

### 3.4 LIMITING CONDITIONS FOR OPERATION

#### B. Operation with Inoperable Components

From and after the date that a redundant component is made or found to be inoperable, reactor operation is permissible during the succeeding seven days unless such component is sooner made operable.

#### C. Standby Liquid Control System Tank - Borated Solution

At all times when the Standby Liquid Control System is required to be operable, the following conditions shall be met:

1. The net volume versus concentration of the sodium pentaborate solution in the standby liquid control tank shall meet the requirements of Figure 3.4.1.

### 4.4 SURVEILLANCE REQUIREMENTS

5. Testing the new trigger assemblies by installing one of the assemblies in the test block and firing it using the installed circuitry. Install the unfired assemblies, taken from the same batch as the fired one, into the explosion valves.
6. Recirculating the borated solution.

#### B. Operation with Inoperable Components

Deleted.

#### C. Standby Liquid Control System Tank - Borated Solution

1. The solution volume in the tank and temperature in the tank and suction piping shall be checked at least daily.

be inoperable, there is no immediate threat to shutdown capability, and reactor operation may continue while repairs are being made. Assurance that the system will perform its intended function is obtained from the results of the pump and valve testing performed in accordance with ASME Section XI requirements.

C. Standby Liquid Control System Tank - Borated Solution

The solution saturation temperature varies with the concentration of sodium pentaborate. The solution shall be kept at least 10°F above the saturation temperature to guard against boron precipitation. The 10°F margin is included in Figure 3.4.2. Temperature and liquid level alarms for the system are annunciated in the Control Room.

Once the solution has been made up, boron concentration will not vary unless more boron or water is added. Level indication and alarm indicate whether the solution volume has changed which might indicate a possible solution concentration change. Considering these factors, the test interval has been established.

Sodium pentaborate concentration is determined within 24 hours following the addition of water or boron, or if the solution temperature drops below specified limits. The 24-hour limit allows for 8 hours of mixing, subsequent testing, and notification of shift personnel.

Boron concentration, solution temperature, and volume are checked on a frequency to assure a high reliability of operation of the system should it ever be required. Isotopic tests of the sodium pentaborate are performed periodically to ensure that the proper boron-10 atom percentage is being used.

10CFR50.62(c)(4) requires a Standby Liquid Control System with a minimum flow capacity and boron content equivalent to 86 gpm of 13 weight percent natural sodium pentaborate solution in the 251-inch reactor pressure vessel reference plant. Natural sodium pentaborate solution is 19.8 atom percent boron-10. The relationship expressed in Specification 3.4.C.3 also contains the ratio M251/M to account for the difference in water volume between the reference plant and Vermont Yankee. (This ratio of masses is 628,300 lbs./401,247 lbs.)

To comply with the ATWS rule, the combination of three Standby Liquid Control System parameters must be considered: boron concentration, Standby Liquid Control System pump flow rate, and boron-10 enrichment. Fixing the pump flow rate in Specification 3.4.C.3 at the minimum flow rate of 35 gpm conservatively establishes a system parameter that can be used in satisfying the ATWS requirement, as well as the original system design basis. If the product of the expression in Specification 3.4.C.3 is equal to or greater than unity, the Standby Liquid Control System satisfies the requirements of 10CFR50.62(c)(4).

3.5 LIMITING CONDITION FOR OPERATIONS

3.5 CORE AND CONTAINMENT COOLING SYSTEMS

Applicability:

Applies to the operational status of the Emergency Cooling Subsystems.

Objective:

To assure adequate cooling capability for heat removal in the event of a loss-of-coolant accident or isolation from the normal reactor heat sink.

Specification:

A. Core Spray and Low Pressure Coolant Injection

1. Except as specified in Specifications 3.5.A.2 through 3.5.A.4 below and 3.5.H.3 and 3.5.H.4, both Core Spray and the LPCI Subsystems shall be operable\* whenever irradiated fuel is in the reactor vessel and prior to a reactor startup from the cold shutdown condition.

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\*Note: During Hot Shutdown, LPCI subsystems may be considered OPERABLE during alignment and operation for decay heat removal with reactor vessel pressure less than the RHR shutdown cooling permissive pressure, if capable of being manually realigned and not otherwise inoperable.

4.5 SURVEILLANCE REQUIREMENT

4.5 CORE AND CONTAINMENT COOLING SYSTEMS

Applicability:

Applies to periodic testing of the emergency cooling subsystems.

