3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.15 RCS Leakage Detection Instrumentation

LCO 3.4.15 The following RCS leakage detection instrumentation shall be OPERABLE:

a. One containment sump (level or discharge flow) monitor,

b. One containment atmosphere radioactivity monitor (gaseous or particulate), and

[c. One containment air cooler condensate flow rate monitor.]

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Required containment sump monitor inoperable.	A.1	----------NOTE---------- Not required until 12 hours after establishment of steady state operation. ----------	
		Perform SR 3.4.13.1.	Once per 24 hours
	AND		
	A.2	Restore required containment sump monitor to OPERABLE status.	30 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required containment atmosphere radioactivity monitor inoperable.	B.1.1 Analyze grab samples of the containment atmosphere. OR B.1.2 ----------NOTE---------- Not required until 12 hours after establishment of steady state operation. ---------- Perform SR 3.4.13.1. [AND B.2.1 Restore required containment atmosphere radioactivity monitor to OPERABLE status. OR B.2.2 Verify containment air cooler condensate flow rate monitor is OPERABLE.	Once per 24 hours Once per 24 hours 30 days 30 days]
C. [Required containment air cooler condensate flow rate monitor inoperable.	C.1 Perform SR 3.4.15.1. OR C.2 ----------NOTE---------- Not required until 12 hours after establishment of steady state operation. ---------- Perform SR 3.4.13.1.	Once per 8 hours Once per 24 hours]

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Containment sump monitor inoperable. AND Containment air cooler condensate flow rate monitor inoperable. AND Containment atmospheric particulate monitoring system inoperable.	D.1 Restore containment sump monitor to OPERABLE status. OR D.2 Restore containment air cooler condensate flow rate monitor to OPERABLE status. OR D.3 Restore containment atmospheric particulate monitoring system	7 days 7 days 7 days
~~D~~E. [Required containment atmosphere radioactivity monitor inoperable. AND Required containment air cooler condensate flow rate monitor inoperable.	~~D~~E.1 Restore required containment atmosphere radioactivity monitor to OPERABLE status. OR ~~D~~E.2 Restore required containment air cooler condensate flow rate monitor to OPERABLE status.	30 days 30 days]
F. Containment sump monitor inoperable AND Required containment atmospheric monitoring system inoperable.	F.1 Restore containment sump monitor to OPERABLE status. OR F.2 Restore containment atmospheric monitoring system inoperable to OPERABLE status.	30 days 30 days]
~~E~~G. Required Action and associated Completion	~~E~~G.1 Be in MODE 3.	6 hours

Comment [BDM1]: Only containment gaseous monitor OPERABLE.

Comment [BDM2]: Only containment sump monitor OPERABLE.

Comment [BDM3]: Only the containment air cooler condensate flow rate monitor is OPERABLE.

Time not met.	AND ~~E~~G.2	Be in MODE 5.	36 hours
~~F~~H. All required monitors inoperable.	~~F~~H.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.15.1	Perform CHANNEL CHECK of the required containment atmosphere radioactivity monitor.	12 hours
SR 3.4.15.2	Perform COT of the required containment atmosphere radioactivity monitor.	92 days
SR 3.4.15.3	Perform CHANNEL CALIBRATION of the required containment sump monitor.	[18] months

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.15 RCS Leakage Detection Instrumentation

BASES

BACKGROUND

GDC 30 of Appendix A to 10 CFR 50 (Ref. 1) requires means for detecting and, to the extent practical, identifying the location of the source of RCS LEAKAGE. Regulatory Guide 1.45 (Ref. 2) describes acceptable methods for selecting leakage detection systems.

Leakage detection systems must have the capability to detect significant reactor coolant pressure boundary (RCPB) degradation as soon after occurrence as practical to minimize the potential for propagation to a gross failure. Thus, an early indication or warning signal is necessary to permit proper evaluation of all unidentified LEAKAGE.

Industry practice has shown that water flow changes of 0.5 to 1.0 gpm can be readily detected in contained volumes by monitoring changes in water level, in flow rate, or in the operating frequency of a pump. The containment sump used to collect unidentified LEAKAGE [is] [(or) and air cooler condensate flow rate monitor] [are] instrumented to alarm for increases of 0.5 to 1.0 gpm in the normal flow rates. This sensitivity is acceptable for detecting increases in unidentified LEAKAGE.

