Ref: LCR 91-01

ATTACHMENT 2

INSERTS AND MARKED-UP PAGES

Ref: LCR 91-01

INSERT FOR TECHNICAL SPECIFICATION - 4.0.5

INSERT 1

f.	The Inservice Inspection Program for piping identified in NRC generic Letter 88-01 shall be performed in accordance with PSE&G's commitments (approved by NRC) on the staff positions on schedule, methods, and personnel and sample expansion included in this generic letter.

Ref: LCR 91-01

INSERTS FOR TECHNICAL SPECIFICATION - 3.4.3.1

INSERT 2

a. The drywell floor and equipment drain sump monitoring system,
b. The drywell atmosphere gaseous radioactivity monitoring system,
c. All three of the following:
   1. The drywell air cooler condensate flow rate monitoring system,
   2. The drywell pressure monitoring system, and
   3. The drywell temperature monitoring system.

INSERT 3

a. With the drywell floor and equipment drain sump monitoring system inoperable:

   1. operation may continue for 30 days provided that all monitoring systems in 3.4.3.1.b and 3.4.3.1.c are OPERABLE, and provided that preplanned manual calculation to quantify leak rate is performed at least once per four hours, or

   2. restore the system to OPERABLE status within 24 hours.

b. With the drywell atmosphere gaseous radioactivity monitoring system inoperable, operation may continue for 30 days provided that the monitoring systems required by 3.4.3.1.a and 3.4.3.1.c are OPERABLE, and provided that grab samples of the drywell atmosphere are obtained and analyzed at least once per 24 hours.

c. With one monitoring system in 3.4.3.1.c inoperable, exert best efforts to restore the system to OPERABLE status within 30 days and if unsuccessful, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days outlining the cause for the malfunction and plans for restoring the system to OPERABLE status.

   With two less than the number of monitoring systems required by 3.4.3.1.c OPERABLE, operation may continue for up to 30 days, provided that the drywell floor and equipment drain sump monitoring system in 3.4.3.1.a and the drywell atmosphere gaseous radioactivity monitoring system in 3.4.3.1.b are OPERABLE.

d. Otherwise, be in HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

Ref: LCR 91-01

INSERTS FOR TECHNICAL SPECIFICATION - 3.4.3.2

INSERT 4

e. 2 gpm or greater increase in UNIDENTIFIED LEAKAGE within any period of 24 hours or less.

INSERT 5

e. With any increase in UNIDENTIFIED LEAKAGE exceeding the above limit, implement preplanned leak location and isolation actions and either verify that the source of the leakage is not service-sensitive type 304 or 316 stainless steel or reduce the leakage rate-of-change to less than the limit within 4 hours or be in HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

INSERT FOR TECHNICAL SPECIFICATION - 4.4.3.2.1

INSERT 6

8 hours

Ref: LCR 91-01

INSERTS FOR TECHNICAL SPECIFICATION BASES

Specification 4.0.5

INSERT 7

This Specification includes inservice inspection requirements that conform to the guidance of Generic Letter 88-01, "NRC Position on IGSCC in BWR Austinitic Stainless Steel Piping".

Specification 3/4.4.3.1

INSERT 8

and Generic Letter 88-01, "NRC Position on IGSCC in BWR Austinitic Stainless Steel Piping".

Specification 3/4.4.3.2

INSERT 9

The limit placed upon the rate of increase in UNIDENTIFIED LEAKAGE meets the guidance of Generic Letter 88-01, "NRC Position on IGSCC in BWR Austinitic Stainless Steel Piping".

SURVEILLANCE REQUIREMENTS (Continued)

Pressure Vessel Code and applicable Addenda shall be applicable as follows in these Technical Specifications:

ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice inspection and testing activities	Required frequencies for performing inservice inspection and testing activities
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
Every 9 months	At least once per 276 days
Yearly or annually	At least once per 366 days

c. The provisions of Specification 4.0.2 are applicable to the above required frequencies for performing inservice inspection and testing activities.

d. Performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements.

e. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any Technical Specification.

INSERT 1

3/4.4.3 REACTOR COOLANT SYSTEM LEAKAGE

LEAKAGE DETECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.3.1 The following reactor coolant system leakage detection systems shall be OPERABLE:

INSERT 2

~~a. The drywell atmosphere gaseous radioactivity monitoring system,~~
~~b. The drywell floor and equipment drain sump monitoring system,~~
~~c. The drywell air cooler condensate flow rate monitoring system,~~
~~d. The drywell pressure monitoring system, and~~
~~e. The drywell temperature monitoring system.~~

DELETE

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3.

ACTION:

INSERT 3

~~With only four of the above required leakage detection systems OPERABLE, operation may continue for up to 30 days provided grab samples of the containment atmosphere are obtained and analyzed at least once per 24 hours when the required drywell atmosphere gaseous radioactivity monitoring system, the drywell pressure monitoring system, the drywell temperature monitoring system and/or the drywell air cooler condensate flow rate monitoring system is inoperable; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.~~

SURVEILLANCE REQUIREMENTS

4.4.3.1 The reactor coolant system leakage detection systems shall be demonstrated OPERABLE by:

a. Drywell atmosphere gaseous radioactivity monitoring system-performance of a CHANNEL CHECK at least once per 12 hours, a CHANNEL FUNCTIONAL TEST at least once per 31 days and a CHANNEL CALIBRATION at least once per 18 months.