Objective:

To verify the operability of the core containment cooling subsystems.

Specification:

A. Core Spray and Low Pressure Cooling Injection

Surveillance of the Core Spray and LPCI Subsystems shall be performed as follows.

1. General Testing

<u>Item</u>	<u>Frequency</u>
a. Simulated Automatic Actuation Test	Each re-fueling outage
b. Operability testing of pumps and valves shall be in accordance with Specification 4.6.E.	
c. Flow Rate Test-Core Spray pumps shall deliver at least 3000 gpm (torus to torus) against a system head of 120 psig. Each LPCI pump shall deliver 7450 ± 150 gpm (vessel to vessel).	Each re-fueling outage

### 3.5 LIMITING CONDITION FOR OPERATION

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2. From and after the date that one of the Core Spray Subsystems is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such subsystem is sooner made operable, provided that during such seven days, all active components of the other Core Spray Subsystem, the LPCI Subsystems, and the diesel generators required for operation of such components if no external source of power were available, shall be operable.
  
3. From and after the date that one of the LPCI pumps is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such pump is sooner made operable, provided that during such seven days, the remaining active components of the LPCI Containment Cooling Subsystem and all active components of both Core Spray Subsystems and the diesel generators required for operation of such components if no external source of power were available, shall be operable.

### 4.5 SURVEILLANCE REQUIREMENT

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2. Deleted.

3. Deleted.

### 3.5 LIMITING CONDITION FOR OPERATION

4. a. From and after the date that a LPCI Subsystem is made or found to be inoperable due to failure of the associated UPS, reactor operation is permissible only during the succeeding thirty days, for the 1989/90 operating cycle, unless it is sooner made operable, provided that during that time the associated motor control center (89A or 89B) is powered from its respective maintenance tie, all active components of the other LPCI and the Containment Cooling Subsystem, the Core Spray Subsystems, and the emergency diesel generators shall be operable, the requirements of Specification 3.10.A.4 are met, and the 4160 volt tie line to the Vernon Hydro is the operable delayed access power source.
- b. From and after the date that a LPCI Subsystem is made or found to be inoperable for any reason, other than failure of the UPS during the 1989/90 operating cycle, or Specification 3.5.A.4.a is not met, reactor operation is permissible only during the succeeding seven days unless it is sooner made operable, provided

### 4.5 SURVEILLANCE REQUIREMENT

4. Deleted.

### 3.5 LIMITING CONDITION FOR OPERATION

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that during that time all active components of the other LPCI and the Containment Cooling Subsystem, the Core Spray Subsystems, and the diesel generators required for operation of such components if no external source of power were available, shall be operable.

5. All recirculation pump discharge valves and bypass valves shall be operable or closed prior to reactor startup.

6. If the requirements of Specifications 3.5.A cannot be met, an orderly shutdown of the reactor shall be initiated and the reactor shall be in a cold shutdown condition within 24 hours.

#### B. Containment Spray Cooling Capability

1. Both containment cooling spray loops are required to be operable when the reactor water temperature is greater than 212°F except that a Containment Cooling Subsystem may be inoperable for thirty days.
2. If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.

### 4.5 SURVEILLANCE REQUIREMENT

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5. Recirculation pump discharge valves shall be tested to verify full open to full closed in  $27 < t < 33$  seconds and bypass valves shall be tested for operability in accordance with Specification 4.6.E.

#### B. Containment Spray Cooling Capability

1. Surveillance of the drywell spray loops shall be performed as follows. During each five-year period, an air test shall be performed on the drywell spray headers and nozzles.
2. Deleted.

3.5 LIMITING CONDITION FOR  
OPERATION

C. Residual Heat Removal (RHR)  
Service Water System

1. Except as specified in Specifications 3.5.C.2, and 3.5.C.3 below, both RHR Service Water Subsystem loops shall be operable whenever irradiated fuel is in the reactor vessel and prior to reactor startup from a cold condition.
2. From and after the date that one of the RHR service water pumps is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding thirty days unless such pump is sooner made operable, provided that during such thirty days all other active components of the RHR Service Water Subsystem are operable.
3. From and after the date that one RHR Service Water Subsystem is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such subsystem is sooner made operable, provided that all active components of the other RHR Service Water Subsystem, both Core Spray Subsystems, and both diesel generators required for operation of such components if no external source of power were available, shall be operable.

