

VYNPS

TABLE 3.1.1
(Cont'd)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT REQUIREMENTS

<u>Trip Function</u>	<u>Trip Settings And Allowable Deviations</u>	<u>Modes in Which Functions Must be Operating</u>			<u>Minimum Number Operating Instrument Channels Per Trip System (2)</u>	<u>Required ACTIONS When Minimum Conditions For Operation Are Not Satisfied (3)</u>
		<u>Refuel (1)</u>	<u>Startup</u>	<u>Run</u>		
9. Deleted						
10. Main steamline isolation valve closure (POS-2-80A-A1, B1 POS-2-86A-A1, B1 POS-2-80B-A1, B2 POS-2-86B-A1, B2 POS-2-80C-A2, B1 POS-2-86C-A2, B1 POS-2-80D-A2, B2 POS-2-86D-A2, B2)	<10% valve closure			X	4	A or C
11. Turbine control valve fast closure (PS-(37-40))	(9) (10)			X	2	A or D
12. Turbine stop valve closure (SVOS-5-(1-4))	<10% valve (10) closure			X	2	A or D

TABLE 3.1.1 NOTES (Cont'd)

3. When the requirements in the column "Minimum Number of Operating Instrument Channels Per Trip System" cannot be met for one system, that system shall be tripped. If the requirements cannot be met for both trip systems, the appropriate ACTIONS listed below shall be taken:
 - a) Initiate insertion of operable rods and complete insertion of all operable rods within four hours.
 - b) Reduce power level to IRM range and place mode switch in the "Startup/Hot Standby" position within eight hours.
 - c) Reduce turbine load and close main steam line isolation valves within 8 hours.
 - d) Reduce reactor power to less than 30% of rated within 8 hours.
4. "W" is percent rated two loop drive flow where 100% rated drive flow is that flow equivalent to 48×10^6 lbs/hr core flow. ΔW is the difference between the two loop and single loop drive flow at the same core flow. This difference must be accounted for during single loop operation. $\Delta W = 0$ for two recirculation loop operation.
5. To be considered operable an APRM must have at least 2 LPRM inputs per level and at least a total of 13 LPRM inputs, except that channels A, C, D, and F may lose all LPRM inputs from the companion APRM Cabinet plus one additional LPRM input and still be considered operable.
6. The top of the enriched fuel has been designated as 0 inches and provides common reference level for all vessel water level instrumentation.
7. Deleted.
8. Deleted.
9. Channel signals for the turbine control valve fast closure trip shall be derived from the same event or events which cause the control valve fast closure.
10. Turbine stop valve closure and turbine control valve fast closure scram signals may be bypassed at $\leq 30\%$ of reactor Rated Thermal Power.
11. Not used.
12. While performing refuel interlock checks which require the mode switch to be in Startup, the reduced APRM high flux scram need not be operable provided:
 - a. The following trip functions are operable:
 1. Mode switch in shutdown,
 2. Manual scram,
 3. High flux IRM scram
 4. High flux SRM scram in noncoincidence,
 5. Scram discharge volume high water level, and;
 - b. No more than two (2) control rods withdrawn. The two (2) control rods that can be withdrawn cannot be face adjacent or diagonally adjacent.

