LIST OF FIGURES

REV

INTRODUCTION

These Technical Specifications are prepared in accordance with the requirements of 10CFR50.36 and apply to the Monticello Nuclear Generating Plant, Unit No. 1. The bases for these Specifications are included for information and understandability purposes.

1.0 Definitions

The succeeding frequently used terms are explicitly defined so that a uniform interpretation of the Specifications may be achieved.

A. Alteration of the Reactor Core - The act of moving any component in the region above the core support plate, below the upper grid and within the shroud with the vessel head removed and fuel in the vessel. (Normal operating functions such as control rod movement using the normal drive mechanism, tip scans, SRM and IRM detector movements, etc., are not to be considered core alterations.

B. Hot Standby - Hot Standby means operations with the reactor critical in the startup mode at a power level just sufficient to maintain reactor pressure and temperature.

C. Fire Suppression Water System - The fire suppression water system consists of: water sources; pumps; and distribution piping with associated sectionalizing isolation valves. Such valves include yard hydrant valves, and the first valve ahead of the water flow alarm device on each sprinkler, hose standpipe, or spray system riser.

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

E. Instrument Functional Test - An instrument functional test means the injection of a simulated signal into the primary sensor to verify proper instrument channel response, alarm, and/or initiating action.

Bases Continued:

Worth of individual rods is very low in a uniform rod pattern. Thus, of all possible sources of reactivity input, uniform control rod withdrawal is the most probable cause of significant power rise. Because the flux distribution associated with uniform rod withdrawals does not involve high local peaks, and because several rods must be moved to change power by a significant percentage of rated power, the rate of power rise is very slow. Generally, the heat flux is in near equilibrium with the fission rate. In an assumed uniform rod withdrawal approach to the scram level, the rate of power rise is no more than 5% of rated power per minute, and the IRM system would be more than adequate to assure a scram before the power could exceed the safety limit. The IRM scram remains active until the mode switch is placed in the run position. This switch occurs when reactor pressure is greater than 850 psig.

The operator will set the APRM neutron flux trip setting no greater than that stated in Specification 2.3.A.1. However, the actual setpoint can be as much as 3% greater than that stated in Specification 2.3.A.1 for recirculation driving flows less than 50% of design and 2% greater than that shown for recirculation driving flows greater than 50% of design due to the deviations discussed on page 39.

B. Deleted

TABLE 3.1.1
REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT REQUIREMENTS

Trip Function	Limiting Trip Settings	Modes in which function must be Operable or Operating** Refuel(3)	Startup	Run	Total No. of Instrument Channels per Trip System	Min. No. of Operable or Operating Instrument Channels Per Trip System(1)	Required Condition
1. Mode Switch in Shutdown		X	X	X	1	1	A
2. Manual Scram		X	X	X	1	1	A
3. Neutron Flux IRM (See Note 2)	≤ 120/125 of full scale	X	X	X(c)	4	3	A
a. High-High							
b. Inoperative							
4. Flow Referenced Neutron Flux APRM (See Note 5)	See Specifications 2.3A.1			X	3	2	A or B
a. High-High							
b. Inoperative							
c. Downscale	≥ 3/125 of full scale						
5. High Reactor Pressure (See Note 9)	≤ 1075 psig	X	X(f)	X(f)	2	2	A
6. High Drywell Pressure (See Note 4)	≤ 2 psig	X	X(e,f)	X(e,f)	2	2	A
7. Reactor Low Water Level	≥ 7 in.(6)	X	X(f)	X(f)	2	2	A
8. Scram Discharge Volume High Level							
a. East	≤ 56 gal.(8)	X(a)	X(f)	X(f)	2	2	A
b. West	≤ 56 gal.(8)	X(a)	X(f)	X(f)	2	2	A
9. Turbine Condenser Low Vacuum	≥ 23 in. Hg	X(b)	X(b,f)	X(f)	2	2	A or C