The reactor coolant contains radioactivity that, when released to the containment, can be detected by radiation monitoring instrumentation. ~~Reactor coolant radioactivity levels will be low during initial reactor startup and for a few weeks thereafter, until activated corrosion products have been formed and fission products appear from fuel element cladding contamination or cladding defects.~~ Instrument sensitivities of 10^{-9} µCi/cc radioactivity for particulate monitoring and of 10^{-6} µCi/cc radioactivity for gaseous monitoring are practical for these leakage detection systems. Radioactivity detection systems are included for monitoring both particulate and gaseous activities because of their sensitivities and rapid responses to RCS LEAKAGE.

The sensitivity of the containment air gaseous monitor for primary coolant leakage detection is dependent on both the primary coolant activity level and the background radiation level in containment. Shortly after startup and also during steady state operation with low levels of fuel defects, the level of radioactivity in the reactor coolant may be too low for the containment atmosphere gaseous radiation monitors to detect a reactor coolant leak of 1 gpm within one hour as recommended in Reference 2.

An increase in humidity of the containment atmosphere would indicate release of water vapor to the containment. Dew point temperature measurements can thus be used to monitor humidity levels of the containment atmosphere as an indicator of potential RCS LEAKAGE.

A 1°F increase in dew point is well within the sensitivity range of available instruments.

BASES

BACKGROUND (continued)

Since the humidity level is influenced by several factors, a quantitative evaluation of an indicated leakage rate by this means may be questionable and should be compared to observed increases in liquid flow into or from the containment sump [and condensate flow from air coolers]. Humidity level monitoring is considered most useful as an indirect alarm or indication to alert the operator to a potential problem. Humidity monitors are not required by this LCO.

Air temperature and pressure monitoring methods may also be used to infer unidentified LEAKAGE to the containment. Containment temperature and pressure fluctuate slightly during plant operation, but a rise above the normally indicated range of values may indicate RCS leakage into the containment. The relevance of temperature and pressure measurements are affected by containment free volume and, for temperature, detector location. Alarm signals from these instruments can be valuable in recognizing rapid and sizable leakage to the containment. Temperature and pressure monitors are not required by this LCO.

APPLICABLE SAFETY ANALYSES

The need to evaluate the severity of an alarm or an indication is important to the operators, and the ability to compare and verify with indications from other systems is necessary. The system response times and sensitivities are described in the FSAR (Ref. 3). Multiple instrument locations are utilized, if needed, to ensure that the transport delay time of the leakage from its source to an instrument location yields an acceptable overall response time.

The safety significance of RCS LEAKAGE varies widely depending on its source, rate, and duration. Therefore, detecting and monitoring RCS LEAKAGE into the containment area is necessary. Quickly separating the identified LEAKAGE from the unidentified LEAKAGE provides quantitative information to the operators, allowing them to take corrective action should a leakage occur detrimental to the safety of the unit and the public.

RCS leakage detection instrumentation satisfies Criterion 1 of 10 CFR 50.36(c)(2)(ii).

LCO

One method of protecting against large RCS leakage derives from the ability of instruments to rapidly detect extremely small leaks. This LCO requires instruments of diverse monitoring principles to be OPERABLE to provide a high degree of confidence that extremely small leaks are detected in time to allow actions to place the plant in a safe condition, when RCS LEAKAGE indicates possible RCPB degradation.

BASES

LCO (continued)

The LCO is satisfied when monitors of diverse measurement means are available. Thus, the containment sump monitor, in combination with a gaseous or particulate radioactivity monitor [and a containment air cooler condensate flow rate monitor], provides an acceptable minimum.

The measurement reactor coolant system leakage using the containment atmosphere gaseous radioactivity monitors is less sensitive when detecting low levels of leakage than the other leakage detection instruments under very low RCS activity conditions. However, it will provide a positive indication of leakage in the event that high levels of reactor coolant gaseous activity exist as a result of fuel cladding defects. Given the potential limitations of the containment atmosphere gaseous radioactivity monitors at conditions when low radioactivity levels are present in the reactor coolant, OPERABILITY of these monitors is based on the monitors' ability to meet the required Surveillances and not on the ability to indicate a 1 gpm leak rate within one hour.

APPLICABILITY

Because of elevated RCS temperature and pressure in MODES 1, 2, 3, and 4, RCS leakage detection instrumentation is required to be OPERABLE.

In MODE 5 or 6, the temperature is to be ≤ 200°F and pressure is maintained low or at atmospheric pressure. Since the temperatures and pressures are far lower than those for MODES 1, 2, 3, and 4, the likelihood of leakage and crack propagation are much smaller. Therefore, the requirements of this LCO are not applicable in MODES 5 and 6.

