<u>ا</u> کر	Pump Trip	topot al	tive I per p	ump 4	2	AND
L	1. High Keader Leve	tuel.	Tabl Other Ins	e 3.2.8 trumentation		
	Function	Trip Setting	Minimum No. of Operable or Operating Trip System (1)	Total No. of Instru- ment Channels Per Trip System	Minimum No. of Oper- able or Operating Instrument Channels Per Trip System (1)	Required Conditions
A.	RCIC Initiation					
	1. Low-Low Reactor Level	≥6'6"& ≤6'10" above top of active fuel	1	2	2	В
В.	HPCI/RCIC Turbine Shutdown					
£Ĩ.	High Reactor Level	<14'6" above top of active fuel	1	2	2	A
c.	HPCI/RCIC Curbine Suction Transfer	·				
ِّاح 	B Condensate Storage Tank Lew Level	≥2'0" above tank bottom	1	2	2	С
NOTE 1.	: Upon discovery that mini are not satisfied, actio	mum requirement n shall be init	s for the number iated to:	of operable or operat	ing trip systems or in	strument cha
	a. Satisfy the requirement Turbine/Feedwater Tr b. Place the plant under	nts by placing in only, or the specified	the appropriate required conditi	channels or systems in on using normal operat	the tripped condition ing procedure within	n 24 hou
*	Required conditions when	minimum condit	ions for operati	on are not satisfied:	\sim	
	A. Reactor in Startup, R B. Comply with Specifica	efuel, or shutt tion 3.5.	Newn Mode.			

3.2 4.2 Restore one of the inoperable trip systems or instrument channels within 14 days, or submit a special report to the Commission within the next 30 days outlining the cause of the inoperability and the plans and schedule for restoring the instruments to operable status.

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	Table 4. 2.1 - 0	Continued	· · · · · ·	
Mini	mum Test and Calibration Fre Rod Block and Isolation	equency for C <mark>ore C</mark> ooling, n Instrumentation	,	
Instrument Channel	Test (3)	Calibration (3)	Sensor Check (3)	
SAFECUARDS 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 LO	DGIC		A 1 1 1 1 1 1 1 1 1 1	
 Reactor Scram Sensing Reactor Pressure - Opening Reactor Pressure - Closing Discharge Pipe Pressure Inhibit Timer 	Once/Shutdown (Note 8) Once/3 months (Note 5) Once/3 months (Note 5) Once/3 months (Note 5) Once/3 months (Note 5)	Once/Operating Cycle Once/Operating Cycle See Table 4.14.1 Once/Operating Cycle	Once/day Once/day See Table 4.14.1	
CONTROL ROOM HABITABILITY PROTECTI	ON		······································	
1. Chlorine 2. Radiation	Monthly (Note 5) Monthly (Note 5)	18 months 18 months	Daily Daily	
REACTOR FEEDWATER PUM 1. High Reactor Level	PTRIP Semi-annually	Once/OperatingCyc Transmitter Once/6 months- Trip Unit	le Onedshift	
.2/4.2			63 REV 115-5/30/89-	

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Bases Continued:

3.2 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 feedwater (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.

The ATWS high reactor pressure and low-low water level logic also initiates the Alternate Rod Injection System. Two solenoid values are installed in the scram air header upstream of the hydraulic control units. Each of the two trip systems energizes a value to vent the header and causes rod insertion. This greatly reduces the long term consequences of an ATWS event.

Voltage sensing relays are provided on the safeguards bus to transfer the bus to an alternate source when a loss of voltage condition or a degraded voltage condition is sensed. On loss of voltage this transfer occurs immediately. The transfer on degraded voltage has a time delay to prevent transfer during the starting of large loads. The degraded voltage setpoint corresponds to the minimum acceptable safeguards bus voltage for starting and running loads during a loss of coolant accident. An allowance for relay tolerance is included.

Safety/relief valve low-low set logic is provided to prevent any safety/relief valve from opening when there is an elevated water leg in the respective discharge line. A high water leg is formed immediately following valve closure due to the vacuum formed when steam condenses in the line. If the valve reopens before the discharge line vacuum breakers act to return water level to normal, water clearing thrust loads on the discharge line may exceed their design limit. The logic reduces the opening setpoint and increases the blowdown range of three non-APRS valves following a scram. A 15-second interval between subsequent valve actuations is provided assuming one valve fails to

> As part of the resolution of USI A-47, "Safety Implications of Control Systems," all plants are to provide overfill protection. The feedwater pump trip is a one-out-of-two-taken-twice logic which will trip the reactor feedwater pumps on high reactor water level which provides overfill protection. The feedwater pump trip is a commercial grade system that is available to mitigate main feedwater overfeed events during power operation.