TABLE 3.1.1 - CONTINUED

Trip Function	Limiting Trip Settings	Modes in which function must be Operable or Operating** Refuel(3)	Startup	Run	Total No. of Instrument Channels per Trip System	Min. No. of Operable or Operating Instrument Channels Per Trip System(1)	Required Conditions*
10. Main Steam Line High Radiation (See Note 9)	≤10 X Normal background at rated power	X	X(f)	X(f)	2	2	A
11. Main Steamline Isolation Valve Closure	≤10% Valve Closure	X(b)	X(b)	X	8	8	A or C
12. Turbine Control Valve Fast Closure	(See Note 7)			X(d,f)	2	2	D
13. Turbine Stop Valve Closure	≤10% Valve Closure			X(d)	4	4	D

NOTES:

1. There shall be two operable or tripped trip systems for each function.

2. The Detector for each operable IRM channel shall be fully inserted until the associated APRM channel is operable and indicating at least 3/125 full scale.

3. In the refueling mode with the reactor subcritical and reactor water temperature less than 212°F, only the following trip functions need to be operable: (a) Mode Switch in Shutdown, (b) Manual Scram, (c) High Flux IRM, (d) Scram Discharge Volume Level.

4. Not required to be operable when primary containment integrity is not required.

5. To be considered operable, an APRM must have at least 2 LPRM inputs per level and at least a total of 14 LPRM inputs, except that channels 1, 2, 5, and 6 may lose all LPRM inputs from the companion APRM Cabinet plus one additional LPRM input and still be considered operable.

6. Seven inches on the water level instrumentation is 10'6" above the top of the active fuel at rated power.

7. Trips upon loss of oil pressure to the acceleration relay.

8. Limited trip setting refers to the volume of water in the discharge volume receiver tank and does not include the volume in the lines to the level switches.

9. High reactor pressure and main steam line radiation high radiation are not required to be operable when the reactor vessel head is unbolted.

* Required Conditions when minimum conditions for operation are not satisfied.

A. All operable control rods fully inserted within 8 hours.

B. Power on IRM range or below and reactor in Startup, Refuel, or Shutdown mode.

C. Reactor in Startup or Refuel mode and pressure below 600 psig.

D. Reactor power less than 45% (751.5 MWt.).

** Allowable Bypass Conditions

It is permissible to bypass:

a. The scram discharge volume High Water Level scram function in the refuel mode to allow reactor protection system reset. A rod block shall be applied while the bypass is in effect.

b. The Low Condenser vacuum and MSIV closure scram functions in the Refuel and Startup modes if reactor pressure is below 600 psig.

c. The scram function of an IRM instrument channel when the reactor is in the Run mode and the associated APRM is operable and indicating at least 3/125 full scale.

d. The turbine stop valve closure and fast control valve closure scram functions when the reactor thermal power is 45%(751.5 MWt).

TABLE 4.1.1

SCRAM INSTRUMENT FUNCTIONAL TESTS

MINIMUM FUNCTIONAL TEST FREQUENCIES FOR SAFETY INSTRUMENTATION AND CONTROL CIRCUITS

INSTRUMENT CHANNEL	GROUP*	FUNCTIONAL TEST	MINIMUM FREQUENCY (4)
High Reactor Pressure	A	Trip Channel and Alarm	Once each month
High Drywell Pressure	A	Trip Channel and Alarm	Once each month
Low Reactor Water Level (2)	A	Trip Channel and Alarm	Once each month
High Water Level in Scram Discharge	A	Trip Channel and Alarm	Once each month
Condenser Low Vac	A	Trip Channel and Alarm	Once each month
Main Steam Line Isolation Valve Closure	A	Trip Channel and Alarm	Once each month
Turbine Stop Valve Closure	A	Trip Channel and Alarm	Once each month
Manual Scram	A	Trip Channel and Alarm	Once each month
Turbine Control Valve Fast Closure	A	Trip Channel and Alarm	Once each month
APRM/Flow Reference (5)	B	Trip Output Relays	Once each week
IRM (5)	C	Trip Channel and Alarm	Note 3
High Steam Line Rad. (5)	B	Trip Channel and Alarm	Once each week
Mode Switch in Shutdown	C	Place mode switch in shutdown	Each refueling outage

Note 1: (Deleted)

Note 2: A sensor check shall be performed on low reactor water level once per day and on high steam line radiation once per shift.