MOVE TO NEXT PAGE (NEW PAGE 10a)

1 pressure shall be monitored at least once per 12 hours
/well temperature shall be monitored at least once per 24

c. Drywell floor and equipment drain sump monitoring system-performance of a CHANNEL FUNCTIONAL TEST at least once per 31 days and a CHANNEL CALIBRATION TEST at least once per 18 months.

d. Drywell air coolers condensate flow rate monitoring system-performance of a CHANNEL FUNCTIONAL TEST at least once per 31 days and a CHANNEL CALIBRATION at least once per 18 months.

SURVEILLANCE REQUIREMENTS

4.4.3.1 The reactor coolant system leakage detection systems shall be demonstrated OPERABLE by:

a. Drywell atmosphere gaseous radioactivity monitoring system-performance of a CHANNEL CHECK at least once per 12 hours, a CHANNEL FUNCTIONAL TEST at least once per 31 days and a CHANNEL CALIBRATION at least once per 18 months.

b. The drywell pressure shall be monitored at least once per 12 hours and the drywell temperature shall be monitored at least once per 24 hours.

c. Drywell floor and equipment drain sump monitoring system performance of a CHANNEL FUNCTIONAL TEST at least once per 31 days and a CHANNEL CALIBRATION TEST at least once per 18 months.

d. Drywell air coolers condensate flow rate monitoring system-performance of a CHANNEL FUNCTIONAL TEST at least once per 31 days and a CHANNEL CALIBRATION at least once per 18 months.

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REACTOR COOLANT SYSTEM

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.3.2 Reactor coolant system leakage shall be limited to:

a. No PRESSURE BOUNDARY LEAKAGE.

b. 5 gpm UNIDENTIFIED LEAKAGE.

c. 25 gpm IDENTIFIED LEAKAGE averaged over any 24-hour period.

d. 0.5 gpm leakage per nominal inch of valve size up to a maximum of 5 gpm from any reactor coolant system pressure isolation valve specified in Table 3.4.3.2-1, at rated pressure.

INSERT 4

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3.

ACTION:

a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

b. With any reactor coolant system leakage greater than the limits in b and/or c, above, reduce the leakage rate to within the limits within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. With any reactor coolant system pressure isolation valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least one other closed manual or deactivated automatic or check* valves, or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

d. With one or more of the high/low pressure interface valve leakage pressure monitors shown in Table 3.4.3.2-2 inoperable, restore the inoperable monitor(s) to OPERABLE status within 7 days or verify the pressure to be less than the alarm setpoint at least once per 12 hours; restore the inoperable monitor(s) to OPERABLE status within 30 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

INSERT 5

*Which have been verified not to exceed the allowable leakage limit at the last refueling outage or the after last time the valve was disturbed, whichever is more recent.

SURVEILLANCE REQUIREMENTS

4.4.3.2.1 The reactor coolant system leakage shall be demonstrated to be within each of the above limits by:

a. Monitoring the drywell atmospheric gaseous radioactivity at least once per ~~12 hours~~ (not a means of quantifying leakage),

INSERT 6

b. Monitoring the drywell floor and equipment drain sump flow rate at least once per ~~12 hours~~, and

INSERT 6

c. Monitoring the drywell air coolers condensate flow rate at least once per ~~12 hours~~, and

INSERT 6

d. Monitoring the drywell pressure at least once per ~~12 hours~~ (not a means of quantifying leakage), and

INSERT 6

e. Monitoring the reactor vessel head flange leak detection system at least once per 24 hours (not a means of quantifying leakage), and

f. Monitoring the drywell temperature at least once per 24 hours (not a means of quantifying leakage).

4.4.3.2.2 Each reactor coolant system pressure isolation valve specified in Table 3.4.3.2-1 shall be demonstrated OPERABLE by leak testing pursuant to Specification 4.0.5 and verifying the leakage of each valve to be within the specified limit:

a. At least once per 18 months,** and

b. Prior to returning the valve to service following maintenance, repair or replacement work on the valve which could affect its leakage rate.

The provisions of Specification 4.0.4 are not applicable for entry into OPERATIONAL CONDITION 3.

4.4.3.2.3 The high/low pressure interface valve leakage pressure monitors shall be demonstrated OPERABLE with alarm setpoints per Table 3.4.3.2-2 by performance of a:

a. CHANNEL FUNCTIONAL TEST at least once per 31 days, and

b. CHANNEL CALIBRATION at least once per 18 months.

**P.I.V. leak test extension to the first refueling outage is permissible for each RCS P.I.V. listed in Table 3.4.3.2-1, that is identified in Public Service Electric & Gas Company's letter to the NRC (letter No. NLR-N87047), dated April 3, 1987, as needing a plant outage to test. For this one time test interval, the requirements of Section 4.0.2 are not applicable.