ACTIONS

A.1 and A.2

With the required containment sump monitor inoperable, no other form of sampling can provide the equivalent information; however, the containment atmosphere radioactivity monitor will provide indications of changes in leakage. Together with the atmosphere monitor, the periodic surveillance for RCS water inventory balance, SR 3.4.13.1, must be performed at an increased frequency of 24 hours to provide information that is adequate to detect leakage. A Note is added allowing that SR 3.4.13.1 is not required to be performed until 12 hours after establishing steady state operation (stable temperature, power level, pressurizer and makeup tank levels, makeup and letdown, [and RCP seal injection and return flows]). The 12 hour allowance provides sufficient time to collect and process all necessary data after stable plant conditions are established.

Restoration of the required sump monitor to OPERABLE status within a Completion Time of 30 days is required to regain the function after the

monitor's failure. This time is acceptable, considering the Frequency and adequacy of the RCS water inventory balance required by Required Action A.1.

BASES

ACTIONS (continued)

B.1.1, B.1.2, B.2.1, and B.2.2

With both gaseous and particulate containment atmosphere radioactivity monitoring instrumentation channels inoperable, alternative action is required. Either grab samples of the containment atmosphere must be taken and analyzed or water inventory balances, in accordance with SR 3.4.13.1, must be performed to provide alternate periodic information.

With a sample obtained and analyzed or water inventory balance performed every 24 hours, the reactor may be operated for up to 30 days to allow restoration of the required containment atmosphere radioactivity monitors. Alternatively, continued operation is allowed if the air cooler condensate flow rate monitoring system is OPERABLE, provided grab samples are taken or water inventory balances performed every 24 hours.

The 24 hour interval provides periodic information that is adequate to detect leakage. A Note is added allowing that SR 3.4.13.1 is not required to be performed until 12 hours after establishing steady state operation (stable temperature, power level, pressurizer and makeup tank levels, makeup and letdown, [and RCP seal injection and return flows]). The 12 hour allowance provides sufficient time to collect and process all necessary data after stable plant conditions are established. The 30 day Completion Time recognizes at least one other form of leakage detection is available.

[C.1 and C.2

With the required containment air cooler condensate flow rate monitor inoperable, alternative action is again required. Either SR 3.4.15.1 must be performed or water inventory balances, in accordance with SR 3.4.13.1, must be performed to provide alternate periodic information. Provided a CHANNEL CHECK is performed every 8 hours or a water inventory balance is performed every 24 hours, reactor operation may continue while awaiting restoration of the containment air cooler condensate flow rate monitor to OPERABLE status.

The 24 hour interval provides periodic information that is adequate to detect RCS LEAKAGE. A Note is added allowing that SR 3.4.13.1 is not required to be performed until 12 hours after establishing steady state operation (stable temperature, power level, pressurizer and makeup tank levels, makeup and letdown, [and RCP seal injection and return flows]). The 12 hour allowance provides sufficient time to collect and process all necessary data after stable plant conditions are established.]

BASES

ACTIONS (continued)

D.1, D.2, and D.3

With the containment sump monitor, the containment air cooler condensate flow rate monitor, and the containment atmospheric particulate monitor inoperable, the only means of detecting LEAKAGE is the containment atmospheric gaseous monitor. The containment atmospheric gaseous monitor typically cannot detect a 1 gpm leak within one hour when RCS activity is low and this configuration does not provide the required diverse means of leakage detection. The Required Action is to restore any of the inoperable monitors to OPERABLE status within 7 days to regain the intended leakage detection diversity and response time. The 7 day Completion Time ensures that the plant will not be operated in a degraded configuration for a lengthy time period.]

[~~D~~E.1 and ~~D~~E.2

With the required containment atmosphere radioactivity monitor and the required containment air cooler condensate flow rate monitor inoperable, the only means of detecting leakage is the containment sump monitor. This Condition does not provide the required diverse means of leakage detection. The Required Action is to restore either of the inoperable required monitors to OPERABLE status within 30 days to regain the intended leakage detection diversity. The 30 day Completion Time ensures that the plant will not be operated in a reduced configuration for a lengthy time period.]