Note 3: Perform functional test prior to every startup and normal shutdown.

Note 4: Functional test are not required when the systems are not required to be operable or are tripped. If tests are missed, they shall be performed prior to returning the systems to an operable status.

Note 5: A functional test of this instrument means the injection of a simulated signal into the instrument (not primary sensor) to verify the proper instrument channel response, alarm, and/or initiating action.

*Groups

A. On-Off sensors that provide a scram trip function.
B. Analog devices coupled with bi-stable trips that provide a scram function.
C. Devices which only serve a useful function during some restricted mode of operation, such as startup or shutdown, or which the only practical test is one that can be performed at shutdown.

Bases:

4.0 This specification provides that surveillance activities necessary to ensure the Limiting Conditions for Operations are met and will be performed during the periods when the Limiting Conditions for Operation are applicable.

A tolerance for performing surveillance activities beyond the nominal interval is provided to allow operational flexibility because of scheduling and performance considerations. The plant uses a fixed surveillance program that prevents repetitive addition of the allowable 25% extension. Each surveillance test is completed within plus or minus 25% of each scheduled fixed date. Scheduled dates are based on dividing each calendar year into four 13-week "surveillance" quarters consisting of 3 4-week "surveillance" months and one "catch up" week. This method of scheduling permits certain tests to always to be scheduled on certain days of the week.

The specification ensures that surveillance activities associated with a Limiting Condition for Operation have been performed within the specified time interval prior to entry into a plant condition for which the Limiting Condition for Operation is applicable. Under the terms of this specification, for example, during-initial plant startup or following extended plant outage, the surveillance activities must be performed within the stated surveillance interval prior to placing or returning the system or equipment to Operable status.

4.1 The 13 scram sensor channels listed in Table 4.1.1 are divided into three groups (A., B., and C.) and are defined on Table 4.1.1.

The sensors that make up group (A) are specifically selected from among the whole family of industrial on-off sensors that have earned an excellent reputation for reliable operation. The probability of success is primarily a function of the sensor failure rate and the test interval. A one month test interval is specified for group (A) sensors. This is in keeping with good operating practice, and exceeds the design goal for the logic configuration utilized in the Reactor Protection System.

Bases Continued:

4.1 Group (B) devices utilize an analog sensor followed by an amplifier and a bi-stable trip circuit. The sensor and amplifier are active components and a failure is almost always accompanied by an alarm and an indication of the source of trouble. In the event of failure, repair or substitution can start immediately. An "as-is" failure is one that "sticks" mid-scale and is not capable of going either up or down in response to an out-of-limits input. This type of failure for analog device is a rare occurrence and is detectable by an operator who observes that one signal does not track the other three. The test frequency of once per week has developed principally on the basis of past practice and good judgment, and nothing has developed to indicate that the frequency should change.

Group (C) devices are active only during a given portion of the operational cycle. For example, the IRM is active during startup and inactive during full-power operation. Thus, the only test that is meaningful is the one performed just prior to shutdown or startup; i.e., the tests that are performed just prior to use of the instrument.

Calibration frequency of the instrument channel is divided in two groups as defined on Table 4.1.2.

Experience with passive type instruments indicates that a yearly calibration is adequate. Where possible, however, quarterly calibration is performed. For those devices which employ amplifiers, etc., drift specifications call for a drift to be less than 0.5%/month; i.e., in the period of a month a drift of 0.5% would occur and thus provide for adequate margin. For the APRM system, drift of electronic apparatus is not the only consideration in determining a calibration frequency. Change in power distribution and loss of chamber sensitivity dictate a calibration every three days. Calibration on this frequency assures plant operation at or below thermal limits.

Table 3.2.5
Instrumentation that Initiates a Recirculation Pump Trip
and Alternate Rod Injection

Function	Trip Setting	Minimum No. of Operable or Operating Trip Systems (1)	Total No. of Instrument Channels per Trip System	Minimum No. of Operable or Operating Instrument Channels Per Trip System (1)	Required Conditions*
1. High Reactor Dome Pressure	$\leq$ 1150 psig	2	2	2	A
2. Low-Low Reactor Water Level	$\geq$ 6'6" above the top of the active fuel	2	2	2	A

NOTE:

1. When one of the two trip systems is made or found to be inoperable, restore the inoperable trip system to operable status within 14 days or place the plant in the specified required condition within the next eight hours. When both trip sytems are inoperable, place the plant in the specified required condition within eight hours unless at least one trip system is sooner made operable.