4.5 SURVEILLANCE REQUIREMENT

C. Residual Heat Removal (RHR)  
Service Water System

Surveillance of the RHR Service Water System shall be performed as follows:

1. RHR Service Water Subsystem testing:  
  
Operability testing of pumps and valves shall be in accordance with Specification 4.6.E.
2. Deleted.
3. Deleted.

### 3.5 LIMITING CONDITION FOR OPERATION

4. If the requirements of Specification 3.5.C cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a cold shutdown condition within 24 hours.

#### D. Station Service Water and Alternate Cooling Tower Systems

1. Except as specified in Specifications 3.5.D.2 and 3.5.D.3, the Station Service Water System and both essential equipment cooling loops and the alternate cooling tower shall be operable whenever irradiated fuel is in the reactor vessel and reactor coolant temperature is greater than 212°F.
2. From and after the date that the Station Service Water System is made or found to be unable to provide adequate cooling to one of the two essential equipment cooling loops, reactor operation is permissible only during the succeeding 15 days unless adequate cooling capability to both essential equipment cooling loops is restored sooner, provided that during such 15 days all other active components of the remaining essential equipment cooling loop and the Station Service Water and Alternate Cooling Tower Systems are operable.

### 4.5 SURVEILLANCE REQUIREMENT

#### D. Station Service Water and Alternate Cooling Tower Systems

Surveillance of the Station Service Water and Alternate Cooling Tower Systems shall be performed as follows:

1. Operability testing of pumps and valves shall be in accordance with Specification 4.6.E.
2. Deleted.

### 3.5 LIMITING CONDITION FOR OPERATION

3. From and after the date that the Alternate Cooling Tower System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days, unless the Alternate Cooling Tower System is made operable, provided that during such seven days all active components of the Station Service Water System and both essential equipment cooling loops are operable.
4. If the requirements of Specification 3.5.D cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a cold shutdown condition within 24 hours.

#### E. High Pressure Cooling Injection (HPCI) System

1. Except as specified in Specification 3.5.E.2, whenever irradiated fuel is in the reactor vessel and reactor steam pressure is greater than 150 psig:
  - a. The HPCI System shall be operable.
  - b. The condensate storage tank shall contain at least 75,000 gallons of condensate water.

### 4.5 SURVEILLANCE REQUIREMENT

3. Deleted.

#### E. High Pressure Coolant Injection (HPCI) System

Surveillance of HPCI System shall be performed as follows:

1. Testing
  - a. A simulated automatic actuation test of the HPCI System shall be performed during each refueling outage.
  - b. Operability testing of the pump and valves shall be in accordance with Specification 4.6.E.
  - c. Upon reactor startup, HPCI operability testing shall be performed as required by Specification 4.6.E within 24 hours after exceeding 150 psig reactor steam pressure.

### 3.5 LIMITING CONDITION FOR OPERATION

2. From and after the date that the HPCI System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 14 days unless such system is sooner made operable, provided that:
  - a. The RCIC System is immediately verified by administrative means to be operable, and
  - b. During such 14 days all active components of the Automatic Depressurization System, the Core Spray Subsystems, the LPCI Subsystems, and the RCIC System are operable.
3. If the requirements of either Specification 3.5.E or Specification 4.5.E.1.c cannot be met, an orderly shutdown shall be initiated and the reactor pressure shall be reduced to  $\leq 150$  psig within 24 hours.

#### F. Automatic Depressurization System

1. Except as specified in Specification 3.5.F.2 below, the entire Automatic Depressurization Relief System shall be operable at any time the reactor steam pressure is above 150 psig and irradiated fuel is in the reactor vessel.
2. From and after the date that one of the four relief valves of the Automatic Depressurization Subsystem are made or found to be inoperable

### 4.5 SURVEILLANCE REQUIREMENT

- d. The HPCI System shall deliver at least 4250 gpm at normal reactor operating pressure when recirculating to the Condensate Storage Tank.
2. Deleted.

#### F. Automatic Depressurization System

Surveillance of the Automatic Depressurization System shall be performed as follows:

1. Operability testing of the relief valves shall be in accordance with Specification 4.6.E.
2. Deleted.

### 3.5 LIMITING CONDITION FOR OPERATION

- b. During such 14 days all active components of the HPCI System are operable.
3. If the requirements of either Specification 3.5.G or Specification 4.5.G.1.c cannot be met, an orderly shutdown shall be initiated and the reactor pressure shall be reduced to  $\leq 150$  psig within 24 hours.