3.2 BASES

REV 95 771786

Exhibit C

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Monticello Nuclear Generating Plant

License Amendment Request dated October 21, 1991

Revised Technical Specification Pages

Exhibit C consists of the Technical Specification pages with the proposed changes incorporated. Existing pages affected by this change are listed below:

Page

60d 63

69

	Table 3.2.8 Other Instrumentation					
	Function	Trip Setting	Minimum No. of Operable or Operating Trip System (1)	Total No. of Instru- ment Channels Per Trip System	Minimum No. of Oper- able or Operating Instrument Channels Per Trip System (1)	Required Conditions* *
Α.	RCIC Initiation					
	1. Low-Low Reactor Level	≥6'6"& ≤6'10" above top of active fuel	1	2	2	В
B.	HPCI/RCIC Turbine Shutdown					
	l. High Reactor Level	≤l4′6" above top of active fuel	1	2	2	A
C.	HPCI/RCIC Pump Suction Transfer					
	l. Condensate Storage Tank Low Level	≥2′0" above tank bottom	1	2	2	С
D.	Reactor Feedwater Pump Trip					
	1. High Reactor Level	≤14'6" above top of active fuel	l per pun	ıp 4	2	A or D

NOTE:

1. Upon discovery that minimum requirements for the number of operable or operating trip systems or instrument channels are not satisfied, action shall be initiated to:

- a. Satisfy the requirements by placing the appropriate channels or systems in the tripped condition, or
- b. Place the plant under the specified required condition using normal operating procedures within 24 hours.
- * Required conditions when minimum conditions for operation are not satisfied:
 - A. Reactor in Startup, Refuel, or Shutdown Mode.
 - B. Comply with Specification 3.5.D.
 - C. Align HPCI and RCIC suction to the suppression pool. Restore channels to operable status status within 30 days or place the plant in Required Condition A.
 - D. Restore one of the inoperable trip systems or instrument channels within 14 days, or submit a special report to the Commission within the next 30 days outlining the cause of the inoperability and the plans and schedule for restoring the instruments to operable status.

Table 4.2.1 - Continued

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

Ins	trument 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				
SAF	SAFETY/RELIEF VALVE LOW-LOW SET LOGIC							
1. 2. 3. 4. 5.	Reactor Scram Sensing Reactor Pressure - Opening Reactor Pressure - Closing Discharge Pipe Pressure Inhibit Timer	Once/Shutdown (Note 8) Once/3 months (Note 5) Once/3 months (Note 5) Once/3 months (Note 5) Once/3 months (Note 5)	Once/Operating C ycle Once/Operating Cycle See Table 4.14.1 Once/Operating Cycle	Once/day Once/day See Table 4.14.1				
CONTROL ROOM HABITABILITY PROTECTION								
1. 2.	Chlorine Radiation	Monthly (Note 5) Monthly (Note 5)	18 months 18 months	Daily Daily				
REACTOR FEEDWATER PUMP TRIP								
1.	High Reactor Level	Semi-annually	Once/Operating Cycle - Transmitter Once/6 months - Transmitter	Once/Shift				

Bases Continued:

3.2 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 feedwater (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.

The ATWS high reactor pressure and low-low water level logic also initiates the Alternate Rod Injection System. Two solenoid values are installed in the scram air header upstream of the hydraulic control units. Each of the two trip systems energizes a value to vent the header and causes rod insertion. This greatly reduces the long term consequences of an ATWS event.

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Voltage sensing relays are provided on the safeguards bus to transfer the bus to an alternate source when a loss of voltage condition or a degraded voltage condition is sensed. On loss of voltage this transfer occurs immediately. The transfer on degraded voltage has a time delay to prevent transfer during the starting of large loads. The degraded voltage setpoint corresponds to the minimum acceptable safeguards bus voltage for starting and running loads during a loss of coolant accident. An allowance for relay tolerance is included.

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