* Required conditions when minimum conditions for operation are not satisfied:

A. Reactor in Startup, Refuel, or Shutdown Mode.

Table 4.2.1
Minimum Test and Calibration Frequency For Core Cooling
Rod Block and Isolation Instrumentation

Instrument Channel	Test (3)	Calibration (3)	Sensor Check (3)
ECCS INSTRUMENTATION			
1. Reactor Low-Low Water Level	Once/month	Once/3 months	Once/Shift
2. Drywell High Pressure	Once/month	Once/3 months	None
3. Reactor Low Pressure (Pump Start)	Once/month	Once/3 months	None
4. Reactor Low Pressure (Valve Permissive)	Once/month	Once/3 months	None
5. Undervoltage Emergency Bus	Refueling Outage	Refueling Outage	None
6. Low Pressure Core Cooling Pumps Discharge Pressure Interlock	Once/month	Once/3 months	None
7. Loss of Auxiliary Power	Refueling Outage	Refueling Outage	None
8. Condensate Storage Tank Level	Refueling Outage	Refueling Outage	None
9. Reactor High Water Level	Once/month	Once/3 months	Once/day
ROD BLOCKS			
1. APRM Downscale	Once/month (Note 5)	Once/3 months	None
2. APRM Flow Variable	Once/month (Note 5)	Once/3 months	None
3. IRM Upscale	Notes (2,5)	Note 2	Note 2
4. IRM Downscale	Notes (2,5)	Note 2	Note 2
5. RBM Upscale	Once/month (Note 5)	Once/3 months	None
6. RBM Downscale	Once/month (Note 5)	Once/3 months	None
7. SRM Upscale	Notes (2,5)	Note 2	Note 2
8. SRM Detector Not-Full-In Position	Notes (2,9)	Note 2	None
9. Scram Discharge Volume-High Level	Once/3 months	Refueling outage	None
MAIN STEAM LINE (GROUP I) ISOLATION			
1. Steam Tunnel High Temperature	Refueling Outage	Refueling Outage	None
2. Steam Line High Flow	Once/month	Once/3 months	Once/Shift

Table 4.2.1 - Continued

Minimum Test and Calibration Frequency For Core Cooling Rod Block and Isolation Instrumentation

Instrument Channel	Test (3)	Calibration (3)	Sensor Check (3)
3. Steam Line Low Pressure	Once/month	Once/3 months	None
4. Steam Line High Radiation	Once/week (Note 5)	Note 6	Once/shift
5. Reactor Low Low Water Level	Once/month	Once/3 months	None
CONTAINMENT ISOLATION (GROUPS 2 & 3)			
1. Reactor Low Water Level (Note 10)	-	-	-
2. Drywell High Pressure (Note 10)	-	-	-
HPCI (GROUP 4) ISOLATION			
1. Steam Line High Flow	Once/month	Once/3 months	None
2. Steam Line High Temperature	Once/month	Once/3 months	None
RCIC (GROUP 5) ISOLATION			
1. Steam Line High Flow	Once/month	Once/3 months	None
2. Steam Line High Temperature	Once/month	Once/3 months	None
REACTOR BUILDING VENTILATION			
1. Radiation Monitors (Plenum)	Once/month	Once/3 months	Once/day
2. Radiation Monitors (Refueling Floor)	Once/month	Once/3 months	Note 4
3. Wide Range Gas Monitors	-	See Table 4.8.2	-
RECIRCULATION PUMP TRIP AND ALTERNATE ROD INJECTION			
1. Reactor High Pressure	Once/month	Once/Operating Cycle-Transmitter Once/3 Months-Trip Unit	Once/Day
2. Reactor Low Low Water Level	Once/month	Once/Operating Cycle-Transmitter Once/3 Months-Trip Unit	Once/shift
SHUTDOWN COOLING SUPPLY ISOLATION			
1. Reactor Pressure Interlock	Once/month	Once/3 Months	None