#### H. Minimum Core and Containment Cooling System Availability

1. During any period when one of the emergency diesel generators is inoperable, continued reactor operation is permissible only during the succeeding seven days, provided that all of the LPCI, Core Spray and Containment Cooling Subsystems connecting to the operable diesel generator shall be operable. If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.
2. Any combination of inoperable components in the Core and Containment Cooling Systems shall not defeat the capability of the remaining operable components to fulfill the core and containment cooling functions.
3. When irradiated fuel is in the reactor vessel and the reactor is in either a refueling or cold shutdown condition, all Core and Containment Cooling Subsystems may be inoperable provided no work is permitted which has the potential for draining the reactor vessel.

### 4.5 SURVEILLANCE REQUIREMENT

- d. The RCIC System shall deliver at least 400 gpm at normal reactor operating pressure when recirculating to the Condensate Storage Tank.

#### H. Minimum Core and Containment Cooling System Availability

1. Deleted.

BASES:3.5 CORE AND CONTAINMENT COOLANT SYSTEMSA. Core Spray Cooling System and Low Pressure Coolant Injection System

This Specification assures that adequate standby cooling capability is available whenever irradiated fuel is in the Reactor Vessel.

Based on the loss-of-coolant analyses, the Core Spray and LPCI Systems provide sufficient cooling to the core to dissipate the energy associated with the loss-of-coolant accident and to limit the accident-caused core conditions as specified in 10CFR50, Appendix K. The analyses consider appropriate combinations of the two Core Spray Subsystems and the two LPCI Subsystems associated with various break locations and equipment availability in accordance with required single failure assumptions. (Each LPCI Subsystem consists of the LPCI pumps, the recirculation pump discharge valve, and the LPCI injection valve which combine to inject torus water into a recirculation loop.)

The LPCI System is designed to provide emergency cooling to the core by flooding in the event of a loss-of-coolant accident. This system is completely independent of the Core Spray System; however, it does function in combination with the Core Spray System to prevent excessive fuel clad temperature. The LPCI and the Core Spray Systems provide adequate cooling for break areas up to and including the double-ended recirculation line break without assistance from the high pressure emergency Core Cooling Subsystems.

Specification 3.5.A.1 is modified by a Note that allows LPCI subsystems to be considered OPERABLE during alignment and operation for decay heat removal with reactor pressure less than the RHR shutdown cooling permissive pressure, if capable of being manually realigned (remote) to the LPCI mode and not otherwise inoperable. This allows operation in the RHR shutdown cooling mode during Hot Shutdown, if necessary.

The intent of these specifications is to prevent startup from the cold condition without all associated equipment being operable. However, during operation, certain components may be out of service for the specified allowable repair times. Assurance that the systems will perform their intended function is obtained from the results of the pump and valve testing performed in accordance with ASME Section XI requirements referenced in Specification 4.6.E.

B. and C. Containment Spray Cooling Capability and RHR Service Water System

The containment heat removal portion of the RHR System is provided to remove heat energy from the containment in the event of a loss-of-coolant accident. For the flow specified, the containment long-term pressure is limited to less than 5 psig and, therefore, the flow is more than ample to provide the required heat removal capability. Reference: Section 14.6.3.3.2 FSAR.

Each Containment Cooling Subsystem consists of two RHR service water pumps, 1 heat exchanger, and 2 RHR (LPCI) pumps. Either set of equipment is capable of performing the containment cooling function. In fact, an analysis in Section 14.6 of the FSAR shows that one subsystem consisting of 1 RHR service water pump, 1 heat exchanger, and 1 RHR pump has sufficient capacity to perform the cooling function. Assurance that the systems will perform their intended function is obtained from the results of the pump and valve testing performed in accordance with ASME Section XI requirements referenced in Specification 4.6.E.