BASES (Con't)

condition of operation specified in the Applicability statement. The purpose of this specification is to ensure that system and component OPERABILITY requirements or parameter limits are met before entry into an OPERATIONAL CONDITION or other specified condition for which these systems and components ensure safe operation of the facility. This provision applies to changes in OPERATIONAL CONDITIONS or other specified conditions associated with plant shutdown as well as startup.

Under the provisions of this specification, the applicable Surveillance Requirements must be performed within the specified surveillance interval to assume that the Limiting Conditions for Operation are met during initial plant startup or following a plant outage.

When a shutdown is required to comply with ACTION requirements, the provisions of Specification 4.0.4 do not apply because this would delay placing the facility in a lower CONDITIONS of operation.

Specification 4.0.5 establishes the requirement that inservice inspection of ASME Code Class 1, 2, and 3 components and inservice testing of ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with a periodically updated version of Section XI of the ASME Boiler and Pressure Vessel Code and Addenda as required by 10 CFR 50.55a. These requirements apply except when relief has been provided in writing by the Commission.

This specification includes a clarification of the frequencies for performing the inservice inspection and testing activities required by Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda. This clarification is provided to ensure consistency in surveillance intervals throughout the Technical Specifications and to remove any ambiguities relative to the frequencies for performing the required inservice inspection and testing activities.

Under the terms of this specification, the more restrictive requirements of the Technical Specifications take precedence over the ASME Boiler and Pressure Vessel Code and applicable Addenda. The requirements of Specification 4.0.4 to perform surveillance activities before entry into an OPERATIONAL CONDITION or other specified condition takes precedence over the ASME Boiler and Pressure Vessel Code provision that allows pumps and valves to be tested up to one week after return to normal operation. The Technical Specification definition of OPERABLE does not allow a grace period before a component, which is not capable of performing its specified function, is declared inoperable and takes precedence over the ASME Boiler and Pressure Vessel Code provision that allows a valve to be incapable of performing its specified function for up to 24 hours before being declared inoperable.

INSERT 7

3/4.4.3 REACTOR COOLANT SYSTEM LEAKAGE

3/4.4.3.1 LEAKAGE DETECTION SYSTEMS

The RCS leakage detection systems required by this specification are provided to monitor and detect leakage from the reactor coolant pressure boundary. These detection systems are consistent with the recommendations of Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems", May 1973.

INSERT 8

3/4.4.3.2 OPERATIONAL LEAKAGE

The allowable leakage rates from the reactor coolant system have been based on the predicted and experimentally observed behavior of cracks in pipes. The normally expected background leakage due to equipment design and the detection capability of the instrumentation for determining system leakage was also considered. The evidence obtained from experiments suggests that for leakage somewhat greater than that specified for UNIDENTIFIED LEAKAGE the probability is small that the imperfection or crack associated with such leakage would grow rapidly. However, in all cases, if the leakage rates exceed the values specified or the leakage is located and known to be PRESSURE BOUNDARY LEAKAGE, the reactor will be shutdown to allow further investigation and corrective action.

The Surveillance Requirements for RCS pressure isolation valves provide added assurance of valve integrity thereby reducing the probability of gross valve failure and consequent intersystem LOCA. Leakage from the RCS pressure isolation valves is IDENTIFIED LEAKAGE and will be considered as a portion of the allowed limit.

INSERT 9

3/4.4.4 CHEMISTRY

The water chemistry limits of the reactor coolant system are established to prevent damage to the reactor materials in contact with the coolant. Chloride limits are specified to prevent stress corrosion cracking of the stainless steel. The effect of chloride is not as great when the oxygen concentration in the coolant is low, thus the 0.2 ppm limit on chlorides is permitted during POWER OPERATION. During shutdown and refueling operations, the temperature necessary for stress corrosion to occur is not present so a 0.5 ppm concentration of chlorides is not considered harmful during these periods.

Conductivity measurements are required on a continuous basis since changes in this parameter are an indication of abnormal conditions. When the conductivity is within limits, the pH, chlorides and other impurities affecting conductivity must also be within their acceptable limits. With the conductivity meter inoperable, additional samples must be analyzed to ensure that the chlorides are not exceeding the limits.

The surveillance requirements provide adequate assurance that concentrations in excess of the limits will be detected in sufficient time to take corrective action.

Ref: LCR 91-01

ATTACHMENT 3

REFERENCED DOCUMENTS

ALTERNATE RCS LEAKAGE DETERMINATION
PROCEDURE OP-ST-SK-001(Q)

ALTERNATE RCS LEAKAGE DETERMINATION

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ALTERNATE RCS LEAKAGE DETERMINATION

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ALTERNATE RCS LEAKAGE DETERMINATION

1.0 PURPOSE

The purpose of this procedure is to determine Reactor Coolant System leak rate in the event the normal Drywell Floor and/or Equipment Drain Sump Monitoring System is inoperable and to satisfy Tech. Spec. 3.4.3.1.b and 4.4.3.2.1.b.

2.0 PREREQUISITES

> NOTE 2.0
>
> Prerequisites within a subsection may be completed in any order.