Table 4.2.1 - Continued

Minimum Test and Calibration Frequency for Core Cooling, Rod Block and Isolation Instrumentation

Instrument Channel	Test (3)	Calibration (3)	Sensor Check (3)
SAFEGUARDS BUS VOLTAGE			
1. Degraded Voltage Protection	Once/month	Quarterly	Not applicable
2. Loss of Voltage Protection	Once/month	Once/Operating Cycle	Not applicable
SAFETY/RELIEF VALVE LOW-LOW SET LOGIC			
1. Reactor Scram Sensing	Once/Shutdown (8)	-	-
2. Reactor Pressure - Opening	Once/3 months	Once/Operating Cycle	Once/day
3. Reactor Pressure - Closing	Once/3 months	Once/Operating Cycle	Once/day
4. Discharge Pipe Pressure	Once/3 months	Once/Operating Cycle	-
5. Inhibit Timer	Once/3 months	Once/Operating Cycle	-

Table 4.2.1 - Continued

Minimum Test and Calibration Frequency for Core Cooling,
Rod Block and Isolation Instrumentation

NOTES:

(1) (Deleted)

(2) Calibrate prior to normal shutdown and start-up and thereafter check once per shift and test once per week until no longer required. Calibration of this instrument prior to normal shutdown means adjustment of channel trips so that they correspond, within acceptable range and accuracy, to a simulated signal injected into the instrument (not primary sensor). In addition, IRM gain adjustment will be performed, as necessary, in the APRM/IRM overlap region.

(3) Functional tests, calibrations and sensor checks are not required when the systems are not required to be operable or are tripped. If tests are missed, they shall be performed prior to returning the systems to an operable status.

(4) Whenever fuel handling is in process, a sensor check shall be performed once per shift.

(5) A functional test of this instrument means the injection of a simulated signal into the instrument (not primary sensor) to verify the proper instrument channel response alarm and/or initiating action.

(6) This instrument will be calibrated every three months by means of a built in current source, and each refueling outage with a known radioactive source.

(7) (Deleted)

(8) Once/shutdown if not tested during previous 3 month period.

(9) Testing of the SRM Not-Full-In rod block is not required if the SRM detectors are secured in the full-in position.

(10) Uses contacts from scram system. Tested and calibrated in accordance with Tables 4.1.1 and 4.1.2.

Bases:

4.2 The instrumentation in this section will be functionally tested and calibrated at regularly scheduled intervals. Although this instrumentation is not generally considered to be as important to plant safety as the Reactor Protection System, the same reliability goals are applied. As discussed in the Section 4.1 Bases, monthly testing is generally specified unless the testing must be conducted during refueling outages. Quarterly calibration is specified unless the calibration must be conducted during refueling outages. Where applicable, sensor checks are specified on a once/shift or one/day basis.

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
Any four rod group may contain a control rod which is valved out of service provided the above requirements and Specification 3.3.A are met.	
3. If the cycle average scram insertion time ($\bar{\tau}_{AVE}$), based on the de-energization of the scram pilot valve solenoids at time zero, of all operable control rods in the reactor power operation condition at the 20% inserted position is larger than the adjusted analysis mean scram time ($\bar{\tau}_B$), a more restrictive MCPR limit (see section 3.11.C) shall be used.	
D. Control Rod Accumulators	D. Control Rod Accumulators
Control rod accumulators shall be operable in the Startup, Run, or Refuel modes except as provided below.	Once a shift check the status in the control room of the required Operable accumulator pressure and level alarms.
1. In the Startup or Run mode, a rod accumulator may be inoperable provided that no other rod in the nine-rod square array around this rod has a:	
(a) Inoperable accumulator, or	
(b) Directional control valve electrically disarmed while in a non-fully inserted position.	
If a control rod with an inoperable accumulator is inserted "full-in" and its directional control valves are electrically disarmed, it shall not be considered to have an inoperable accumulator.	