BASES: 3.5 (Cont'd)

D. Station Service Water and Alternate Cooling Tower Systems

The Station Service Water System consists of pumps, valves and associated piping necessary to supply water to two essential equipment cooling loops and additional essential and nonessential equipment cooling loads. Each of the two Station Service Water essential equipment cooling loops includes valves, piping and associated instrumentation necessary to provide a flowpath to essential equipment. The Station Service Water essential equipment cooling loops provide redundant heat sinks to dissipate residual heat after a shutdown or accident. Each Station Service Water essential equipment cooling loop provides sufficient heat sink capacity to perform the required heat dissipation. Analyses have shown that any two service water pumps are capable of providing adequate cooling capability to the essential equipment cooling loops. To ensure this capability, four Service Water pumps and two Service Water essential equipment cooling loops must be operable. This ensures that at least two operable Service Water Pumps and one operable essential equipment cooling loop will be available in the event of the worst single active failure occurring coincident with a loss of off-site power. A Service Water pump is considered operable when it is capable of taking suction from an intake bay and transferring water to a Service Water essential equipment cooling loop at the specified pressures and flow rates. An essential equipment cooling loop is considered operable when it has a flow path capable of transferring water to the essential equipment, when required. The Alternate Cooling Tower System will provide the necessary heat sink for normal post-shutdown conditions in the event that the Station Service Water System becomes incapacitated due to a loss of the Vernon Dam with subsequent loss of the Vernon Pond, flooding of the Service Water intake structure (due to probable maximum flood in the river or an upstream dam failure) or fire in the Service Water intake structure which disables all four Service Water pumps.

If one or more Station Service Water component(s) are inoperable such that the Station Service Water System would not be capable of performing its safety function, assuming a single active failure (e.g., a pump, valve or diesel generator), then at least one essential equipment cooling loop is inoperable. If one or more component(s) are inoperable such that the Station Service Water System would not be capable of performing its safety function, even without assuming a single active failure, then both essential equipment cooling loops are inoperable.

Although the Station Service Water (SSW) System can perform its safety function with only two operable SSW pumps, the SSW System may not be capable of performing its safety function assuming one or two inoperable SSW pumps and assuming a worst case single active failure (e.g., failure of a diesel generator, SSW pump, SSW valve, etc.). Therefore, reactor operation with one or two inoperable SSW pumps is limited to 15 days provided that during this time both the normal and emergency power supplies for the remaining operable SSW pumps are also operable, in addition to requiring the operability of all remaining active components of the SSW system which perform a safety function and the alternate cooling tower fan.

If the SSW System would not be capable of performing its safety function for a reason other than one or two SSW pumps being inoperable, assuming a worst case single active failure (e.g., failure of a diesel generator,

BASES: 3.5 (Cont'd)

SSW pump, SSW valve, etc.), then reactor operation is limited to 15 days provided that during this time both the normal and emergency power supplies for the remaining operable equipment are also operable, in addition to requiring the operability of all remaining active components of the SSW system which perform a safety function and the alternate cooling tower fan.

If the SSW System would not be capable of performing its safety function for any reason, even without assuming a worst case single active failure, then the reactor must be placed in the cold shutdown condition within 24 hours.

E. High Pressure Coolant Injection System

The High Pressure Coolant Injection System (HPCIs) is provided to adequately cool the core for all pipe breaks smaller than those for which the LPCI or Core Spray Cooling Subsystems can protect the core.

The HPCIs meets this requirement without the use of outside power. For the pipe breaks for which the HPCIs is intended to function the core never uncovers and is continuously cooled; thus, no clad damage occurs and clad temperatures remain near normal throughout the transient. Reference: Subsection 6.5.2.2 of the FSAR.

In accordance with Specification 3.5.E.2, if the HPCI System is inoperable and the RCIC System is verified to be operable, the HPCI System must be restored to operable status within 14 days during reactor power operation. In this condition, adequate core cooling is ensured by the operability of the redundant and diverse low pressure emergency core cooling system (ECCS) injection and spray subsystems in conjunction with the Automatic Depressurization System (ADS). Also, the RCIC System will automatically provide makeup water at reactor operating pressures above 150 psig. During reactor power operation, immediate verification of RCIC operability is therefore required when HPCI is inoperable. This may be performed as an administrative check by examining logs or other information to determine if RCIC is out of service for maintenance or other reasons. It does not mean it is necessary to perform the surveillances needed to demonstrate the operability of the RCIC System. If operability of the RCIC System cannot be verified, however, Specification 3.5.E.3 requires that an orderly shutdown be initiated and reactor pressure reduced to  $\leq 150$  psig within 24 hours.

F. Automatic Depressurization System

The Automatic Depressurization System (ADS) consists of the four safety-relief valves and serves as a backup to the High Pressure Coolant Injection System (HPCI). ADS is designed to provide depressurization of the reactor coolant system during a small break loss-of-coolant accident if HPCI fails or is unable to maintain sufficient reactor water level. Since HPCI operability is required above 150 psig, ADS operability is also required above this pressure.

