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 assumption used in the accident analyses.

3/4.9.5 SECONDARY CONTAINMENT

Secondary containment is designed to minimize any ground level release of radioactive material which may result from an accident. The reactor building provides secondary containment during normal operation when the drywell is sealed and in service. When the reactor is shutdown or during refueling, the drywell may be open and the reactor building then becomes the primary containment. The refueling floor is maintained under the secondary containment integrity of Hatch Unit 1.

Establishing and maintaining a vacuum in the building with the standby gas treatment system once per 18 months, along with the surveillance of the doors, hatches and dampers, is adequate to ensure that there are no violations of the integrity of the secondary containment. Only one closed damper in each penetration line is required to maintain the integrity of the secondary containment.

3/4.10 SPECIAL TEST EXCEPTIONS

BASES

3/4.10.1 PRIMARY CONTAINMENT INTEGRITY

The requirement for PRIMARY CONTAINMENT INTEGRITY is removed during the period when open vessel tests are being performed during low power PHYSICS TESTS.

3/4.10.2 ROD WORTH MINIMIZER

In order to perform the tests required in the Technical Specifications it is necessary to bypass the sequence restraints on control rod movement. The additional surveillance requirements ensure that the Specifications on heat generation rates and shutdown margin requirements are not exceeded during the period when these tests are being performed.

3/4.10.3 SHUTDOWN MARGIN DEMONSTRATIONS

Performance of shutdown margin demonstrations with the vessel head removed requires additional restrictions in order to ensure that criticality does not occur. These additional restrictions are specified in this LCO.

3/4.10.4 RECIRCULATION LOOPS

This special test exception permits reactor criticality under no flow conditions and is required to perform certain startup and PHYSICS TESTS while at low THERMAL POWER levels.

3/4.10.5 SINGLE CONTROL ROD WITHDRAWAL - COLD SHUTDOWN

This specification allows the Mode Switch to be placed in the Refuel position while in the Cold Shutdown Condition to allow withdrawal of a single control rod or withdrawal and subsequent removal of the associated control rod drive. The criteria listed emulate equipment operability conditions which normally exist in the Refuel Mode and are designed to preclude the possibility of an inadvertent criticality. The surveillance requirements listed provide assurance that these criteria are met before and during the operation.

PROPOSED CHANGE 1

INSERT NEW C. DEFINITION FROM NEXT PAGE

~~C. Core Alteration - Core alteration shall be the addition, removal, relocation, or movement of fuel, sources, incore instruments, or reactivity controls within the reactor pressure vessel with the vessel head removed and fuel in the vessel. Suspension of core alterations shall not preclude completion of the movement of a component to a safe conservative position.~~

D. Design Power - Design power refers to the power level at which the reactor is producing 105 percent of reactor vessel rated steam flow. Design power does not necessarily correspond to 105 percent of rated reactor power. The stated design power in megawatts thermal (MWt) is the result of a heat balance for a particular plant design. For Hatch Nuclear Plant Unit 1 the design power is approximately 2537 MWt.

E. Engineered Safety Features - Engineered safety features are those features provided for mitigating the consequences of postulated accidents, including for example containment, emergency core cooling, and standby gas treatment system.

F. Hot Shutdown Condition - Hot shutdown condition means reactor operation with the Mode Switch in the SHUTDOWN position, coolant temperature greater than 212°F, and no core alterations are permitted.*

G. Hot Standby Condition - Hot standby condition means reactor operation with the Mode Switch in the START & HOT STANDBY position, coolant temperature greater than 212°F, reactor pressure less than 1045 psig, critical.

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CHANNEL FUNCTIONAL TEST

A CHANNEL FUNCTIONAL TEST shall be:

a. Analog channels - the injection of a simulated signal into the channel as close to the primary sensor as practicable to verify OPERABILITY including alarm and/or trip functions and channel failure trips.

b. Bistable channels - the injection of a simulated signal into the channel sensor to verify OPERABILITY including alarm and/or trip functions.

~~CORE ALTERATION~~

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INSERT NEW DEFINITION FROM NEXT PAGE.

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The CORE MAXIMUM FRACTION OF LIMITING POWER DENSITY (CMFLPD) shall be the largest FLPD which exists in the core for a given operating condition.

CORE OPERATING LIMITS REPORT

The CORE OPERATING LIMITS REPORT shall be the unit-specific document that provides core operating limits for the current operating reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Specification 6.9.1.11. Plant operation within these operating limits is addressed in individual specifications.