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
2. In the Refuel Mode, a rod accumulator may be inoperable provided: (a) All fuel is removed from the cell containing the associated control rod or, (b) The one-rod-out refuel interlock for the associated rod drive is operable.	

3.0 LIMITING CONDITIONS FOR OPERATION

High Pressure Core Cooling Capability

D. High Pressure Coolant Injection (HPCI) System

1. Except as specified in 3.5.D.2 below, the HPCI system shall be operable whenever the reactor pressure is greater than 150 psig and irradiated fuel is in the reactor vessel, except during reactor vessel hydrostatic or leakage tests.

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 seven days unless such system is sooner made operable, provided that during such seven days all of the Automatic Pressure Relief systems, the RCIC system, both of the core spray systems, and LPCI subsystem and containment cooling mode of the RHR system are operable.

4.0 SURVEILLANCE REQUIREMENTS

High Pressure Core Cooling Capability

D. Surveillance of HPCI System shall be performed as follows:

1. Testing

Item	Frequency
Pump operability	Once/month
Motor operated Valve operability	Once/month
Flow rate test	After major pump maintenance and every three months
Simulated automatic actuation test (testing valve operability)	Each refueling outage

2. When it is determined that HPCI system is inoperable, the RCIC system, the LPCI subsystem, and both of the core spray systems shall be demonstrated to be operable immediately.

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
3. To be considered operable, the HPCI system shall meet the following conditions: a. The HPCI shall be capable of delivering 3,000 gpm into the reactor vessel for reactor pressure range of 1120 psig to 150 psig. b. The condensate storage tanks shall contain at least 75,000 gallons of condensate water. c. The controls for automatic transfer of the HPCI pump suction from the condensate storage tank to the suppression chamber shall be operable. 4. If the requirements of 3.5.D.1-2 cannot be met, an orderly reactor shutdown shall be initiated immediately and the reactor pressure shall be reduced to 150 psig within 24 hours thereafter.	

3.0 LIMITING CONDITIONS FOR OPERATION

E. Automatic Pressure Relief System

1. Except as specified in 3.5.E.2 and 3.5.E.3 below, the entire automatic pressure relief system shall be operable whenever the reactor pressure is above 150 psig and irradiated fuel is the reactor vessel, except during reactor vessel hydrostatic or leakage tests.

2. From and after the date that one of the automatic pressure relief system valves is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such valve is sooner made operable, provided that during such seven days both remaining automatic relief system valves and the HPCI system are operable.

3. From and after the date that more than one of the automatic pressure relief valves are made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 24 hours unless repairs are made and provided that during such time the HPCI system is operable.

4. If the requirements of 3.5.E.1-3 cannot be met, an orderly reactor

4.0 SURVEILLANCE REQUIREMENTS

E. Surveillance of the Automatic Pressure Relief System shall be performed as follows:

1. Testing

Item	Frequency
Valve operability	Each operating cycle
Simulated automatic actuation test	Each operating cycle

NOTE: Safety/relief valve operability is verified by cycling the valve and observing a compensating change in turbine bypass valve position.

2. When it is determined that one or more automatic pressure relief valves of the Automatic Pressure Relief system is inoperable, the HPCI systems shall be demonstrated to be operable immediately and weekly thereafter.

3.0 LIMITING CONDITIONS FOR OPERATION

shutdown shall be initiated immediately and the reactor pressure shall be reduced to 150 psig within 24 hours thereafter.

F. Reactor Core Isolation Cooling System (RCIC)

1. Except as specified in 3.5.F.2 below, the RCIC system shall be operable whenever the reactor pressure is greater than 150 psig and irradiated fuel is in the reactor vessel, except during reactor vessel hydrostatic or leakage tests. To be considered operable, the RCIC system shall meet the following conditions:

   a. The RCIC shall be capable of delivering 400 gpm into the reactor vessel at 150 psig.

   b. The controls for automatic transfer of the RCIC pump suction from the condensate storage tank to the suppression chamber shall be operable.

   c. The controls for automatic restart on subsequent low reactor level after it has been terminated by a high reactor level signal shall be operable.

