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3.0 LIMITING CONDITIONS FOR OPERATION

E. Reactor Building Ventilation Isolation and Standby Gas Treatment System Initiation

1. a. Except as specified in 3.2.E.1.b below, four radiation monitors shall be operable at all times.

b. One of the two monitors in the ventilation plenum and one of the two radiation monitors on the refueling floor may be inoperable for 24 hours. If the inoperable monitors are not restored to service in this time, the reactor building ventilation system shall be isolated and the standby gas treatment system operated until repairs are complete.
2. The radiation monitors shall be set to trip as follows:

(a) ventilation plenum ≤ 3 mr/hr
(b) refueling floor ≤ 100 mr/hr
3. When irradiated fuel is in the reactor vessel and the reactor water temperature is above 212°F , the limiting conditions for operation for the instrumentation listed in Table 3.2.4 shall be met.

F. Recirculation Pump Trip Initiation

1. Whenever the reactor is in the RUN Mode, the limiting conditions for operation for the instrumentation listed in Table 3.2.5 shall be met.

3.2./4.2

4.0 SURVEILLANCE REQUIREMENTS

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 4. Steam Line High Radiation	Note 1 Once/week (5)	Once/3 months Note 6	None Once/shift
<u>HPCI ISOLATION</u>			
1. Steam Line High Flow 2. Steam Line High Temperature	Note 1 Note 1	Once/3 months Once/3 months	None None
<u>RCIC ISOLATION</u>			
1. Steam Line High Flow 2. Steam Line High Temperature	Note 1 Note 1	Once/3 months Once/3 months	None None
<u>REACTOR BUILDING VENTILATION</u>			
1. Radiation Monitors (Plenum) 2. Radiation Monitors (Refueling Floor)	Note 1 Note 1	Once/3 months Once/3 months	Once/shift (4)
<u>OFF-GAS ISOLATION</u>			
1. Radiation Monitors (Air Ejectors)	Notes (1,5)	Note 6	Once/shift
<u>RECIRCULATION PUMP TRIP</u>			
1. Reactor High Pressure 2. Reactor Low Water Level	Note 1 Note 1	Once/Operating Cycle - Transmitter Once/3 Months- Trip Unit Once/Operating Cycle - Transmitter Once/3 Months- Trip Unit	Once/Day Once/Day

NOTES:

(1) Initially once per month until exposure hours (M as defined in Figures 4.1.1) is 2.0×10^5 , thereafter according to Figure 4.1.1 with an interval not greater than three months.

Bases Continued:

- 3.2 For effective emergency core cooling for the small pipe break the HPCI or Automatic Pressure Relief system must function since for these breaks, reactor pressure does not decrease rapidly enough to allow either core spray or LPCI to operate in time. The arrangement of the tripping contacts is such as to provide this function when necessary and minimize spurious operation. The trip settings given in the specification are adequate to assure the above criteria is met. Reference Section 6.2.4 and 6.2.6 FSAR. The specification preserves the effectiveness of the system during periods of maintenance, testing, or calibration, and also minimizes the risk of inadvertent operation; i.e., only one instrument channel out of service.

Two air ejector off-gas monitors are provided and when their trip point is reached, cause an isolation of the air ejector off-gas line. Isolation is initiated when both instruments reach their high trip point or one has an upscale trip and the other a downscale trip or two downscale. There is a 30-minute delay before recombiner train inlet valve closure when the recombiners are in use and a 15-minute delay before off-gas isolation valve closure when the recombiners are bypassed in which the reactor operator may take corrective action. Both instruments are required for trip. The trip settings of the instruments are set so that the maximum stack release rate limit is not exceeded.