2.1 Determining Drywell Floor Drain Leak Rate

2.1.1 Permission to perform this test has been obtained from the SNSS/NSS and a signature on Attachment 1 has been obtained.

2.1.2 The NCO has been informed that the following test is to be performed and the following alarms, indications and functions will be observed:

2.1.2.1 Alarms

None

2.1.2.2 Indications

None

2.1.2.3 Functions

None

2.1.3 No other testing or maintenance is in progress that will adversely affect the performance of this test.

2.1.4 The ability to read Drywell Floor Drain inleakage on RMS modules 1SKLI-4930 (Panel 10C604) or 1SKLI-4930A (Control & Diesel Generator Bldg. - El. 124') is lost.

2.1.5 I&C personnel are available to connect multimeter and/or chart recorder at Panel 1DC695.

2.2 Determining Drywell Equipment Drain Leak Rate

2.2.1 Permission to perform this test has been obtained from the SNSS/NSS and a signature on Attachment 1 has been obtained.

2.2.2 The NCO has been informed that the following test is to be performed and the following alarms, indications and functions will be observed:

2.2.2.1 Alarms

None

2.2.2.2 Indications

None

2.2.2.3 Functions

None

2.2.3 No other testing or maintenance is in progress that will adversely affect the performance of this test.

2.2.4 The ability to read Drywell Equipment Drain inleakage on RMS modules 1SKLI-4930 (Panel 10C604) or 1SKLI-4930A (Control & Diesel Generator Bldg. - El. 124') is lost.

2.2.5 I&C personnel are available to connect multimeter and/or chart recorder at Panel 1DC695.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Precautions

3.1.1 If at any time during the performance of this test, a step cannot be completed or is observed to be unsatisfactory; IMMEDIATELY NOTIFY the NCO and the SNSS/NSS.

3.1.2 The Action Pack Isolator is removed prior to connecting the Multimeter, as an accidental short circuit while disconnecting or connecting wiring may cause a failure of the Action Pack Isolator.

3.2 Limitations

3.2.1 All steps of this procedure are to be completed in sequence unless otherwise specified.

3.2.2 Ensure leak rate is in compliance with Tech. Spec. 3.4.3.2, during Conditions 1, 2, and 3.

3.2.3 Section 5.1 and 5.2 may be performed concurrently.

4.0 EQUIPMENT REQUIRED

4.1 Keithly Model 197 Multimeter or equivalent

4.2 Gould Model 2200S Chart Recorder or equivalent

5.0 PROCEDURE

CAUTION 5.0

If at any time during the performance of this procedure, a step cannot be completed or is observed to be unsatisfactory; IMMEDIATELY NOTIFY the NCO and the SNSS/NSS.

NOTE 5.0

A. All operations are performed locally at Junction Box 1DC695 unless otherwise noted.

B. Junction Box 1DC695 is located in the Control & Diesel Generator Bldg. - El. 124' - Room 5448.

5.1 Determining Drywell Floor Drain Leakage

5.1.1 I&C procedure start time in the Control Room Narrative log.

5.1.2 Ensure that all prerequisites have been satisfied IAW Section 2.0 of this procedure.

5.1.3 Ensure Attachment 1, Section 1, of the SNSS/NSS Data Sheet has been completed and Regular Surveillance or Retest is indicated.

NOTE 5.1.4

If failure to read Drywell Floor Drain Sump level at 1SKLI-4930 and 1SKLI-4930A was caused by power failure to the RM-80 Motherboard or failure of 1SKLT-4931, proceed to step 5.1.5.

5.1.4 Floor Drain Sump levels should be monitored and a leak rate calculated at the frequencies specified in Attachment 3.

5.1.5 Request I&C to connect a Keithley Model 197 Multimeter set to read milliamps DC or equivalent as follows:

CAUTION 5.1.5.1

The Action Pack Isolator is removed prior to connecting the Multimeter, as an accidental short circuit while disconnecting or connecting wiring may cause a failure of the Action Pack Isolator.

5.1.5.1 REMOVE A-1 Action Pack Isolator.

5.1.5.2 LIFT lead from 1SKLT-4931 //Drywell Floor Drain Sump Level Transmitter// at terminal 4, TB4 and SIGN Attachment 2, Sheet 6.

5.1.5.3 CONNECT one input of multimeter to lifted lead and SIGN Attachment 2, Sheet 6.

5.1.5.4 CONNECT the other input of multimeter to terminal 4, TB4 and SIGN Attachment 2, Sheet 6.

NOTE 5.1.5.5

If multimeter indication is offscale high or low, NOTIFY SNSS/NSS that the Drywell Floor Drain Sump level may be out of normal range or possible failure of 1SKLT-4931.