4.0 SURVEILLANCE REQUIREMENTS

F. Surveillance of Reactor Core Isolation Cooling System (RCIC)

Surveillance of the RCIC System shall be performed as follows:

1. Testing

Item	Frequency
Pump operability	Once/month
Motor operated valve operability	Once/month
Flow rate test	After major pump maintenance and every three months
Simulated automatic actuation, transfer of suction to suppression pool, and automatic restart on subsequent low reactor water level	Once/Operating Cycle

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS

3.7 CONTAINMENT SYSTEMS

Applicability:

Applies to the operating status of the primary and secondary containment systems.

Objective:

To assure the integrity of the primary and secondary containment systems.

Specification:

A. Primary Containment.

1. Suppression Pool Volume and Temperature

When irradiated fuel is in the reactor vessel and either the reactor coolant temperature is greater than 212°F or work is being done which has the potential to drain the vessel, the following requirements shall be met except as permitted by specification 3.5.G.4:

a. Water temperature during normal operation shall be $\leq$90°F.
b. Water temperature during test operation which adds heat to the suppression pool shall be $\leq$100°F and shall not be 90°F for more than 24 hours.
c. If the suppression chamber water temperature is >110°F, the reactor shall be scrammed immediately. Power operation shall not be resumed until the pool temperature is $\leq$90°F.

4.7 CONTAINMENT SYSTEMS

Applicability:

Applies to the primary and secondary containment integrity.

Objective:

To verify the integrity of the primary and secondary containment.

Specification:

A. Primary Containment.

1. Suppression Pool Volume and Temperature

a. The suppression chamber water temperature shall be checked once per day.
b. Whenever there is indication of relief valve operation which adds heat to the suppression pool, the pool temperature shall be continually monitored and also observed and logged every 5 minutes until the heat addition is terminated.
c. A visual inspection of the suppression chamber interior including water line regions and the interior painted surfaces above the water the shall be made at each refueling outage.

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
C. Secondary Containment	C. Secondary Containment
1. Except as specified in 3.7.C.2 and 3.7.C.3 below, Secondary Containment Integrity shall be maintained during all modes of plant operation.	1. Secondary containment surveillance shall be performed as indicated below:
2. Secondary Containment Integrity is not required when all of the following conditions are satisfied:	a. Secondary containment capability to maintain at least a 1/4 inch of water vacuum under calm wind ($2 < u < 5$ mph) conditions with filter train flow rate of $\leq$4,000 scfm, shall be demonstrated at each refueling outage prior to refueling. Verification that each automatic damper actuates to its isolation position shall be performed at each refueling outage and after maintenance, repair or replacement work is performed on the damper or its associated actuator, control circuit, or power circuit.
a. The reactor is subcritical and Specification 3.3.A is met.	
b. The reactor water temperature is below 212°.	
c. No activity is being performed which can reduce the shutdown margin below that specified in Specification 3.3.A.	
d. The fuel cask or irradiated fuel is not being moved within the reactor building.	
3. With an inoperable secondary containment isolation damper, restore the inoperable damper to operable status or isolate the affected duct by use of a closed damper or blind flange within eight hours.	
4. If Specifications 3.7.C.1 through 3.7.C.3 cannot be met, initiate a normal orderly shutdown and have the reactor in Cold Shutdown condition within 24 hours. Alterations of the	

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
E. Extended Core and Control Rod Drive Maintenance More than one control rod may be withdrawn from the reactor core during outages provided that, except for momentary switching to the Startup mode for interlock testing, the reactor mode switch is locked in the Refuel position. The refueling interlock signal from a control rod may be bypassed after the fuel assemblies in the cell containing (controlled by) that control rod have been removed from the reactor core.	

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
3.14 ACCIDENT MONITORING INSTRUMENTATION	4.14 ACCIDENT MONITORING INSTRUMENTATION
Applicability:	Applicability:
Applies to plant instrumentation which does not perform a protective function, but which provides information to monitor and assess important parameters during and following an accident.	Applies to the surveillance requirements for accident monitoring instrumentation.
Objective:	Objective:
To assure that sufficient information is available to operators to determine the effects of and determine the course of an accident to the extent required to carry out required manual actions.	To specify the type and frequency of surveillance to be applied to accident monitoring instrumentation.
Specification:	Specification:
Whenever irradiated fuel is in the reactor vessel and reactor coolant water temperature is greater than 212°F, the limiting conditions for operation for accident monitoring instrumentation given in Table 3.14.1 shall be satisfied.	The accident monitoring instrumentation shall be functionally tested and calibrated in accordance with Table 4.14.1.

