transient. The low condenser vacuum trip provides a reliable backup to the turbine trip. Thus, if there is a failure of the turbine trip on low vacuum, the reactor would automatically scram at 20 inches Hg. The condenser is capable of receiving bypass steam until 7 inches Hg vacuum thereby mitigating the transient and providing a margin.

The settings to isolate the isolation condenser in the event of a break in the steam or condensate lines are based on the predicted maximum flows that these systems would experience during operation, thus permitting operation while affording protection in the event of a break. The settings correspond to a flow rate of less than three times the normal flow rate of $3.2X10^5$ lb/hr. Upon initiation of the alternate shutdown panel, this function is bypassed to prevent spurious isolation due to fire induced circuit faults.

The setting of ten times the stack release limit for isolation of the air-ejector offgas line is to permit the operator to perform normal, immediate remedial action if the stack limit is exceeded. The time necessary for this action would be extremely short when considering the annual averaging which is allowed under 10CFR 20.106, and, therefore, would produce insignificant effects on doses to the public.

Four radiation monitors are provided which initiate isolation of the reactor building and operation of the standby gas treatment system. Two monitors are located in the ventilation ducts, one is located in the area of the refueling pool and one is located in the reactor vessel head storage area. The trip logic is basically a 1 out of 4 system. Any upscale trip will cause the desired action. Trip settings of 17 mr/hr in the duct and 100 mr/hr on the refueling floor are based upon initiating standby gas treatment system so as not to exceed allowed dose rates of 10 CFR 20 at the nearest site boundary.

The SRM upscale of $5X10^5$ CPS initiates a rod block so that the chamber can be relocated to a lower flux area to maintain SRM capability as power is increased to the IRM range. Full scale reading is 1×10^6 CPS. This rod block is bypassed in IRM Ranges 8 and higher since a level of 5×10^5 CPS is reached and the SRM chamber is at its fully withdrawn position.

The SRM downscale rod block of 100 CPS prevents the instrument chamber from being withdrawn too far from the core during the period that it is required to monitor the neutron flux. This downscale rod block is also bypassed in IRM.

TABLE 3.1.1 PROTECTIVE INSTRUMENTATION REQUIREMENTS (CONT'D)

Function	Trip Setting	Reactor Modes in which Function Must Be Operable: Shutdown	Refuel	Startup	Run	Min. No. of Operable or Operating [tripped] Trip Systems	Min. No. of Instrument Channels Per Operable Trip Systems	Action Required*
A. Scram								
1. Manual Scram		X	X	X	X	2	1	Insert control rods
2. High Reactor Pressure	**		X(s)	X(ll)	X	2	2	
3. High Drywell Pressure	≤ 3.5 psig		X(u)	X(u)	X	2	2	
4. Low Reactor Water Level	**		X	X	X	2	2	
5. a. High Water Level in Scram Discharge Volume North Side	≤ 29 gal.		X(a)	X(z)	X(z)	2	2	
b. High Water Level in Scram Discharge Volume South Side	≤ 29 gal.		X(a)	X(z)	X(z)	2	2	
6. Low Condenser Vacuum	≥ 20 inches hg.			X(b)	X		3(mm)	
7. DELETED								

TABLE 3.1.1 PROTECTIVE INSTRUMENTATION REQUIREMENTS (CONT'D)

Function	Trip Setting	Reactor Modes in which Function Must Be Operable: Shutdown	Refuel	Startup	Run	Min. No. of Operable or Operating [tripped] Trip Systems	Min. No. of Instrument Channels Per Operable Trip Systems	Action Required*
4. High Temperature in Main Steamline Tunnel	≤ Ambient at Power + 50°F	X(s)	X(s)	X	X	2	2	
5. Low Pressure in Main Steamline	**			X(cc)	X	2	2	
6. DELETED								
C. Isolation condenser								
1. High Reactor Pressure	**	X(s)	X(s)	X(11)	X	2	2	Place plant in cold shutdown condition
2. Low-Low Reactor Water	≥7'2" above top of active fuel	X(s)	X(s)	X	X	2	2	

TABLE 3.1.1 PROTECTIVE INSTRUMENTATION REQUIREMENTS (CONT'D)

Function	Trip Setting	Reactor Modes in which Function Must Be Operable: Shutdown	Refuel	Startup	Run	Min. No. of Operable or Operating [tripped] Trip Systems	Min. No. of Instrument Channels Per Operable Trip Systems	Action Required*
6. IRM Upscale	≤ 108/125 fullscale		X	X		2	3	
7. a) water level high scram discharge volume North	≤ 14 gallons		X(z)	X(z)	X(z)	1	1 per inst. vol.	
b) water level high scram discharge volume South	≤ 14 gallons		X(z)	X(z)	X(z)	1	1 per inst. vol.	
L. Condenser Vacuum Pump Isolation								
DELETED								
M. Diesel Generator load Sequence Timers	Time delay after energization of relay							
1. CRD pump	60 sec ± 15%	X	X	X	X	2(m)	1(n)	Consider the pump inoperable and comply with Spec. 3.4.D (see Note q)

TABLE 4.1.1
(cont'd)

Instrument Channel	Check	Calibrate	Test	Remarks (Applies to Test and Calibration)
11. APRM Level	N/A	1/3d	N/A	Output adjustment using operational type heat balance during power operation
APRM Scram Trips	Note 2	1/wk.	1/wk.	Using built-in calibration equipment during power operation
12. APRM Rod Blocks	Note 2	1/3 mo.	1/mo.	Upscale and downscale
13. DELETED				
14. High Radiation in Reactor Building				
Operating Floor	1/s	1/3 mo.	1/wk	Using gamma source for calibration
Ventilation Exhaust	1/s	1/3 mo.	1/wk.	Using gamma source for calibration
15. High Radiation on Air Ejector		1/3 mo.	1/wk.	Using built-in calibration equipment
Ejector Off-Gas	1/s 1 mo.			Channel check Source check
		1/24 mo.		Calibration according to established station calibration procedures
			1/24 mo.	Note a
16. IRM Level	N/A	Each startup	N/A	
IRM Scram	*	*	*	Using built-in calibration equipment