F.1 and F.2

With the containment sump monitor and the containment gaseous and particulate atmospheric monitor channels inoperable, the only means of detecting LEAKAGE is the containment air cooler condensate flow rate monitor. This condition does not provide the required diverse means of leakage detection. The Required Action is to restore either of the inoperable monitors to OPERABLE status within 30 days to regain the intended leakage detection diversity. The 30 day Completion Time ensures that the plant will not be operated in a degraded configuration for a lengthy time period.

~~E~~G.1 and ~~E~~G.2

If a Required Action of Condition A, B, [C], D, E, or [F~~D~~] cannot be met, the plant must be brought to a MODE in which the requirement does not

apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

~~F~~H.1

With all required monitors inoperable, no automatic means of monitoring leakage are available, and immediate plant shutdown in accordance with LCO 3.0.3 is required.

SURVEILLANCE REQUIREMENTS

SR 3.4.15.1

SR 3.4.15.1 requires the performance of a CHANNEL CHECK of the required containment atmosphere radioactivity monitor. The check gives reasonable confidence that the channel is operating properly. The Frequency of 12 hours is based on instrument reliability and is reasonable for detecting off normal conditions.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.6 RCS Leakage Detection Instrumentation

LCO 3.4.6 The following RCS leakage detection instrumentation shall be OPERABLE:

a. Drywell floor drain sump monitoring system, [and]

b. One channel of either primary containment atmospheric particulate or atmospheric gaseous monitoring system, and

[c. Primary containment air cooler condensate flow rate monitoring system.]

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Drywell floor drain sump monitoring system inoperable.	A.1	Restore drywell floor drain sump monitoring system to OPERABLE status.	30 days
B. Required primary containment atmospheric monitoring system inoperable.	B.1	Analyze grab samples of primary containment atmosphere.	Once per 12 hours
	AND		
	B.2	[Restore required primary containment atmospheric monitoring system to OPERABLE status.	30 days]
C. [Primary containment air cooler condensate flow rate monitoring system inoperable.	C.1	----------NOTE---------- Not applicable when required primary containment atmospheric monitoring system is inoperable. ----------	

CONDITION	REQUIRED ACTION	COMPLETION TIME
	Perform SR 3.4.6.1.	Once per 8 hours]
D. Drywell floor drain sump monitoring system inoperable. AND Primary containment air cooler condensate flow rate monitoring system inoperable. AND Primary containment atmospheric particulate monitoring system inoperable.	D.1 Restore drywell floor drain sump monitoring system to OPERABLE status. OR D.2 Restore primary containment air cooler condensate flow rate monitoring system to OPERABLE status. OR D.3 Restore primary containment atmospheric particulate monitoring system	7 days 7 days 7 days
ED.[Required primary containment atmospheric monitoring system inoperable. AND Primary containment air cooler condensate flow rate monitoring system inoperable.	ED.1 Restore required primary containment atmospheric monitoring system to OPERABLE status. OR ED.2 Restore primary containment air cooler condensate flow rate monitoring system to OPERABLE status.	30 days 30 days]
F. Drywell floor drain sump monitoring system inoperable AND Required primary containment atmospheric monitoring system inoperable.	F.1 Restore drywell floor drain sump monitoring system to OPERABLE status. OR F.2 Restore primary containment atmospheric monitoring system inoperable to OPERABLE status.	30 days 30 days]

Comment [BDM1]: Only primary containment gaseous monitor OPERABLE.

Comment [BDM2]: Only containment drywell floor drain sump monitoring system OPERABLE.

Comment [BDM3]: Only the primary containment air cooler condensate flow rate monitoring system is OPERABLE.

CONDITION	REQUIRED ACTION	COMPLETION TIME
GE. Required Action and associated Completion Time of Condition A, B, {C, or D, E, or F} not met.	GE.1 Be in MODE 3. AND GE.2 Be in MODE 4.	12 hours 36 hours
HF. All required leakage detection systems inoperable.	HF.1 Enter LCO 3.0.3.	Immediately

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.6 RCS Leakage Detection Instrumentation

BASES

BACKGROUND

GDC 30 of 10 CFR 50, Appendix A (Ref. 1), requires means for detecting and, to the extent practical, identifying the location of the source of RCS LEAKAGE. Regulatory Guide 1.45 (Ref. 2) describes acceptable methods for selecting leakage detection systems.

Limits on LEAKAGE from the reactor coolant pressure boundary (RCPB) are required so that appropriate action can be taken before the integrity of the RCPB is impaired (Ref. 2). Leakage detection systems for the RCS are provided to alert the operators when leakage rates above normal background levels are detected and also to supply quantitative measurement of leakage rates. The Bases for LCO 3.4.4, "RCS Operational LEAKAGE," discuss the limits on RCS LEAKAGE rates.