CRITICAL POWER RATIO

The CRITICAL POWER RATIO (CPR) shall be the ratio of that power in the assembly which is calculated by application of an NRC-approved critical power correlation to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.

$\bar{E}$-AVERAGE DISINTEGRATION ENERGY

$\bar{E}$ shall be the average, weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling, of the sum of the average beta and gamma energies per disintegration, in MeV, for isotopes with half lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

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PROPOSED CHANGE 2

1.0 Definitions

The following terms are defined so that a uniform interpretation of these specifications may be achieved.

A. (Deleted)

B. Cold Shutdown Condition - Cold shutdown condition means reactor operation with the Mode Switch in the SHUTDOWN position, coolant temperature ≤ 212°F, and with no core alterations permitted.* THE MODE SWITCH MAY BE PLACED IN THE REFUEL POSITION WHILE A SINGLE CONTROL ROD AND/OR CONTROL ROD DRIVE IS BEING REMOVED FROM THE CORE AND/OR REACTOR PRESSURE VESSEL PER SPECIFICATION 3.10.E.3.

*During the performance of inservice hydrostatic or leakage testing with all control rods fully inserted and reactor coolant temperature > 212°F, and/or reactor vessel pressurized, the reactor may be considered to be in the Cold Shutdown Condition for the purpose of determining Limiting Condition for Operation applicability. Note that the Cold Shutdown Condition may be referred to in different ways throughout the Technical Specifications. For example, "reactor subcritical and reactor coolant temperature < 212°F," "irradiated fuel in the reactor vessel and the reactor is depressurized," "reactor water temperature < 212°F and reactor coolant system vented," or "reactor is not pressurized (i.e., ≤ 212°F)" should be interpreted as COLD SHUTDOWN. However, compliance with an ACTION requiring COLD SHUTDOWN shall require a reactor coolant temperature ≤ 212°F. In addition, compliance with the following Specifications is required when performing the hydrostatic or leakage testing under the identified conditions: 3.5.B.1.b, 3.5.C.1.c, 3.6.F.2.d, 3.7.C.1.a(7), 3.9.c, and applicable notes in Table 3.2-1.

Z. Reactor Pressure - Unless otherwise indicated, a reactor pressure listed in these Technical Specifications is that pressure measured at the reactor vessel steam dome.

~~AA. Refuel Mode - The reactor is in the Refuel Mode when the Mode Switch is in the REFUEL position. When the Mode Switch is in this position, the refueling interlocks are in service.~~

INSERT NEW DEFINITION FROM NEXT PAGE

BB. Refueling Outage - Refueling outage is the period of time between the shutdown of the Unit prior to a refueling and the startup of the Unit after that refueling.

CC. Run Mode - The reactor is in the Run Mode when the Mode Switch is in the RUN position. In this mode the reactor pressure is at or above 825 psig and the reactor protection system is energized with APRM Scram (excluding the APRM 15% of the flux scram) and APRM rod blocks in service.

DD. Safety Limit - The Safety Limits are limits below which the reasonable maintenance of the physical barriers which guard against the controlled release of radioactivity is assured. Exceeding such a limit requires Unit shutdown and review by the Atomic Energy Commission before resumption of Unit Operation. Operation beyond such a limit may not in itself result in serious consequences, but it indicates an operational deficiency subject to regulatory review.

EE. Secondary Containment Integrity - Secondary containment integrity means that the reactor building is intact and all the following conditions are met:

1. At least one door in each access opening is closed.

2. The standby gas treatment system is operable.

3. All automatic ventilation system isolation valves are operable or are secured in the isolated position.

FF. Shutdown Mode - The reactor is in the Shutdown Mode when the Mode Switch is in the SHUTDOWN position and no core alterations are permitted. When the Mode Switch is placed in the SHUTDOWN position a scram is initiated, power to the control rod drives is removed, and the reactor protection system trip systems are de-energized for two seconds and cannot be reset before ten seconds have elapsed.

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↓

AA. Refuel Mode - The reactor is in the Refuel Mode when fuel is in the reactor vessel with the head closure bolts less than fully tensioned or with the head removed. The Mode Switch may be in SHUTDOWN or REFUEL.