5.1.5.5 Ensure multimeter indicates between 4 and 20 milliamps.

5.1.5.6 INSERT A-1 Action Pack Isolator.

5.1.6 Request I&C to connect a Gould Model 2200S Chart Recorder or equivalent as follows:

5.1.6.1 CONNECT positive input of recorder to terminal 7, TB3 and SIGN Attachment 2, Sheet 6.

5.1.6.2 CONNECT negative input of recorder to terminal 8, TB3 and SIGN Attachment 2, Sheet 6.

5.1.6.3 SET recorder pin to center scale with a gain of 5 VDC per major division.

5.1.6.4 SET recorder chart speed at 5 mm/sec ± 100.

5.1.7 DEPRESS START Pb on //DRYWELL FLOOR DRAIN SUMP BT267 pump// C(D)P267 (10C650D).

NOTE 5.1.8

The recorder pin will indicate 0 VDC when the Floor Drain Sump Pump(s) is running and 5 VDC when the pump is not running.

5.1.8 Observe recorder pin indicates 0 VDC while pump is running.

5.1.9 Allow pump to stop automatically on low sump level.

5.1.10 RECORD on the chart the time, date and initials at point where pump stopped (chart should indicate 5 VDC).

5.1.11 RECORD Pump stop time, date and initials on Attachment 2, Sheet 2.

5.1.12 If multimeter is connected to read 1SKLT-4931 output, perform the following:

5.1.12.1 Observe milliamp indication on the multimeter and RECORD on Attachment 2, Sheet 3.

5.1.12.2 RECORD time, date and initials on Attachment 2, Sheet 3.

5.1.13 At the intervals specified in Attachment 3, perform the following:

> NOTE 5.1.13.1
>
> The recorder pin will indicate 0 VDC when the Floor Drain Sump Pump(s) is running and 5 VDC when the pump is not running.

5.1.13.1 Observe recorder chart for indication of a sump pumpout.

5.1.13.2 If there was a sump pumpout, obtain pump start time and stop time from the chart by measurement from present time (7.1 inches/hr.) and RECORD on Attachment 2, Sheet 2.

5.1.13.3 RECORD differential time from the previous pump stop (auto shutdown) to the last pump start on Attachment 2, Sheet 2.

5.1.13.4 Observe the milliamp indication the multimeter and record it on Attachment 2, sheet 3. Mark "Diff. MA" as NA for the milliamp reading above it.

5.1.13.5 Using Equation on Attachment 2, Sheet 2, obtain and RECORD inleakage time, date and initials.

5.1.13.6 If there were no pumpouts and a multimeter is connected, perform the following:

a. Record the current MA output on att. 2 sht. 3.

b. RECORD differential milliamps on att. 2 sht. 3

c. RECORD differential time from the previous time reading to the present time reading on Attachment 2, Sheet 3.

d. Using Equation on Attachment 2, Sheet 3, obtain and RECORD inleakage.

e. Continue to monitor and calculate leak rates at the times specified on Attachment 3. Times on Attachment 3 are based on the last calculated leak rate.

f. The Floor Drain sump should be pumped down when the combination of leak rate and milliamp output exceeds the curves on Attachment 3. This will ensure that an adequate volume is available in the sump so that a pump run should not occur between readings.

g. If the sump was pumped down as a result of step "f" above, perform the following:

h. OBSERVE the milliamp output of the multimeter and record on Attachment 2, sheet 3.

i. Record the pump stop time, date on Attachment 2, sheet 2. Mark the "Diff MA", "DIFF TIME", and "INLEAKAGE" as NA on the line above the latest entry.

5.1.14 Record required leak rate readings from Attachments IAW OP-DL.ZZ-026(Q); Surveillance Log.

5.1.15 If there was not a pumpout in the past time interval (1 hr., 30 mins., 15 mins.) and the multimeter is not connected, record the inleakage as less than the value specified in Table 5.1.15.

TABLE 5.1.15			
Time from Last Pumpout	Inleakage (GPM)	Time from Last Pumpout	Inleakage (GPM)
8 Hours	<.19		
7 Hours	<.21	45 Minutes	<1.97
6 Hours	<.25	30 Minutes	<2.96
5 Hours	<.30	18 Minutes	<4.94
4 Hours	<.37	15 Minutes	<5.92
3 Hours	<.49		
2 Hours	<.78		
1 Hour	<1.48		

5.1.16 When the capability to obtain leak rate information from the RMS for Drywell Floor Drain System has returned, exit this procedure subsection.

5.1.17 If this is the final subsection of this procedure to be performed:

5.1.17.1 Request I&C to remove recorder and multimeter (if used) and return lifted lead to terminal 4 at TB4.

5.1.17.2 VERIFY lifted lead was terminated to terminal 4 at TB4 and INITIAL Attachment 2, Sheet 6 (I&C and OP).

5.1.17.3 LOG test end time in the Control Room Narrative log.

5.1.17.4 SUBMIT this procedure to the SNSS/NSS for review and completion of Attachment 1.

5.2 Determining Drywell Equipment Drain Leakage

5.2.1 LOG test start time in the Control Room Narrative log.

5.2.2 Ensure that all prerequisites have been satisfied IAW Section 2.0 of this procedure.

5.2.3 Ensure Attachment 1, Section 1, of the SNSS/NSS Data Sheet has been completed and Regular Surveillance or Retest is indicated.