VYNPS

TABLE 4.1.1

SCRAM INSTRUMENTATION AND LOGIC SYSTEMS FUNCTIONAL TESTS

MINIMUM FUNCTIONAL TEST FREQUENCIES FOR SAFETY INSTRUMENTATION, LOGIC SYSTEMS AND CONTROL CIRCUITS

<u>Instrument Channel</u>	<u>Group</u> ⁽³⁾	<u>Functional Test</u> ⁽⁷⁾	<u>Minimum Frequency</u> ⁽⁴⁾
Mode Switch in Shutdown	A	Place Mode Switch in Shutdown	Each Refueling Outage
Manual Scram	A	Trip Channel and Alarm	Every 3 Months
IRM			
High Flux	C	Trip Channel and Alarm ⁽⁵⁾	Before Each Startup & Weekly During Refueling ⁽⁶⁾
Inoperative	C	Trip Channel and Alarm	Before Each Startup & Weekly During Refueling ⁽⁶⁾
APRM			
High Flux	B	Trip Output Relays ⁽⁵⁾	Every 3 Months
High Flux (Reduced)	B	Trip Output Relays ⁽⁵⁾	Before Each Startup & Weekly During Refueling ⁽⁶⁾
Inoperative	B	Trip Output Relays	Every 3 Months
Flow Bias	B	Trip Output Relays ⁽⁵⁾	Every 3 Months
High Reactor Pressure	B	Trip Channel and Alarm ⁽⁵⁾	Every 3 Months
High Drywell Pressure	B	Trip Channel and Alarm ⁽⁵⁾	Every 3 Months
Low Reactor Water Level ^{(2) (8)}	B	Trip Channel and Alarm ⁽⁵⁾	Every 3 Months
High Water Level in Scram Discharge Volume	B	Trip Channel and Alarm ⁽⁵⁾	Every 3 Months
Main Steam Line Iso. Valve Closure	A	Trip Channel and Alarm	Every 3 Months
Turbine Con. Valve Fast Closure	A	Trip Channel and Alarm	Every 3 Months
Turbine Stop Valve Closure	A	Trip Channel and Alarm	Every 3 Months
Scram Test Switch (5A-S2(A-D))	A	Trip Channel and Alarm	Once each week ⁽⁹⁾
First Stage Turbine Pressure - Permissive (PS-5-14(A-D))	A	Trip Channel and Alarm	Every 6 Months

TABLE 4.1.1 NOTES

1. Not used
2. An instrument check shall be performed on reactor water level and reactor pressure instrumentation once per day.
3. A description of the three groups is included in the basis of this Specification.
4. 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.
5. This instrumentation is exempted from the Instrument Functional Test Definition (I.G.). This Instrument Functional Test will consist of injecting a simulated electrical signal into the measurement channels.
6. Frequency need not exceed weekly.
7. A functional test of the logic of each channel is performed as indicated. This coupled with placing the mode switch in shutdown each refueling outage constitutes a logic system functional test of the scram system.
8. The water level in the reactor vessel will be perturbed and the corresponding level indicator changes will be monitored. This test will be performed every month.
9. The automatic scram contactors shall be exercised once every week by either using the RPS channel test switches or performing a functional test of any automatic scram function. If the contactors are exercised using a functional test of a scram function, the weekly test using the RPS channel test switch is considered satisfied. The automatic scram contactors shall also be exercised after maintenance on the contactor..

VYNPS

TABLE 4.1.2

SCRAM INSTRUMENT CALIBRATION

MINIMUM CALIBRATION FREQUENCIES FOR REACTOR PROTECTION INSTRUMENT CHANNELS

<u>Instrument Channel</u>	<u>Group</u> ⁽¹⁾	<u>Calibration Standard</u> ⁽⁴⁾	<u>Minimum Frequency</u> ⁽²⁾
High Flux APRM			
Output Signal	B	Heat Balance	Once Every 7 Days
Output Signal (Reduced) (7)	B	Heat Balance	Once Every 7 Days
Flow Bias	B	Standard Pressure and Voltage Source	Refueling Outage
LPRM (LPRM ND-2-1-104(80))	B(5)	Using TIP System	Every 2,000 MWD/T average core exposure (8)
High Reactor Pressure	B	Standard Pressure Source	Once/Operating Cycle
Turbine Control Valve Fast Closure	A	Standard Pressure Source	Every 3 Months
High Drywell Pressure	B	Standard Pressure Source	Once/Operating Cycle
High Water Level in Scram Discharge Volume	B	Water Level	Once/Operating Cycle
Low Reactor Water Level	B	Standard Pressure Source	Once/Operating Cycle
Turbine Stop Valve Closure	A	(6)	Refueling Outage
First Stage Turbine Pressure Permissive (PS-5-14(A-D))	A	Pressure Source	Every 6 Months and After Refueling
Main Steam Line Isolation Valve Closure	A	(6)	Refueling Outage

TABLE 4.1 2 NOTES

1. A description of the three groups is included in the bases of this Specification.
2. Calibration 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.
3. Deleted.
4. Response time is not part of the routine instrument check and calibration, but will be checked every operating cycle.
5. Does not provide scram function.
6. Physical inspection and actuation.
7. The IRM and SRM channels shall be determined to overlap during each startup after entering the STARTUP/HOT STANDBY MODE and the IRM and APRM channels shall be determined to overlap during each controlled shutdown, if not performed within the previous 7 days.
8. The specified frequency is met if the calibration is performed within 1.25 times the interval specified, as measured from the previous performance.