TABLE 1.2

OPERATIONAL CONDITIONS

CONDITION (a)	MODE SWITCH POSITION	AVERAGE REACTOR COOLANT TEMPERATURE
1. POWER OPERATION	Run	Any Temperature
2. STARTUP	Startup/Hot Standby	Any Temperature
3. HOT SHUTDOWN	Shutdown	≥ 212°F (c)
4. COLD SHUTDOWN	Shutdown (d)	≤ 212°F (c)
5. REFUELING	Refuel (b) Shutdown or	≤ 212°F

INSERT NEW NOTE a FROM NEXT PAGE

(a) ~~Reactor vessel head unbolted or removed and fuel in the vessel.~~

(b) See Special Test Exception 3.10.3.

(c) During the performance of inservice hydrostatic or leak testing with all control rods fully inserted and reactor coolant temperature above 212°F, the reactor may be considered to be in the COLD SHUTDOWN condition for the purpose of determining Limiting Condition for Operation applicability. However, compliance with an ACTION requiring COLD SHUTDOWN shall require a reactor coolant temperature ≤ 212°F. In addition, compliance with the following Specifications is required when performing the hydrostatic and leak testing under the identified conditions: 3.6.5.1, 3.6.5.2, 3.6.6.1, and 3.7.1.1.

INSERT NEW NOTE d FROM NEXT PAGE

INSERT ON PREVIOUS PAGE

(a) In Conditions 1 through 4, fuel is in the reactor vessel with the reactor vessel head closure bolts fully tensioned. In Condition 5, fuel is in the reactor vessel with the head closure bolts less than fully tensioned or with the head removed.

(d) The reactor mode switch may be placed in the Refuel position while a single control rod and/or control rod drive is being removed from the core and/or reactor pressure vessel per Specification 3.10.~~8~~ 5.

PROPOSED CHANGE 3

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

INSERT NEW ACTION b FROM NEXT PAGE.

~~b. In CONDITION 5, with up to three RHRSW pumps inoperable or with one RHRSW subsystem inoperable, restore both subsystems with at least one pump in each system to OPERABLE status within 7 days or declare the RHR system inoperable for decay heat removal and reactor coolant circulation and take the ACTION required by Specification 3.9.12.~~

c. In condition *, with up to three RHRSW pumps inoperable or with one RHRSW subsystem inoperable, restore both subsystems with at least one pump in each system to OPERABLE status within 7 days or be in COLD SHUTDOWN within the next 24 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.1 Each residual heat removal service water system subsystem shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position, and

b. At least once per 92 days by verifying that each pump develops a discharge pressure of ≥ 300 psig at a flow of ≥ 4000 gpm.

(3.7.1.1, Action b)

b. In CONDITION 5, if an RHRSW subsystem is inoperable, its supported RHR subsystem being used for decay heat removal shall be considered inoperable. Only one operable RHRSW pump per subsystem is required. Take the ACTION required by Specification 3.9.12.

PROPOSED CHANGE 4

REFUELING OPERATIONS

3/4.9.3 CONTROL ROD POSITION

LIMITING CONDITION FOR OPERATION

3.9.3 All control rods shall be fully inserted.*
WHEN MOVING FUEL ASSEMBLIES OR STARTUP SOURCES IN THE CORE.

APPLICABILITY: CONDITION 5, ~~during CORE ALTERATIONS~~.**

ACTION:
FUEL AND STARTUP SOURCE MOVEMENT.

With all control rods not fully inserted, suspend ~~CORE ALTERATIONS~~. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.3 All control rods shall be verified to be fully inserted within 2 hours prior to the start of and at least once per 12 hours during ~~CORE ALTERATIONS~~. FUEL OR STARTUP SOURCE MOVEMENT.

*Except control rods removed per Specification 3.9.11.1 or 3.9.11.2.
**See Special Test Exception 3.10.3.

3/4.9 REFUELING OPERATIONS

BASES

3/4.9.1 REACTOR MODE SWITCH

Locking the OPERABLE reactor mode switch in the refuel position ensures that the restrictions on 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 the reactor internals or fuel assemblies, and exposure of personnel to excessive radioactivity.

3/4.9.2 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. During the unloading, it is not necessary to maintain 3 cps because core alterations will involve only reactivity removal and will not result in criticality. The loading of up to four bundles around the SRMs before attaining the 3 cps is permissible because these bundles form a subcritical configuration.

3/4.9.3 CONTROL ROD POSITION

FUEL OR STARTUP SOURCE MOVEMENT

The requirement that all control rods be inserted during ~~CORE~~ ~~ERATIONS~~ ensures that fuel will not be loaded into a cell without a control rod and prevents two positive reactivity changes from occurring simultaneously.