NOTE 5.2.4

If failure to read Drywell Equipment Drain Sump level at 1SKLI-4930 and 1SKLI-4930A was caused by power failure to the RM-80 Motherboard or failure of 1SKLT-4930, proceed to step 5.2.5.

5.2.4 Request I&C to connect a Keithley Model 197 Multimeter set to read milliamps DC or equivalent as follows:

CAUTION 5.2.4.1

The Action Pack Isolator is removed prior to connecting the Multimeter, as an accidental short circuit while disconnecting or connecting wiring may cause a failure of the Action Pack Isolator.

5.2.4.1 REMOVE A-2 Action Pack Isolator.

5.2.4.2 LIFT lead from 1SKLT-4930 //Drywell Equipment Drain Sump Level Transmitter// at terminal 1, TB4 and SIGN Attachment 2, Sheet 6.

5.2.4.3 CONNECT one input of multimeter to lifted lead and SIGN Attachment 2, Sheet 6.

5.2.4.4 CONNECT the other input of multimeter to terminal 1, TB4 and SIGN Attachment 2, Sheet 6.

NOTE 5.2.4.5

If multimeter indication is off scale high or low, NOTIFY SNSS/NSS that the Drywell Equipment Drain Sump level may be out of normal range or possible failure of 1SKLT-4930.

5.2.4.5 Ensure multimeter indicates between 4 and 20 milliamps.

5.2.4.6 INSERT A-2 Action Pack Isolator.

5.2.5 Request I&C to connect a Gould Model 2200S Chart Recorder or equivalent as follows:

5.2.5.1 CONNECT positive input of recorder to terminal 1, TB3 and SIGN Attachment 2, Sheet 6.

5.2.5.2 CONNECT negative input of recorder to terminal 2, TB3 and SIGN Attachment 2, Sheet 6.

5.2.5.3 SET recorder pin to center scale with a gain of 5 VDC per major division.

5.2.5.4 SET recorder chart speed at 5 mm/sec - 100.

5.2.6 DEPRESS START PB on //DRYWELL EQPT DRAIN SUMP AT267 pump// A(B)P267 (10C650D).

NOTE 5.2.7

The recorder pin will indicate 0 VDC when the Equipment Drain Sump Pump(s) is running and 5 VDC when the pump is not running.

5.2.7 Observe recorder pin indicates 0 VDC while pump is running.

5.2.8 Allow pump to stop automatically on low sump level.

5.2.9 RECORD on the chart, time, date and initials at point where pump stopped (chart should indicate 5 VDC).

5.2.10 RECORD Pump stop time, date and initials on Attachment 2, Sheet 4.

5.2.11 If multimeter is connected to read 1SKLT-4930 output, perform the following:

5.2.11.1 Observe milliamp indication on the multimeter and RECORD on Attachment 2, Sheet 5.

5.2.11.2 RECORD time, date and initials on Attachment 2, Sheet 5.

5.2.11.3 Using curve on Attachment 4, obtain Drywell Equipment Drain Sump volume (in gallons) by intersecting milliamp reading from step 5.2.11.1.

5.2.11.4 RECORD volume on Attachment 2, Sheet 5.

5.2.12 Each four hours thereafter, perform the following:

NOTE 5.2.12.1

The recorder pin will indicate 0 VDC when the Equipment Drain Sump Pump(s) is running and 5 VDC when the pump is not running.

5.2.12.1 Observe recorder chart for indication of one or more sump pumpouts in the last four hours.

5.2.12.2 If there were sump pumpouts, obtain pump start times and stop times from the chart by measurement from present time (7.1 inches/hr.) and RECORD on Attachment 2, Sheet 4.

5.2.12.3 RECORD differential times from the pump stops (auto shutdown) to the pump starts on Attachment 2, Sheet 4.

5.2.12.4 Using Equation on Attachment 2, Sheet 4, obtain and RECORD the inleakages. Time, date and initial.

5.2.12.5 If there were no pumpouts over the four hour period and multimeter is connected, perform the following:

a. Repeat step 5.2.11.

b. RECORD differential volume from the present volume reading to the previous volume reading on Attachment 2, Sheet 5.

c. RECORD differential time from the previous time reading to the present time reading on Attachment 2, Sheet 5.

d. Using Equation on Attachment 2, Sheet 5, obtain and RECORD inleakage.

5.2.12.6 If there were no pumpouts over the four hour period and multimeter is not connected, RECORD < 0.74 GPM inleakage, time, date and initials on Attachment 2, Sheet 4.

5.2.13 Record required leak rate readings from Attachments IAW OP-DL.ZZ-026(Q); Surveillance Log.

5.2.14 When the capability to obtain leak rate information from the RMS for the Drywell Equipment Drain System has returned, exit this procedure subsection.