BASES: 3.1 (Cont'd)

The main steam line isolation valve closure scram is set to scram when the isolation valves are 10 percent closed from full open in 3-out-of-4 lines. This scram anticipates the pressure and flux transient, which would occur when the valves close. By scrambling at this setting, the resultant transient is insignificant.

A reactor mode switch is provided which actuates or bypasses the various scram functions appropriate to the particular plant operating status.

The manual scram function is active in all modes, thus providing for manual means of rapidly inserting control rods during all modes of reactor operation.

The IRM system provides protection against short reactor periods and, in conjunction with the reduced APRM system provides protection against excessive power levels in the startup and intermediate power ranges. A source range monitor (SRM) system is also provided to supply additional neutron level information during startup and can provide scram function with selected shorting links removed during refueling. Thus, the IRM and the reduced APRM are normally required in the startup mode and may be required in the refuel mode. During some refueling activities which require the mode switch in startup; it is allowable to disconnect the LPRMs to protect them from damage during under vessel work. In lieu of the protection provided by the reduced APRM scram, both the IRM scram and the SRM scram in noncoincidence are used to provide neutron monitoring protection against excessive power levels. In the power range, the normal APRM system provides required protection. Thus, the IRM system and 15% APRM scram are not required in the run mode.

If an unsafe failure is detected during surveillance testing, it is desirable to determine as soon as possible if other failures of a similar type have occurred and whether the particular function involved is still operable or capable of meeting the single failure criteria. To meet the requirements of Table 3.1.1, it is necessary that all instrument channels in one trip system be operable to permit testing in the other trip system.

Thus, when failures are detected in the first trip system tested, they would have to be repaired before testing of the other system could begin. In the majority of cases, repairs or replacement can be accomplished quickly. If repair or replacement cannot be completed in a reasonable time, operation could continue with one tripped system until the surveillance testing deadline.

3.2 LIMITING CONDITIONS FOR OPERATION

D. Off-Gas System Isolation

During reactor power operation, the instrumentation that initiates isolation of the off-gas system shall be operable in accordance with Table 3.2.4.

E. Control Rod Block Actuation

During reactor power operation the instrumentation that initiates control rod block shall be operable in accordance with Table 3.2.5.

F. Mechanical Vacuum Pump Isolation Instrumentation

When the reactor is in the RUN or STARTUP/HOT STANDBY Mode and the mechanical vacuum pump is in service, four (4) channels of the High Main Steam Line Radiation Trip Function for mechanical vacuum pump isolation shall be operable, except as provided below.

1. With one or more channels inoperable, within 12 hours:
 - a. Restore the inoperable channel(s) to operable status; or
 - b. Place the inoperable channel(s) or associated trip system in the trip condition (not applicable if the inoperable channel is the result of an inoperable mechanical vacuum pump isolation valve).

4 2 SURVEILLANCE REQUIREMENTS

D. Off-Gas System Isolation

Instrumentation and logic systems shall be functionally tested and calibrated as indicated in Table 4.2.4.

E. Control Rod Block Actuation

Instrumentation and logic systems shall be functionally tested and calibrated as indicated in Table 4.2.5.

F. Mechanical Vacuum Pump Isolation Instrumentation

The High Main Steam Line Radiation Trip Function for mechanical vacuum pump isolation shall be checked, functionally tested and calibrated as indicated in Surveillance Requirements 4.2.F.1, 2, 3, 4 and 5.

When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions for Operation and required actions may be delayed for up to six (6) hours provided the associated trip function maintains mechanical vacuum pump isolation capability.

1. Perform an instrument check once each day.
2. Perform an instrument functional test once every three (3) months.

3.2 LIMITING CONDITIONS FOR OPERATION

2. If the required action and associated completion time of Specification 3.2.F.1 is not met, within the following 12 hours:
 - a. Isolate the mechanical vacuum pump; or
 - b. Isolate the main steam lines; or
 - c. Place the reactor in the SHUTDOWN Mode.

G. Post-Accident Instrumentation

During reactor power operation, the instrumentation that displays information in the Control Room necessary for the operator to initiate and control the systems used during and following a postulated accident or abnormal operating condition shall be operable in accordance with Table 3.2.6.

H. Drywell to Torus ΔP Instrumentation

1. During reactor power operation, the Drywell to Torus ΔP Instrumentation (recorder #1-156-3 and instrument DPI-1-158-6) shall be operable except as specified in 3.2.H.2.
2. From and after the date that one of the Drywell to Torus ΔP instruments is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding thirty days unless the instrument is

4.2 SURVEILLANCE REQUIREMENTS

3. Perform an instrument calibration, except for the radiation detectors, using a current source once every three (3) months. The trip setting shall be ≤ 3.0 times background at rated thermal power.
4. Perform an instrument calibration using a radiation source once each refueling outage.
5. Perform a logic system functional test, including mechanical vacuum pump isolation valve, once each operating cycle.