ADS operation reduces the reactor pressure to within the operating pressure range of the low pressure coolant injection and core spray systems, so that these systems can provide reactor coolant inventory makeup.

BASES: 3.5 (Cont'd)

The low pressure ECCS injection/spray subsystems consist of two core spray (CS) and two low pressure coolant injection (LPCI) subsystems. During cold shutdown and refueling conditions, each CS subsystem requires one motor driven pump, piping, and valves to transfer water from the suppression pool or condensate storage tank to the reactor pressure vessel (RPV). Also, during cold shutdown and refueling conditions, each LPCI subsystem requires one motor driven pump, piping, and valves to transfer water from the suppression pool to the RPV. Under these conditions, only a single LPCI pump is required per subsystem because of the larger injection capacity in relation to a CS subsystem. During shutdown and refueling conditions, LPCI subsystems may be considered operable during RHR system alignment and operation for decay heat removal, if those subsystems are capable of being manually realigned to the LPCI mode and are not otherwise inoperable. Because of low pressure and low temperature conditions during cold shutdown and refueling, sufficient time will be available to manually align and initiate LPCI subsystem operation to provide core cooling prior to postulated fuel uncoverly.

I. Maintenance of Filled Discharge Pipe

Full discharge lines are required when the core spray subsystems, LPCI subsystems, HPCI and RCIC are required to be operable to preclude the possibility of damage to the discharge piping due to water hammer action upon a pump start.

BASES: 4.5 (Cont'd)

The Automatic Depressurization System is tested during refueling outages to avoid an undesirable blowdown of the Reactor Coolant System.

The HPCI Automatic Actuation Test will be performed by simulation of the accident signal. The test is normally performed in conjunction with the automatic actuation of all Core Standby Cooling Systems.

G. Reactor Core Isolation Cooling System

The frequency and conditions for testing of the RCIC system are the same as for the HPCI system. Testing is conducted in accordance with Specification 4.6.E and provides assurance that the system will function as intended.

H. Minimum Core and Containment Cooling System Availability

Deleted.

I. Maintenance of Filled Discharge Pipe

Observation of water flowing from the discharge line high point vent as required by Specification 4.5.I assures that the Core Cooling Subsystems will not experience water hammer damage when any of the pumps are started. Core Spray Subsystems and LPCI Subsystems will also be vented through the discharge line high point vent following a return from an inoperable status to assure that the system is "solid" and ready for operation.

### 3.7 LIMITING CONDITIONS FOR OPERATION

3. a. From and after the date that one train of the Standby Gas Treatment System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such train is sooner made operable, provided that during such seven days all active components of the other standby gas treatment train shall be operable.

If this condition cannot be met during reactor operation, or the inoperable train is not restored to operable status within seven days, the actions and completion times of Specification 3.7.B.4.a shall apply.

3. b. From and after the date that one train of the Standby Gas Treatment System is made or found to be inoperable for any reason, operations requiring secondary containment are permissible during the succeeding seven days unless such train is sooner made operable, provided that during such seven days all active components, including the associated Emergency Diesel Generator of the other standby gas treatment train shall be operable.

If this condition cannot be met during a refueling or cold

### 4.7 SURVEILLANCE REQUIREMENTS

once per operating cycle not to exceed 18 months. If the ultrasonic test indicates the presence of a leak, the condition will be evaluated and the gasket repaired or replaced as necessary.

- f. DOP and halogenated hydrocarbon test shall be performed following any design modification to the Standby Gas Treatment System housing that could have an effect on the filter efficiency.
- g. An air distribution test demonstrating uniformity within  $\pm 20\%$  across the HEPA filters and charcoal adsorbers shall be performed if the SGTs housing is modified such that air distribution could be affected.
3. a. At least once per operating cycle automatic initiation of each train of the Standby Gas Treatment System shall be demonstrated.
- b. Operability testing of valves shall be in accordance with Specification 4.6.E.
- c. Deleted.

### 3.10 LIMITING CONDITIONS FOR OPERATION

#### B. Operation With Inoperable Components

Whenever the reactor is in Run Mode or Startup Mode with the reactor not in the Cold Condition, the requirements of 3.10.A shall be met except:

##### 1. Diesel Generators

From and after the date that one of the diesel generators or its associated buses are made or found to be inoperable for any reason and the remaining diesel generator is operable, the requirements of Specification 3.5.H.1 shall be satisfied.