5.2.15 If this is the final subsection of this procedure to be performed:

5.2.15.1 Request I&C to remove recorder and multimeter (if used) and return lifted lead to terminal 1, TB4.

5.2.15.2 VERIFY lifted lead was terminated to terminal 1, TB4 and INITIAL Attachment 2, Sheet 6, (I&C and OP).

5.2.15.3 LOG test end time in the Control Room Narrative log.

5.2.15.4 SUBMIT this procedure to the SNSS/NSS for review and completion of Attachment 1.

6.0 ATTACHMENT

6.1 Attachment 1, SNSS/NSS Data Sheet

6.2 Attachment 2, Inplant Data Sheet

6.3 Attachment 3, Floor Drain Sump Pumpdown Curve

6.4 Attachment 4, Drywell Equipment Drain Sump Curve

7.0 REFERENCES

7.1 P&ID: M-25-1, Sht. 1, Rev. 6
M-61-1, Sht. 1, Rev. 12
M-61-1, Sht. 2, Rev. 8

7.2 J-R 1000-0, Rev. 2

7.3 J-373Q-87-4

7.4 DCP: 4HM-0323
4HC-0074, Pkg. 5

ATTACHMENT 1
SNSS/NSS DATA SHEET
ALTERNATE RCS LEAKAGE DETERMINATION

1.0 PRETEST INFORMATION

1.1 Reason for the Test

1.1.1 Regular Surveillance _____ INITIALS

1.1.2 Retest _____ INITIALS

1.1.3 If not performing the complete test, list subsections to be performed. _____ SUBSECTIONS

1.2 Plant Conditions

1.2.1 Operational Condition _____

1.2.2 Reactor Power Level _____

1.2.3 MWe _____

1.3 Permission to Perform the Test

1.3.1 A review of SA-AP.ZZ-002(Q); Station Organization and Operating Practices for a list of systems requiring an independent verification has been completed. The SNSS/NSS has placed an N/A in the applicable space(s) on Attachment 2 and/or 3 which DO NOT require an independent verification. _____ SNSS/NSS

1.3.2 Permission granted to perform this test.

_____ _____/_____
SNSS/NSS DATE-TIME

1.3.3 Work Order No. _____

ATTACHMENT 1
SNSS/NSS DATA SHEET
ALTERNATE RCS LEAKAGE DETERMINATION

2.0 POST TEST INFORMATION

2.1 The data acquired during the performance of this test has been reviewed for completeness and compliance with Technical Specification _____ and the test is considered:

2.1.1 SATISFACTORY (All acceptance criteria is marked SAT)

_____/_____
SNSS/NSS DATE-TIME

2.1.2 UNSATISFACTORY and if necessary the T.S. ACTION statement has been implemented.

_____/_____
SNSS/NSS DATE-TIME

2.1.3 Work Order No. _____

2.1.4 Remarks _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

2.2 Responsible Reviewer

_____/_____
OPERATING ENGINEER DATE

ATTACHMENT 2
INPLANT DATA SHEET
ALTERNATE RCS LEAKAGE DETERMINATION

1.0 PROCEDURE PERFORMER(S)

1.1 I have read and understand the steps of this procedure. (All Departments)

PROCEDURE PERFORMER	/ INITIALS	DATE-TIME
PROCEDURE PERFORMER	/ INITIALS	DATE-TIME
PROCEDURE PERFORMER	/ INITIALS	DATE-TIME
PROCEDURE PERFORMER	/ INITIALS	DATE-TIME
PROCEDURE PERFORMER	/ INITIALS	DATE-TIME

1.2 I have read and understand the steps of the procedure. (All Departments)

PROCEDURE VERIFIER	/ INITIALS	DATE-TIME
PROCEDURE VERIFIER	/ INITIALS	DATE-TIME
PROCEDURE VERIFIER	/ INITIALS	DATE-TIME
PROCEDURE VERIFIER	/ INITIALS	DATE-TIME
PROCEDURE VERIFIER	/ INITIALS	DATE-TIME

2.0 TEST INFORMATION

NOTE 2.0

An independent verification shall be performed for all steps of this procedure listed below except those marked with a N/A in the VERIFIER space.

ATTACHMENT 2
INPLANT DATA SHEET
ALTERNATE RCS LEAKAGE DETERMINATION

2.1 Determining Drywell Floor Drain Leak Rate

Time	Pump Stop Time	Pump Start Time	Diff. Time (Minutes)	Inleakage (GPM)	Date	Initials

Pump Start at High Level Alarm

$$\frac{97.7 \text{ Gallons}}{\text{Diff. Minutes}} = \text{Inleakage (GPM)}$$

ATTACHMENT 2
INPLANT DATA SHEET
ALTERNATE RCS LEAKAGE DETERMINATION

2.1 Determining Drywell Floor Drain Leak Rate

Time	Milliamps	Diff. MA	Diff. Time (Minutes)	Inleakage (GPM)	Date	Initials

$$\frac{(\text{Diff. MA}) \times (24.409)}{\text{Diff. Time (Minutes)}} = \text{Inleakage (GPM)}$$

ATTACHMENT 2
INPLANT DATA SHEET
ALTERNATE RCS LEAKAGE DETERMINATION

2.2 Determining Drywell Equipment Drain Leak Rate

Time	Pump Stop Time	Pump Start Time	Diff. Time (Minutes)	Inleakage (GPM)	Date	Initials