G. Post-Accident Instrumentation

The post-accident instrumentation shall be functionally tested and calibrated in accordance with Table 4.2.6.

H. Drywell to Torus ΔP Instrumentation

The Drywell to Torus ΔP Instrumentation shall be calibrated once every six months and an instrument check will be made once per shift.

3 2 LIMITING CONDITIONS FOR OPERATION

sooner made operable. If both instruments are made or found to be inoperable, and indication cannot be restored within a six hour period, an orderly shutdown shall be initiated and the reactor shall be in a hot shutdown condition in six hours and a cold shutdown condition in the following eighteen hours.

I. Recirculation Pump Trip Instrumentation

During reactor power operation, the Recirculation Pump Trip Instrumentation shall be operable in accordance with Table 3.2.1.

J. Deleted

K. Degraded Grid Protective System

During reactor power operation, the emergency bus undervoltage instrumentation shall be operable in accordance with Table 3.2.8.

L. Reactor Core Isolation Cooling System Actuation

When the Reactor Core Isolation Cooling System is required in accordance with Specification 3.5.G, the instrumentation which initiates actuation of this system shall be operable in accordance with Table 3.2.9.

4.2 SURVEILLANCE REQUIREMENTS

I. Recirculation Pump Trip Instrumentation

The Recirculation Pump Trip Instrumentation shall be functionally tested and calibrated in accordance with Table 4.2.1.

J. Deleted

K. Degraded Grid Protective System

The emergency bus undervoltage instrumentation shall be functionally tested and calibrated in accordance with Table 4.2.8.

L. Reactor Core Isolation Cooling System Actuation

Instrumentation and Logic Systems shall be functionally tested and calibrated as indicated in Table 4.2.9.

VYNPS

TABLE 3.2.2

PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION

<u>Minimum Number of Operable Instrument Channels per Trip System</u>	<u>Trip Function</u>	<u>Trip Setting</u>	<u>Required ACTION When Minimum Conditions For Operation Are Not Satisfied (Note 2)</u>
2 (Notes 11,12)	Low-Low Reactor Vessel Water Level (LT-2-3-57A/B(S2), LT-2-3-58A/B(S2))	≥ 82.5 " above the top of enriched fuel	A
2 of 4 in each of 2 channels (Notes 11,12)	High Main Steam Line Area Temperature (TS-2-(121-124)(A-D))	$\leq 212^\circ\text{F}$	B
2/steam line (Notes 11,12)	High Main Steam Line Flow (DPT-2-(116-119)(A-D)(M))	$\leq 140\%$ of rated flow	B
2 (Notes 1,11,12)	Low Main Steam Line Pressure (PS-2-134(A-D))	≥ 800 psig	B
2 (Notes 6,11,12)	High Main Steam Line Flow (DPT-2-116A,117B, 118C,119D(S1))	$\leq 40\%$ of rated flow	B
2 (Notes 11,12)	Low Reactor Vessel Water Level (LT-2-3-57A/B(M), LT-2-3-58A/B(M))	Same as Reactor Protection System	A
2 (Notes 11,12)	High Drywell Pressure	Same as Reactor Protection System	A
2 (Notes 10,11,12)	Condenser Low Vacuum	≤ 12 " Hg absolute	A
1	Trip System Logic	--	A