Table 3.14.1

Instrumentation for Accident Monitoring

Function	Total No. of Instrument Channels	Minimum No. of Operable Channels	Required Conditions*
Reactor Vessel Fuel Zone Water Level	2	1	A, B
Safety/Relief Valve Position (One Channel Pressure Switch and One Channel Thermocouple Position Indication per Valve)	2	1	A, C
Drywell Wide Range Pressure	2	1	A, B
Suppression Pool Wide Range Level	2	1	A, B
Suppression Pool Temperature	2	1	A, D
Drywell High Range Radiation	2	1	A, D
Drywell and Suppression Pool Hydrogen and Oxygen Monitor	2	1	A, B
Offgas Stack Wide Range Radiation	2	1	A, D
Reactor Bldg Vent Wide Range Radiation	2	1	A, D

* Required Conditions

A. When the number of channels made or found to be inoperable is such that the number of operable channels is less than the total number of channels, either restore the inoperable channels to operable status within seven days, or prepare and submit a special report to the Commission within the next 30 days outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to operable status.

Table 3.14.1 (continued)

Instrumentation for Accident Monitoring

* Required Conditions (continued)

B. When the number of channels made or found to be inoperable is such that the number of operable channels is less than the minimum number of operable channels shown, the minimum number of channels shall be restored to operable status within 48 hours or be in at least Hot Shutdown within the next 12 hours and Cold Shutdown within the following 24 hours.

C. When the number of channels made or found to be inoperable is such that the number of operable channels is less than the minimum number of operable channels shown, the torus temperature shall be monitored at least once per shift to observe any unexplained temperature increase which might be indicative of an open SRV; the minimum number of channels shall be restored to operable status within 30 days or be in at least Hot Shutdown within the next 12 hours and Cold Shutdown within the following 24 hours.

D. When the number of channels made or found to be inoperable is such that the number of operable channels is less than the minimum number of operable channels shown, initiate the preplanned alternate method of monitoring the appropriate parameters in addition to submitting the report required in (A) above.

Table 4.14.1

Minimum Test and Calibration Frequency for
Accident Monitoring Instrumentation

Instrument Channel	Test (Note 1)	Calibration (Note 1)	Sensor Check (Note 1)
Reactor Vessel Fuel Zone Water Level Monitor	-	Once/Operating Cycle	Once/month (Note 3)
Safety/Relief Valve Position (Pressure Switches)	-	Once/Operating Cycle	Once/month (Notes 2, 4)
Safety/Relief Valve Position (Thermocouples)	-	Once/Operating Cycle	Once/month (Note 4)
Drywell Wide Range Pressure Monitors	-	Once/Operating Cycle	Once/month
Suppression Pool Wide Range Level Monitors	-	Once/Operating Cycle	Once/month
Suppression Pool Temperature		Once/Operating Cycle	Once/month
Drywell High Range Radiation Monitors	-	Once/Operating Cycle	Once/month
Drywell and Suppression Pool Hydrogen and Oxygen Monitors	-	Once/Operating Cycle	Once/month
Offgas Stack Wide Range Radiation Monitors	-	Once/Operating Cycle	Once/month
Reactor Bldg Wide Range Radiation Monitors	-	Once/Operating Cycle	Once/month

Notes:

(1) Functional tests, calibrations, and sensor checks are not required when the instruments are not required to be operable. If tests are missed, they shall be performed prior to returning the instruments to an operable status.

(2) Once/month sensor check will consist of verifying that the pressure switches are not tripped.

(3) Once/month sensor check will consist of verifying that the fuel zone level indicates off scale high.

(4) Following every Safety/Relief Valve actuation it will be verified that recorder traces or computer logs indicate sensor responses.