##### 2. Batteries

- a. From and after the date that ventilation is lost in the Battery Room portable ventilation equipment shall be provided.
- b. From and after the date that one of the two 125 volt Station Battery Systems is made or found to be inoperable for any reasons, continued reactor operation is permissible only during the succeeding three days provided Specification 3.5.H is met unless such Battery System is sooner made operable.

### 4.10 SURVEILLANCE REQUIREMENTS

#### B. Operation With Inoperable Components

##### 1. Diesel Generator

When one of the emergency diesel generators is made or found to be inoperable:

- a. Within 24 hours determine that the remaining diesel generator is not inoperable due to common cause failure; or
- b. The remaining diesel generator shall have been or shall be demonstrated to be operable within 24 hours.

##### 2. Batteries

Samples of the Battery Room atmosphere shall be taken daily for hydrogen concentration determination.

### 3.10 LIMITING CONDITIONS FOR OPERATION

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- b. From and after the date that either off-site power source and one diesel generator are made or found to be inoperable for any reason, continued operation is permitted for 24 hours as long as the remaining off-site power source, the remaining diesel generator, associated emergency buses and all Low Pressure Core and Containment Cooling Systems are operable.

If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be in cold shutdown within 24 hours.

### 4.10 SURVEILLANCE REQUIREMENTS

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- b. When either off-site power source and one diesel or associated buses are unavailable:
1. The other off-site power source and all Low Pressure Core and Containment Cooling Systems shall have been or shall be verified operable within one hour and once per eight hours thereafter.
  2. The requirements of Specification 4.10.B.1 shall be met within 24 hours.

BASES: 4.10 (Cont'd)

for the associated batteries. The results of these tests will be logged and compared with the manufacturer's recommendations of acceptability.

The Service Discharge Test (4.10.A.2.c) is a test of the batteries ability to satisfy the design requirements of the associated dc system. This test will be performed using simulated or actual loads at the rates and for the durations specified in the design load profile (battery duty cycle).

Assurance that the diesels will meet their intended function is obtained by periodic surveillance testing and the results obtained from the pump and valve testing performed in accordance with the requirements of ASME Section XI and Specification 4.6.E. Specification 4.10.B.1.a provides an allowance to avoid unnecessary testing of the operable emergency diesel generator (EDG). If it can be determined that the cause of the inoperable EDG (e.g., removal from service to perform routine maintenance or testing) does not exist on the operable EDG, demonstration of operability of the remaining EDG does not have to be performed. If the cause of inoperability exists on the remaining EDG, it is declared inoperable upon discovery, and Limiting Condition for Operation 3.5.H.1 requires reactor shutdown within 24 hours. Once the failure is repaired, and the common cause failure no longer exists, Specification 4.10.B.1.a is satisfied. If the cause of the initial inoperable EDG cannot be confirmed not to exist on the remaining EDG, performance of Surveillance Requirement (SR) 4.10.B.1.b suffices to provide assurance of continued operability of that EDG.

In the event the inoperable EDG is restored to operable status prior to completing either SR 4.10.B.1.a or SR 4.10.B.1.b, the plant corrective action program will continue to evaluate the common cause possibility. This continued evaluation, however, is no longer under the 24 hour constraint imposed while in the condition of SR 4.10.B.1 or SR 4.10.B.3.b.2.

According to NRC Generic Letter 84-15, 24 hours is a reasonable time to confirm that the operable EDG is not affected by the same problem as the inoperable EDG.

Verification of operability of an off-site power source and Low Pressure Core and Containment Cooling Systems within one hour and once per eight hours thereafter as required by 4.10.B.3.b.1 may be performed as an administrative check by examining logs and other information to determine that required equipment is available and not out of service for maintenance or other reasons. It does not require performing the surveillance needed to demonstrate the operability of the equipment.

- C. Logging the diesel fuel supply weekly and after each operation assures that the minimum fuel supply requirements will be maintained. During the monthly test for quality of the diesel fuel oil, a viscosity test and water and sediment test will be performed as described in ASTM D975-68. The quality of the diesel fuel oil will be acceptable if the results of the tests are within the limiting requirements for diesel fuel oils shown on Table 1 of ASTM D975-68.