Pump Start at High Level Alarm

$$\frac{178.4 \text{ Gallons}}{\text{Diff. Minutes}} \cdot \text{Inleakage (GPM)}$$

ATTACHMENT 2
ALTERNATE RCS LEAKAGE DETERMINATION
INPLANT DATA SHEET

2.2 Determining Drywell Equipment Drain Leak Rate

Time	Milliamps	Volume (Gallons)	Diff. Vol. (Gallons)	Diff. Time (Minutes)	Inleakage (GPM)	Date	Initials

$$\frac{\text{Diff. Volume (Gallons)}}{\text{Diff. Time (Minutes)}} = \text{Inleakage (GPM)}$$

ATTACHMENT 2
IN-PLANT DATA SHEET
ALTERNATE R.C.S LEAKAGE DETERMINATION

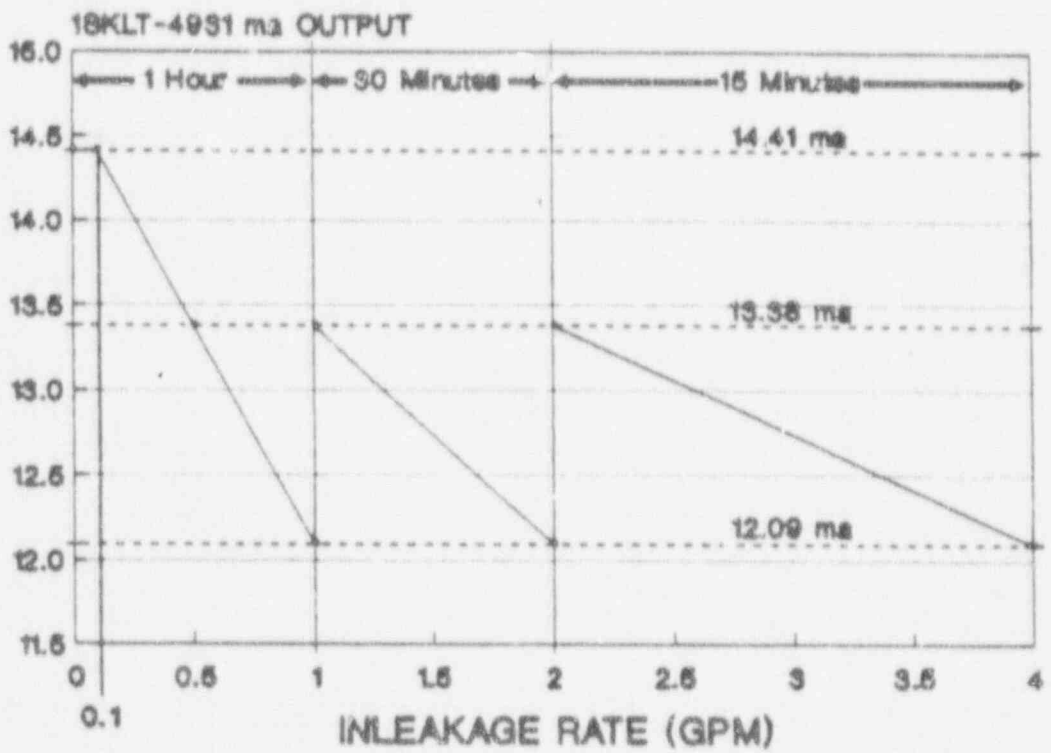
STEP	NOMENCLATURE	REQ. POSITION	PERFORMER	VERIFIER
5.1.4.2	Lifted Lead from Term. 4, TB4	Lifted		
5.1.4.3	Multimeter connected to Lead	Connected		
5.1.4.4	Multimeter connected to Term. 4, TB 4	Connected		
5.1.5.1	Input connected to Term. 7, TB3	Connected		
5.1.5.2	Input connected to Term. 8, TB3	Connected		
5.1.15.2	Lifted Lead from Term. 4, TB4	Terminated		
5.2.4.2	Lifted Lead from Term. 1, TB4	Lifted		
5.2.4.3	Multimeter connected to Lead	Connected		
5.2.4.4	Multimeter connected to Term. 1, TB4	Connected		
5.2.5.1	Input connected to Term. 1, TB3	Connected		
5.2.5.2	Input connected to Term. 2, TB3	Connected		
5.2.17.2	Lifted Lead from Term. 1, TB4	Terminated		

ATTACHMENT 3
1SKLT-4931 OUTPUT (MA)
FLOOR DRAIN SUMP PUMPDOWN CURVE

Time Intervals between obtaining Sump Level Readings and/or Indicated Sump Pump Out Intervals

Inleakage Flow Rate (GPM)	Time Interval
≤1.0	1 Hour
>1.0 but ≤2.0	30 Minutes
>2.0 but ≤4.0	15 Minutes

For >4.0 gpm, use Sump Pump Out Intervals and 15 minutes Observation Time Intervals.



Sump should be pumped down at or above the intersection of the current rate and MA output.

ATTACHMENT 4
1SKLT-4930 OUTPUT (Ma)
ALTERNATE RCS LEAKAGE DETERMINATION