TABLE 3.2.2 NOTES

1. The main steam line low pressure need be available only in the "Run" mode.
2. If the minimum number of operable instrument channels are not available for one trip system, that trip system shall be tripped. If the minimum number of operable instrument channels are not available for both trip systems, the appropriate actions listed below shall be taken:
 - A. Initiate an orderly shutdown and have reactor in the cold shutdown condition in 24 hours.
 - B. Initiate an orderly load reduction and have reactor in "Hot Standby" within 8 hours.
3. Close isolation valves in system and comply with Specification 3.5.
4. Deleted.
5. One trip system arranged in a one-out-of-two twice logic.
6. The main steam line high flow is available only in the "Refuel," "Shutdown," and "Startup" modes.
7. Deleted.
8. Deleted.
9. Deleted.
10. A key lock switch is provided to permit the bypass of this trip function to enable plant startup and shutdown when the condenser vacuum is greater than 12 inches Hg absolute provided that both turbine stop and bypass valves are closed.
11. When a channel, and/or the affected primary containment isolation valve, is placed in an inoperable status solely for performance of required instrumentation surveillances, entry into associated Limiting Conditions for Operation and required ACTIONS may be delayed for up to 6 hours provided the associated Trip Function maintains isolation capability.
12. Whenever Primary Containment integrity is required by Specification 3.7.A.2, there shall be two operable or tripped trip systems for each Trip Function, except as provided for below:
 - A. With one or more automatic functions with isolation capability not maintained restore isolation capability in 1 hour or take the ACTION required by Table 3.2.2.
 - B. With one or more channels inoperable, place the inoperable channels (s) in the tripped condition within:
 - 1) 12 hours for trip functions common to RPS instrumentation, and
 - 2) 24 hours for trip functions not common to RPS instrumentation,
 or, initiate the ACTION required by Table 3.2.2.

VYNPS

TABLE 4.2.2

MINIMUM TEST AND CALIBRATION FREQUENCIES
PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION

<u>Trip Function</u>	<u>Functional Test (8)</u>	<u>Calibration (8)</u>	<u>Instrument Check</u>
Low-Low Reactor Vessel Water Level	Every Three Months	Once/Operating Cycle	Once Each Day
High Steam Line Area Temperature	Every Three Months	Each Refueling Outage	--
High Steam Line Flow	Every Three Months	Once/Operating Cycle	Once Each Day
Low Main Steam Line Pressure	Every Three Months	Every Three Months	--
Low Reactor Vessel Water Level	Every Three Months	Once/Operating Cycle	--
High Drywell Pressure	Every Three Months	Once/Operating Cycle	Once Each Day
Condenser Low Vacuum	Every Three Months	Every Three Months	--
Trip System Logic	Once/Operating Cycle (Note 2)	Once/Operating Cycle (Note 3)	--

TABLE 4.2 NOTES

1. Not used.
2. During each refueling outage, simulated automatic actuation which opens all pilot valves shall be performed such that each trip system logic can be verified independent of its redundant counterpart.
3. Trip system logic calibration shall include only time delay relays and timers necessary for proper functioning of the trip system.
4. This instrumentation is excepted from functional test definition. The functional test will consist of injecting a simulated electrical signal into the measurement channel.
5. Deleted.
6. Deleted.
7. Deleted.
8. Functional tests and calibrations are not required when systems are not required to be operable.
9. The thermocouples associated with safety/relief valves and safety valve position, that may be used for back-up position indication, shall be verified to be operable every operating cycle.
10. Separate functional tests are not required for this instrumentation. The calibration and integrated ECCS tests which are performed once per operating cycle will adequately demonstrate proper equipment operation.
11. Trip system logic functional tests will include verification of operation of all automatic initiation inhibit switches by monitoring relay contact movement. Verification that the manual inhibit switches prevent opening all relief valves will be accomplished in conjunction with Section 4.5.F.1.
12. Trip system logic testing is not applicable to this function. If the required surveillance frequency (every Refueling Outage) is not met, functional testing of the Reactor Mode Switch-Shutdown Position function shall be initiated within 1 hour after the reactor mode switch is placed in Shutdown for the purpose of commencing a scheduled Refueling Outage.
13. Includes calibration of the RBM Reference Downscale function (i.e., RBM upscale function is not bypassed when >30% Rated Thermal Power).

BASES: 3.2 (Cont'd)

For the complete circumferential break of 28-inch recirculation line and with the trip setting given above, ECCS initiation and primary system isolation are initiated in time to meet the above criteria. The instrumentation also covers the full range of spectrum breaks and meets the above criteria.

The high drywell pressure instrumentation is a backup to the water level instrumentation, and in addition to initiating ECCS, it causes isolation of Group 2, 3, and 4 isolation valves. For the complete circumferential break discussed above, this instrumentation will initiate ECCS operation at about the same time as the low-low water level instrumentation, thus, the results given above are applicable here also. Certain isolation valves including the TIP blocking valves, CAD inlet and outlet, drywell vent, purge and sump valves are isolated on high drywell pressure. However, since high drywell pressure could occur as the result of non-safety-related causes, such as not venting the drywell during startup, complete system isolation is not desirable for these conditions and only certain valves are required to close. The water level instrumentation initiates protection for the full spectrum of loss of coolant accidents and causes a trip of certain primary system isolation valves.