3/4.9.4 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.

3/4.9.5 SECONDARY CONTAINMENT

Secondary containment is designed to minimize any ground level release of radioactive material which may result from an accident. The reactor building provides secondary containment during normal operation when the drywell is sealed and in service. When the reactor is shutdown or during refueling, the drywell may be open and the reactor building then becomes the primary containment. The refueling floor is maintained under the secondary containment integrity of Hatch-Unit 1.

Establishing and maintaining a vacuum in the building with the standby gas treatment system once per 18 months, along with the surveillance of the doors, hatches and dampers, is adequate to ensure that there are no violations of the integrity of the secondary containment. Only one closed damper in each penetration line is required to maintain the integrity of the secondary containment.

PROPOSED CHANGE 5

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.10.E.1. Requirements for Withdrawal of 1 or 2 Control Rods (Continued)	4.10.E.1. Requirements for Withdrawal of 1 or 2 Control Rods (Continued)
a. performed. All other refueling interlocks shall be operable.	
b. Prior to performing control rod drive maintenance without removing fuel assemblies:	b. Prior to performing control rod drive maintenance without removing fuel assemblies it shall be demonstrated that the core is subcritical by a margin of at least 0.38% Δk with the highest worth control rod capable of withdrawal fully withdrawn.
(1) A shutdown margin test shall be made as described in Specification 4.10.E.1.b.	
(2) All the control rod drives in the 5 x 5 rod array centered on the control rod or drive undergoing maintenance shall have their directional control valves electrically disarmed.	

2. Requirements for Withdrawal of More Than 2 Control Rods

Any number of control rods may be withdrawn or removed from the reactor core provided the Mode Switch is locked in the REFUEL position. After the Fuel assemblies in the two by two cell containing the control rod to be withdrawn are removed, the refueling interlock which prevents withdrawal of that control rod may be bypassed. All other interlocks shall be operable.

INSERT NEW SECTION 3.10.E.3 FROM NEXT PAGE

INSERT NEW SECTION [illegible] 4.10.E.3 FROM NEXT PAGE

(3.10.E.3)

3. Requirements for Withdrawal of a Control Rod in the Cold Shutdown Condition

The Mode Switch may be placed in the REFUEL position while in the Cold Shutdown Condition to allow withdrawal of a single control rod or withdrawal and subsequent removal of the associated control rod drive provided at least the following requirements are met:

a.1. The Refuel position one-rod-out interlock is operable per Specification 3.10.A.1 (control rod full-in position indication must also be operable),

OR

2. A control rod withdrawal block is inserted.

b. All other control rods are fully inserted.

c.1. The requirements are met for Specifications Table 3.1-1, Scram Numbers 1, 2, 3, and 8 (Inoperative and 15% Flux only); AND the Electric Power Monitoring for the Reactor Protection System is operable per Specification 3.9.D; AND all control rods are operable per Specification 3.3.

OR

2. All other control rods in a five-by-five array centered on the control rod being withdrawn are disarmed AND the requirements of Specification 3.3.A, Core Reactivity Margin, are met except the single control rod to be withdrawn may be assumed to be the highest-worth control rod.

NOTE: If the control rod being withdrawn is not insertable, then requirement c.2 must be chosen.

With one or more of the above requirements not met with the affected control rod insertable, fully insert all insertable control rods AND place the Mode Switch in the SHUTDOWN position within one hour.

With one or more of the above requirements not met with the affected control rod not insertable, immediately suspend withdrawal of the control rod and removal of the associated CRD AND either fully insert all control rods as soon as practical or satisfy the applicable LCO requirements.

(4.10.E.3)

3. For the condition of the Mode Switch being placed in the REFUEL position while in the Cold Shutdown Condition, verify the following:

   a. The applicable surveillances are performed, at the required frequencies, for the LCOs specified in 3.10.E.3.a.1, if credit is being taken for Specification 3.10.E.3.a.1.

   b. The applicable surveillances are performed, at the required frequencies, for the LCOs specified in 3.10.E.3.c.1, if credit is being taken for Specification 3.10.E.3.c.1.

   c. Prior to entering this condition, and every 24 hours thereafter, assure that:

      1. All other control rods in a five-by-five array centered on the control rod being withdrawn are disarmed, if credit is being taken for Specification 3.10.E.3.c.2, and

      2. All other control rods are fully inserted, and

      3. A control rod withdrawal block is inserted, if credit is being taken for Specification 3.10.E.3.a.2.

3.10.E.1. Requirements for Withdrawal of 1 or 2 Control Rods

The maintenance is performed with the Mode Switch in the REFUEL position to provide the refueling interlocks normally available during refueling operations. In order to withdraw a second control rod after withdrawal of the first rod, it is necessary to bypass the refueling interlock on the first control rod which prevents more than one control rod from being withdrawn at the same time.