Systems for separating the LEAKAGE of an identified source from an unidentified source are necessary to provide prompt and quantitative information to the operators to permit them to take immediate corrective action.

LEAKAGE from the RCPB inside the drywell is detected by at least one of two or three independently monitored variables, such as sump level changes and drywell gaseous and particulate radioactivity levels. The primary means of quantifying LEAKAGE in the drywell is the drywell floor drain sump monitoring system.

The drywell floor drain sump monitoring system monitors the LEAKAGE collected in the floor drain sump. This unidentified LEAKAGE consists of LEAKAGE from control rod drives, valve flanges or packings, floor drains, the Closed Cooling Water System, and drywell air cooling unit condensate drains, and any LEAKAGE not collected in the drywell equipment drain sump. The primary containment floor drain sump has transmitters that supply level indications in the main control room.

The floor drain sump level indicators have switches that start and stop the sump pumps when required. A timer starts each time the sump is pumped down to the low level setpoint. If the sump fills to the high level setpoint before the timer ends, an alarm sounds in the control room, indicating a LEAKAGE rate into the sump in excess of a preset limit.

A flow indicator in the discharge line of the drywell floor drain sump pumps provides flow indication in the control room. The pumps can also be started from the control room.

BASES

BACKGROUND (continued)

The primary containment air monitoring systems continuously monitor the primary containment atmosphere for airborne particulate and gaseous radioactivity. A sudden increase of radioactivity, which may be attributed to RCPB steam or reactor water LEAKAGE, is annunciated in the control room. The primary containment atmosphere particulate and gaseous radioactivity monitoring systems are not capable of quantifying LEAKAGE rates. The sensitivity of the primary containment atmosphere gaseous monitoring systems is dependent on both the primary coolant activity level and the background radiation level in primary containment. Shortly after startup and also during steady state operation with low levels of fuel defects, the level of radioactivity in the reactor coolant may be too low for the primary containment atmosphere gaseous radioactivity monitoring systems to detect a reactor coolant leak of 1 gpm within one hour as recommended in Reference 2. ~~, but are sensitive enough to indicate increased LEAKAGE rates of 1 gpm within 1 hour.~~ The time required to detect l~~L~~arger changes in LEAKAGE rates will be dependent on the level of activity in the reactor coolant~~are detected in proportionally shorter times~~ (Ref. 3).

[Condensate from four of the six primary containment coolers is routed to the primary containment floor drain sump and is monitored by a flow transmitter that provides indication and alarms in the control room. This primary containment air cooler condensate flow rate monitoring system serves as an added indicator, but not quantifier, of RCS unidentified LEAKAGE.]

APPLICABLE SAFETY ANALYSES

A threat of significant compromise to the RCPB exists if the barrier contains a crack that is large enough to propagate rapidly. LEAKAGE rate limits are set low enough to detect the LEAKAGE emitted from a single crack in the RCPB (Refs. 4 and 5). Each of the leakage detection systems inside the drywell is designed with the capability of detecting LEAKAGE less than the established LEAKAGE rate limits and providing appropriate alarm of excess LEAKAGE in the control room.

A control room alarm allows the operators to evaluate the significance of the indicated LEAKAGE and, if necessary, shut down the reactor for further investigation and corrective action. The allowed LEAKAGE rates are well below the rates predicted for critical crack sizes (Ref. 6). Therefore, these actions provide adequate response before a significant break in the RCPB can occur.

RCS leakage detection instrumentation satisfies Criterion 1 of 10 CFR 50.36(c)(2)(ii).

LCO

The drywell floor drain sump monitoring system is required to quantify the unidentified LEAKAGE from the RCS. Thus, for the system to be

considered OPERABLE, either the flow monitoring or the sump level monitoring portion of the system must be OPERABLE. The other monitoring systems provide early alarms to the operators so closer examination of other detection systems will be made to determine the extent of any corrective action that may be required. With the leakage detection systems inoperable, monitoring for LEAKAGE in the RCPB is degraded. The measurement reactor coolant system leakage using the primary containment atmosphere gaseous radioactivity monitors is less sensitive when detecting low levels of leakage than the other leakage detection instruments under very low RCS activity conditions. However, it will provide a positive indication of leakage in the event that high levels of reactor coolant gaseous activity exist as a result of fuel cladding defects. Given the potential limitations of the primary containment atmosphere gaseous radioactivity monitors at conditions when low radioactivity levels are present in the reactor coolant, OPERABILITY of these monitors is based on the monitors' ability to meet the required Surveillances and not on the ability to indicate a 1 gpm leak rate within one hour.