Venturis are provided in the main steam lines as a means of measuring steam flow and also limiting the loss of mass inventory from the vessel during a steam line break accident. In addition to monitoring steam flow, instrumentation is provided which causes a trip of Group 1 isolation valves. The primary function of the instrumentation is to detect a break in the main steam line, thus only Group 1 valves are closed. For the worst case accident, main steam line break outside the drywell, this trip setting of 140 percent of rated steam flow in conjunction with the flow limiters and main steam line valve closure limit the mass inventory loss such that fuel is not uncovered, cladding temperatures remain less than 1295°F and release of radioactivity to the environs is well below 10CFR100.

Temperature monitoring instrumentation is provided in the main steam line tunnel to detect leaks in this area. Trips are provided on this instrumentation and when exceeded cause closure of Group 1 isolation valves. Its setting of ambient plus 95°F is low enough to detect leaks of the order of 5 to 10 gpm; thus, it is capable of covering the entire spectrum of breaks. For large breaks, it is a backup to high steam flow instrumentation discussed above, and for small breaks, with the resultant small release of radioactivity, gives isolation before the limits of 10CFR100 are exceeded.

Isolation of the condenser mechanical vacuum pump (MVP) is assumed in the safety analysis for the control rod drop accident (CRDA). The MVP isolation instrumentation initiates closure of the MVP suction isolation valve following events in which main steam line radiation monitors exceed a predetermined value. A High Main Steam Line Radiation Monitor trip setting for MVP isolation of ≤ 3 times background at rated thermal power (RTP) is as low as practicable without consideration of spurious trips from nitrogen-16 spikes, instrument instabilities and other operational occurrences. Isolating the condenser MVP limits the release of fission products in the event of a CRDA.

Pressure instrumentation is provided which trips when main steam line pressure drops below 800 psig. A trip of this instrumentation results in closure of Group 1 isolation valves. In the refuel, shutdown, and startup modes, this trip function is provided when main steam line flow exceeds 40% of rated capacity. This function is provided primarily to provide protection against a pressure regulator malfunction which would cause the

BASES: 3.2 (Cont'd)

Specification 3.2.G requires that the post-accident monitoring (PAM) instrumentation of Table 3.2.6 be operable during reactor power operation. PAM instrumentation is not required to be operable during shutdown and refueling conditions when the likelihood of an event that would require PAM instrumentation is extremely low. The primary purpose of the PAM instrumentation is to display plant variables that provide information required by the control room operators during accident situations. This information provides the necessary support for the operator to take the manual actions for which no automatic control is provided and that are required for safety systems to accomplish their safety functions for design basis accidents. The operability of the PAM instrumentation ensures that there is sufficient information available on selected plant parameters to monitor and assess plant status and behavior following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light Water Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident."

In most cases, Table 3.2.6 requires a minimum of two operable channels to ensure that the operators are provided the information necessary to determine the status of the plant and to bring the plant to, and maintain it in, a safe condition following an accident. For the majority of parameters monitored, when one of the required channels is inoperable, the required inoperable channel must be restored to operable status within 30 days. The 30-day completion time is based on operating experience and takes into account the remaining operable channel (or in the case of a parameter that has only one required channel, an alternate means to monitor the parameter), the passive nature of the instrument (no critical automatic action is assumed to occur from these instruments), and the low probability of an event requiring PAM instrumentation during this interval.

If a PAM instrument channel has not been restored to an operable status within the specified interval, the required action is to prepare a written report to be submitted to the NRC within the following 14 days. When a special written report is required in accordance with the provisions of Table 3.2.6, the report will outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation to an operable status. This action is appropriate in lieu of a shutdown requirement, since alternative actions are identified before loss of functional capability, and given the likelihood of plant conditions that would require information provided by this instrumentation.

For the majority of PAM instrumentation, when two required channels are inoperable (or in the case of a parameter that is monitored by only one channel, the channel and an alternate means are inoperable), one channel (or the required alternate means) should be restored to an operable status within seven days. The completion time of seven days is based on the relatively low probability of an event requiring PAM instrumentation and the normal availability of alternate means to obtain the required information. Where specified, continuous operation with two required channels inoperable (or one channel and the required alternate means inoperable) is not acceptable after seven days. Therefore, restoration of one inoperable channel limits the risk that the PAM function will be in a degraded condition should an accident occur.