Four radiation monitors are provided which initiate isolation of the reactor building and operation of the standby gas treatment system. The monitors are located in the reactor building ventilation plenum and on the refueling floor. Any one upscale trip will cause the desired action. Trip settings of 3 mR/hr for the monitors in the ventilation duct are based upon initiating normal ventilation isolation and Standby Gas Treatment System operation so as not to exceed the maximum release rate limit

for the reactor building vent. Trip settings of 100 mR/hr for the monitors on the refueling floor are based upon initiating normal ventilation isolation and standby gas treatment system operation so that none of the activity released during the refueling accident leaves the reactor building via the normal ventilation stack but that all the activity is processed by the standby gas treatment system.

The recirculation pump trip description and performance analysis is discussed in Topical Report NEDO-25016, September 1976, "Evaluation of Anticipated Transients Without Scram for the Monticello Nuclear Generating Plant". (See September 15, 1976 letter from Mr L O Mayer, NSP, to Mr D L Ziemann, USNRC.) The pump trip is provided to minimize reactor pressure in the highly unlikely event of a plant transient coincident with the failure of all control rods to scram. The rapid flow reduction

25

Bases Continued:

increases core voiding, a negative reactivity feedback. High pressure sensors initiate the pump trip in the event of an isolation transient. Low level sensors initiate the trip on loss of feed-water (and the resulting MSIV closure). The recirculation pump trip is only required at high reactor power levels, where the safety/relief valves have insufficient capacity to relieve the steam which continues to be generated after reactor isolation in this unlikely postulated event, requiring the trip to be operable only when in the RUN mode is therefore conservative.

Although the operator will set the set points within the trip settings specified in Tables 3.2.1, 3.2.2, 3.2.3, 3.2.4, and 3.2.5, the actual values of the various set points can differ appreciably from the value the operator is attempting to set. The deviations could be caused by inherent instrument error, operator setting error, drift of the set point, etc. Therefore, these deviations have been accounted for in the various transient analyses and the actual trip settings may vary by the following amounts.

Table 3.2.6
Trip Functions And Deviations

	Trip Function	Deviation
Reactor Building Ventilation Isolation and Standby Gas Treatment System Initiation Specification 3.2.E.3 and Table 3.2.4	Ventilation Plenum Radiation Monitors	+0.2 Mr/Hr
	Refueling Floor Radiation Monitors	+5 Mr/Hr
	Low Reactor Water Level High Drywell Pressure	-6 inches + 1 psi
Primary Containment Isolation Functions Table 3.2.1	Low Low Water Level	-3 inches
	High Flow in Main Steam Line	+2 %
	High Temp. in Main Steam Line Tunnel	+2°F
	Low Pressure in Main Steam Line	-10 psi
	High Drywell Pressure	+1 psi
	Low Reactor Water Level	-6 inches
	HPCI High Steam Flow	+7,500 lb/hr
	HPCI Steam Line Area High Temp.	+2°F
	RCIC High Steam Flow	+2250 lb/hr
	RCIC Steam Line Area High Temp	+2°F

Table 3.2.6 - Continued
Trip Function and Deviations

	Trip Function	Deviation
Instrumentation That Initiates Emergency Core Cooling Systems Table 3.2.2	Low-Low Reactor Water Level	-3 Inches
	Reactor Low Pressure (Pump Start) Permissive	-10 psi
	High Drywell Pressure	+1 psi
	Low Reactor Pressure (Valve Permissive	-10 psi
Instrumentation That Initiates Rod Block Table 3.2.3	IRM Downscale	-2/125 of Scale
	IRM Upscale	+2/125 of Scale
	APRM Downscale	-2/125 of Scale
	APRM Upscale	See Basis 2.3 - Page 24
	RBM Downscale	-2/125 of Scale
	RBM Upscale	Same as APRM Upscale
Instrumentation That Initiates Recirculation Pump Trip	High Reactor Pressure	+ 12 psi
	Low Reactor Water Level	- 3 Inches

A violation of this specification is assumed to occur only when a device is knowingly set outside of the limiting trip settings, or, when a sufficient number of devices have been affected by any means such that the automatic function is incapable of operating within the allowable deviation while in a reactor mode in which the specified function must be operable or when actions specified are not initiated as specified.