PNPS TABLE 4.1.1
REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION FUNCTIONAL TESTS
MINIMUM FUNCTIONAL TEST FREQUENCIES FOR SAFETY INSTRUMENTATION AND CONTROL CIRCUITS

	Functional Test	Minimum Frequency (3)
Mode Switch in Shutdown	Place Mode Switch in Shutdown	Each Refueling Outage
Manual Scram	Trip Channel and Alarm	Every 3 Months
RPS Channel Test Switch (5)	Trip Channel and Alarm	Once per week
IRM		
High Flux	Trip Channel and Alarm (4)	Once Per Week During Refueling and Before Each Startup
Inoperative	Trip Channel and Alarm	Once Per Week During Refueling and Before Each Startup
APRM		
High Flux	Trip Output Relays (4)	Every 3 Months
Inoperative	Trip Output Relays (4)	Every 3 Months
Flow Bias	Trip Output Relays (4)	Every 3 Months
High Flux (15%)	Trip Output Relays (4)	Once Per Week During Refueling and Before Each Startup
High Reactor Pressure	Trip Channel and Alarm (4)	Every 3 Months
High Drywell Pressure	Trip Channel and Alarm (4)	Every 3 Months
Reactor Low Water Level	Trip Channel and Alarm (4)	Every 3 Months
High Water Level in Scram Discharge Tanks	Trip Channel and Alarm (4)	Every 3 Months
Main Steam Line Isolation Valve Closure	Trip Channel and Alarm	Every 3 Months
Turbine Control Valve Fast Closure	Trip Channel and Alarm	Every 3 Months
Turbine First Stage Pressure Permissive	Trip Channel and Alarm (4)	Every 3 Months
Turbine Stop Valve Closure	Trip Channel and Alarm	Every 3 Months
Reactor Pressure Permissive	Trip Channel and Alarm (4)	Every 3 Months

NOTES FOR TABLE 4.1.1

1. Deleted

2. Deleted

3. Functional tests 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. This instrumentation is exempted from the instrument channel test definition. This instrument channel functional test will consist of injecting a simulated electrical signal into the measurement channels.

5. Test RPS channel after maintenance.

PNPS TABLE 4.1.2
REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT CALIBRATION
MINIMUM CALIBRATION FREQUENCIES FOR REACTOR PROTECTION INSTRUMENT CHANNELS

Instrument Channel	Calibration Test (5)	Minimum Frequency (2)
IRM High Flux	Comparison to APRM on Controlled Shutdowns	Note (4)
	Full Calibration	Once per Operating Cycle
APRM High Flux		
Output Signal	Heat Balance (8)	Once every 3 Days
Flow Bias Signal	Calibrate Flow Comparator and Flow Bias Network	At least once every 18 Months
	Calibrate Flow Bias Signal (1)	Every 3 Months
LPRM Signal	TIP System Traverse	Every 1000 Effective Full Power Hours
High Reactor Pressure	Note (7)	Note (7)
High Drywell Pressure	Note (7)	Note (7)
Reactor Low Water Level	Note (7)	Note (7)
High Water Level in Scram Discharge Tanks	Note (7)	Note (7)
Main Steam Line Isolation Valve Closure	Note (6)	Note (6)
Turbine First Stage Pressure Permissive	Note (7)	Note (7)
Turbine Control Valve Fast Closure	Standard Pressure Source	Every 3 Months
Turbine Stop Valve Closure	Note (6)	Note (6)
Reactor Pressure Permissive	Note (7)	Note (7)

NOTES FOR TABLE 4.1.2

1. Adjust the flow bias trip reference, as necessary, to conform to a calibrated flow signal.
2. Calibration tests are not required when the systems are not required to be operable or are tripped.
3. Deleted.
4. Maximum frequency required is once per week.
5. Response time is not a part of the routine instrument channel test, but will be checked once per operating cycle.
6. Physical inspection and actuation of these position switches will be performed during the refueling outages.
7. Calibration of these devices will be performed during refueling outages.

   To verify transmitter output, a daily instrument check will be performed. Calibration of the associated analog trip units will be performed concurrent with functional testing as specified in Table 4.1.1.

8. Not required to be performed until 12 hours after thermal power is $\geq$ 25% rated thermal power.

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TABLE 4.2.D

MINIMUM TEST AND CALIBRATION FREQUENCY FOR RADIATION MONITORING SYSTEMS

	Instrument Channels	Instrument Functional Test	Calibration	Instrument Check
1)	Refuel Area Exhaust Monitors - Upscale	(1)	Once/3 months	Once/day
2)	Refuel Area Exhaust Monitors - Downscale	(1)	Once/3 months	Once/day

Logic System Functional Test (4) (6)		Frequency
1)	Reactor Building Isolation	Once/Operating Cycle
2)	Standby Gas Treatment System Actuation	Once/Operating Cycle

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TABLE 4.2.G

MINIMUM TEST AND CALIBRATION FREQUENCY FOR
ATWS RPT/ARI INSTRUMENTATION

Instrument Channel	Instrument Functional Test	Calibration	Instrument Check
1. Reactor High Pressure	(1) (7)	(7)	Once/day
2. Reactor Low-Low Water Level	(1) (7)	(7)	Once/day

NOTES FOR TABLES 4.2.A THROUGH 4.2.G

1. Initially once per month until exposure hours (M as defined on Figure 4.2-1) is 2.0×10^5; thereafter, according to Figure 4.2-1 with an interval not less than one month nor more than three months.

2. Calibrations of IRMs and SRMs shall be performed during each startup or during controlled shutdowns with a required frequency not to exceed once per week.

3. Deleted.

4. Simulated automatic actuation shall be performed once each operating cycle. Where possible, all logic system functional tests will be performed using the test jacks.

5. Reactor low water level and high drywell pressure are not included on Table 4.2.A since they are tested on Tables 4.1.1 and 4.1.2.

6. The logic system functional tests shall include a calibration of time delay relays and timers necessary for proper functioning of the trip systems.

7. Calibration of analog trip units will be performed concurrent with functional testing. The functional test will consist of injecting a simulated electrical signal into the measurement channel. Calibration of associated analog transmitters will be performed each refueling outage.