BASES

APPLICABILITY

In MODES 1, 2, and 3, leakage detection systems are required to be OPERABLE to support LCO 3.4.4. This Applicability is consistent with that for LCO 3.4.4.

ACTIONS A.1

With the drywell floor drain sump monitoring system inoperable, no other form of sampling can provide the equivalent information to quantify leakage. However, the primary containment atmospheric activity monitor [and the primary containment air cooler condensate flow rate monitor] will provide indication of changes in leakage.

With the drywell floor drain sump monitoring system inoperable, but with RCS unidentified and total LEAKAGE being determined every 8 hours (SR 3.4.4.1), operation may continue for 30 days. The 30 day Completion Time of Required Action A.1 is acceptable, based on operating experience, considering the multiple forms of leakage detection that are still available.

B.1 and B.2

With both gaseous and particulate primary containment atmospheric monitoring channels inoperable, grab samples of the primary containment atmosphere must be taken and analyzed to provide periodic leakage information. [Provided a sample is obtained and analyzed once every 12 hours, the plant may be operated for up to 30 days to allow restoration of at least one of the required monitors.] [Provided a sample is obtained and analyzed every 12 hours, the plant may continue operation since at least one other form of drywell leakage detection (i.e., air cooler condensate flow rate monitor) is available.]

The 12 hour interval provides periodic information that is adequate to detect LEAKAGE. The 30 day Completion Time for restoration recognizes that at least one other form of leakage detection is available.

BASES

ACTIONS (continued)

[C.1

With the required primary containment air cooler condensate flow rate monitoring system inoperable, SR 3.4.6.1 must be performed every 8 hours to provide periodic information of activity in the primary containment at a more frequent interval than the routine Frequency of SR 3.4.7.1. The 8 hour interval provides periodic information that is adequate to detect LEAKAGE and recognizes that other forms of leakage detection are available. However, this Required Action is modified by a Note that allows this action to be not applicable if the required primary containment atmospheric monitoring system is inoperable. Consistent with SR 3.0.1, Surveillances are not required to be performed on inoperable equipment.]

D.1, D.2, and D.3

With the drywell floor drain sump monitoring system, the primary containment air cooler condensate flow rate monitor, and the primary containment atmospheric particulate monitor inoperable, the only means of detecting LEAKAGE is the primary containment atmospheric gaseous monitor. The primary containment atmospheric gaseous monitor typically cannot detect a 1 gpm leak within one hour when RCS activity is low and this configuration does not provide the required diverse means of leakage detection. The Required Action is to restore any of the inoperable monitors to OPERABLE status within 7 days to regain the intended leakage detection diversity and response time The 7 day Completion Time ensures that the plant will not be operated in a degraded configuration for a lengthy time period.]

[~~E~~D.1 and ~~E~~D.2

With both the primary containment gaseous and particulate atmospheric monitor channels and the primary containment air cooler condensate flow rate monitor inoperable, the only means of detecting LEAKAGE is the drywell floor drain sump monitor. This condition does not provide the required diverse means of leakage detection. The Required Action is to restore either of the inoperable monitors to OPERABLE status within 30 days to regain the intended leakage detection diversity. The 30 day Completion Time ensures that the plant will not be operated in a degraded configuration for a lengthy time period.~~]~~

F.1 and F.2

With both the drywell floor drain sump monitoring system and the primary containment gaseous and particulate atmospheric monitor channels, the only means of detecting LEAKAGE is the primary containment air cooler condensate flow rate monitor. This condition does not provide the required diverse means of leakage detection. The Required Action is to restore either of the inoperable monitors to OPERABLE status within 30 days to regain the intended leakage detection diversity. The 30 day Completion Time ensures that the plant will not be operated in a degraded configuration for a lengthy time period.

GE.1 and GE.2

If any Required Action of Condition A, B, [C, D, E, or F or D] cannot be met within the associated Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to perform the actions in an orderly manner and without challenging plant systems.

HF.1

With all required monitors inoperable, no required automatic means of monitoring LEAKAGE are available, and immediate plant shutdown in accordance with LCO 3.0.3 is required.