The requirement that an adequate shutdown margin be demonstrated and that all surrounding control rods have their directional control valves electrically disarmed ensures that inadvertent criticality cannot occur during this maintenance. The adequacy of the shutdown margin is verified by demonstrating that the core is shut down by a margin of 0.38 percent Δk with the strongest available control rod fully withdrawn. The safety design basis (FSAR - Section 3.6.5.2) states that the reactor must remain subcritical under all conditions with the single highest worth control rod fully withdrawn.

2. Requirements for Withdrawal of More Than 2 Control Rods

Specification 3.10.E.2. allows unloading of a significant portion of the reactor core. This operation is performed with the Mode Switch in the REFUEL position to provide the refueling interlocks normally available during refueling operations. In order to withdraw more than one control rod, it is necessary to bypass the refueling interlock on each withdrawn control rod which prevents more than one control rod from being withdrawn at a time. The requirement that the fuel assemblies in the cell controlled by the control rod be removed from the reactor core before the interlock can be bypassed ensures that withdrawal of another control rod does not result in inadvertent criticality. Each control rod provides primary reactivity control for the fuel assemblies in the cell associated with that control rod. Thus, removal of an entire cell (fuel assemblies plus control rod) results in a lower reactivity potential of the core.

INSERT BASES 3.10.E.3 FROM NEXT PAGE

F. Reactor Building Cranes

The reactor building crane and monorail hoist are required to be operable for handling the spent fuel cask, new fuel, or spent fuel pool gates. Administratively limiting the height that the spent fuel cask is raised over the refueling floor minimizes the damage that could result from an accident. The design of the reactor building and crane is such that casks of current design cannot be lifted more than two feet above the refueling floor. An analysis has been made which shows that the floor over which the spent fuel cask is handled can satisfactorily sustain a dropped cask from a height of 2 feet. Modifications to the main reactor building crane are being studied in order to increase its ability to withstand a single failure. A spent fuel cask will not be lifted until these modifications have been accepted by the NRC and the NRC has approved the lifting of a cask by the crane, and the appropriate Technical Specifications.

G. Spent Fuel Cask Lifting Trunnions and Yoke

Before lifting a spent fuel cask, the trunnions and yoke shall be in good working condition and properly connected.

(3.10.E.3)

3. Requirements for Withdrawal of a Control Rod in the Cold Shutdown Condition

Specification 3.10.E.3 allows the Mode Switch to be placed in the REFUEL position while in the Cold Shutdown Condition to allow withdrawal of a single control rod or withdrawal and subsequent removal of the associated control rod drive. The criteria listed emulate equipment operability conditions which normally exist in the Refuel Mode and are designed to preclude the possibility of an inadvertent criticality. The surveillance requirements listed provide assurance that these criteria are met before and during the operation.

LIMITING CONDITIONS FOR OPERATIONAL AND SURVEILLANCE REQUIREMENTS

BASES

INSERT NEW 3/4 10.5 FROM NEXT 2 PAGES.

~~SPECIAL TEST EXCEPTION~~

~~3/4.10.5 HIGH PRESSURE COOLANT INJECTION SYSTEM*~~

~~LIMITING CONDITIONS FOR OPERATION~~

3.10.5 The requirements of Specification 3.5.1 are modified to not require HPCI to be OPERABLE before entry into another operational condition in order to perform a one time test of the turbine-generator up to 10% RATED POWER with the generator not aligned to the system grid for a time period not to exceed 7 days.

~~APPLICABILITY: CONDITIONS 1, 2 and 3.~~

~~ACTION:~~

~~With the above specified limits exceeded, actuate an immediate power reduction to less than 10% power.~~

~~SURVEILLANCE REQUIREMENTS~~

~~4.10.5 Verify once per hour that power level is ≤ 10% of rated power.~~

~~*This specification applies from June 2-9, 1980.~~

SPECIAL TEST EXCEPTIONS

3/4.10.5 SINGLE CONTROL ROD WITHDRAWAL - COLD SHUTDOWN

LIMITING CONDITIONS FOR OPERATION

3.10.5 The Reactor Mode Switch may be placed in the REFUEL position while in the Cold Shutdown Condition to allow withdrawal of a single control rod or withdrawal and subsequent removal of the associated control rod drive provided at least the following requirements are met:

a. One of the following conditions exist:

1. The Refuel position one-rod-out interlock is OPERABLE per Specification 3.9.1, AND control rod position indication is OPERABLE per Specification 3.1.3.7;

OR

2. A control rod withdrawal block is inserted.

b. All other control rods are fully inserted.

c. One of the following conditions exists:

1. The requirements are met for Specifications Table 3.3.1-1, functions 1.a, 1.b, 2.a, 2.d, 11 and 12; AND the electric power monitoring for the reactor protection system is operable per Specification 3.8.2.7; AND all control rods are operable per Specification 3.1.3.1.

OR

2. All other control rods in a five-by-five array centered on the control rod being withdrawn are disarmed AND the requirements of Specification 3.1.1, Shutdown Margin, are met except the single control rod to be withdrawn may be assumed to be the highest-worth control rod.

NOTE: If the control rod being withdrawn is not insertable, then requirement c.2 must be chosen.

APPLICABILITY: CONDITION 4 with the Reactor Mode Switch in the Refuel position.

SPECIAL TEST EXCEPTIONS

3/4.10.~~6~~5 SINGLE CONTROL ROD WITHDRAWAL - COLD SHUTDOWN

LIMITING CONDITIONS FOR OPERATION

ACTION:

a. With one or more of the above requirements not met with the affected control rod insertable, fully insert all insertable control rods AND place the Reactor Mode Switch in the SHUTDOWN position within one hour.

b. With one or more of the above requirements not met with the affected control rod not insertable, immediately suspend withdrawal of the control rod and removal of the associated CRD AND either fully insert all control rods as soon as practical or satisfy the applicable LCO requirements.

SURVEILLANCE REQUIREMENTS

4.10.~~6~~5 For the condition of the Reactor Mode Switch being placed in the REFUEL position while in MODE 4, verify the following as applicable:

a. The applicable surveillances are performed, at the required frequency, for the LCOs specified in 3.10.~~6~~5.a.1, if credit is being taken for Specification 3.10.~~6~~5.a.1.

b. The applicable surveillances are performed, at the required frequency, for the LCOs specified in 3.10.~~6~~5.c.1, if credit is being taken for Specification 3.10.~~6~~5.c.1.

c. Prior to entering this condition, and every 24 hours thereafter, assure that:

1. All other control rods in a five-by-five array centered on the control rod being withdrawn are disarmed, if credit is being taken for Specification 3.10.~~6~~5.c.2, and

2. All other control rods are fully inserted, and

3. A control rod withdrawal block is inserted, if credit is being taken for Specification 3.10.~~6~~5.c.2.

3/4.10 SPECIAL TEST EXCEPTIONS

BASES

3/4.10.1 PRIMARY CONTAINMENT INTEGRITY

The requirement for PRIMARY CONTAINMENT INTEGRITY is removed during the period when open vessel tests are being performed during low power PHYSICS TESTS.

3/4.10.2 ROD WORTH MINIMIZER

In order to perform the tests required in the Technical Specifications, it is necessary to bypass the sequence restraints on control rod movement. The additional surveillance requirements ensure that the Specifications on heat generation rates and shutdown margin requirements are not exceeded during the period when these tests are being performed.

3/4.10.3 SHUTDOWN MARGIN DEMONSTRATIONS

Performance of shutdown margin demonstrations with the vessel head removed requires additional restrictions in order to ensure that criticality does not occur. These additional restrictions are specified in this LCO.

3/4.10.4 RECIRCULATION LOOPS

This special test exception permits reactor criticality under no flow conditions and is required to perform certain startup and PHYSICS TESTS while at low THERMAL POWER levels.

INSERT BASES 3/4 10.5 FROM NEXT PAGE

3/4 10.5 SINGLE CONTROL ROD WITHDRAWAL - COLD SHUTDOWN

This specification allows the Mode Switch to be placed in the Refuel position while in the Cold Shutdown Condition to allow withdrawal of a single control rod or withdrawal and subsequent removal of the associated control rod drive. The criteria listed emulate equipment operability conditions which normally exist in the Refuel Mode and are designed to preclude the possibility of an inadvertent criticality. The surveillance requirements listed provide assurance that these criteria are met before and during the operation.