

CONTAINMENT SYSTEMS

DRYWELL AND SUPPRESSION CHAMBER PURGE SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.1.8 The drywell and suppression chamber purge system may be in operation with the drywell and/or suppression chamber purge supply and exhaust butterfly isolation valves open for inerting, deinerting, or pressure control, ~~provided that each butterfly valve is blocked so as not to open more than 70°~~ <sup>Delete</sup> PURGING through the Standby Gas Treatment System shall be restricted to less than or equal to 90 hours per 365 days (SEE NOTE 1) <sup>Delete</sup>

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

- <sup>Delete</sup> a. With a drywell and/or suppression chamber purge supply and/or exhaust butterfly isolation valve open for other than inerting, deinerting, or pressure control, ~~or not blocked to less than or equal to 70°~~ <sup>Delete</sup> ~~open~~, close the butterfly valve(s) within 1 hour or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. <sup>0.05 L<sub>a</sub> per valve test, [insert from following page]</sup>
- b. With a drywell and suppression chamber purge supply and/or exhaust isolation valve(s) with resilient material seals having a measured leakage rate exceeding the limit of Surveillance Requirement 4.6.1.8.2, <sup>otherwise,</sup> restore the inoperable valve(s) to OPERABLE status within 24 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

~~4.6.1.8.1 When being opened, the drywell and suppression chamber purge supply and exhaust butterfly isolation valves shall be verified to be blocked so as to open to less than or equal to 70° open, unless so verified within the previous 31 days~~ <sup>Delete</sup>

<sup>4.6.1.8.1</sup> 4.6.1.8.2 At least once per 6 months, on a STAGGERED TEST BASIS, each 24- and 30-inch drywell and suppression chamber purge supply and exhaust isolation valve with resilient material shall be demonstrated OPERABLE by verifying that the measured leakage is:

- a. Less than or equal to 0.05 L<sub>a</sub> per valve test or, <sup>0.05 L<sub>a</sub> per valve test,</sup>
- b. Greater than ~~4.6.1.8.2.a. provided that: 1) the valves are secured closed and maintenance performed at the next plant cold shutdown to reduce the leakage to within 4.6.1.8.2.a; 2) the leakage added to the previously determined total for all valves and penetrations subject to Type B and C tests per LCO 3/4.6.1.2 shall be less than 0.6 L<sub>a</sub>,~~
- c. In the event the valves are to be operated, and 4.6.1.8.2.a. has been exceeded, a leakage test must be performed within 24 hours following operation, to ensure compliance with 0.6 L<sub>a</sub>.





Insert to Action Statement 3.6.1.8.b

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and the leakage added to the previously determined total for all valves and penetrations subject to Type B and C tests per LCO 3/4.6.1.2 is less than  $0.6 L_a$ , secure the valves in the closed position and perform maintenance at the next plant cold shutdown to reduce leakage to within 4.6.1.8.1.a,



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SURVEILLANCE REQUIREMENTS (Continued)

4.6.1.8.3 The cumulative time that the drywell and suppression chamber purge system has been in operation PURGING through the Standby Gas Treatment System shall be verified to be less than or equal to 90 hours per 365 days prior to use in this mode of operation (SEE NOTE 1).

4.6.1.8.2

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NOTE 1: For the period of time ending April 10, 1988 this value shall be 100 hours per 365 days.



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## CONTAINMENT SYSTEMS

### BASES

#### MSIV LEAKAGE CONTROL SYSTEM (Continued)

Design specifications require the system to accommodate a leak rate of five times the Technical Specification leakage allowed for the MSIVs while maintaining a negative pressure downstream of the MSIVs. The allowed leakage value per each valve is .11.5 scfm, or a total of 230 scfh (3.8 scfm). (a) When corrected for worst case pressure, temperature and humidity expected to be seen during surveillance testing conditions, the flow would never exceed an indicated value (uncorrected reading from local flow instrumentation) of 5 cfm. The 30 cfm acceptance criterion provides significant margin to this design basis requirement and provides a benchmark for evaluating long term blower performance. The Technical Specification limit for pressure of -17" H<sub>2</sub>O W.C. was also established based on a benchmark of the installed system performance capability. This -17" H<sub>2</sub>O W.C. provides assurance that the negative pressure criterion can be met.

#### 3/4.6.1.5 PRIMARY CONTAINMENT STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment steel vessel will be maintained comparable to the original design standards for the life of the unit. Structural integrity is required to ensure that the containment will withstand the maximum pressure of 34.7 psig in the event of a LOCA. A visual inspection in conjunction with Type A leakage tests is sufficient to demonstrate this capability.

#### 3/4.6.1.6 DRYWELL AND SUPPRESSION CHAMBER INTERNAL PRESSURE

The limitations on drywell and suppression chamber internal pressure ensure that the containment peak pressure of 34.7 psig does not exceed the design pressure of 45 psig during LOCA conditions or that the external pressure differential does not exceed the design maximum external pressure differential of 2 psid. The limit of 1.75 psig for initial positive containment pressure will limit the total pressure to 34.7 psig which is less than the design pressure and is consistent with the safety analysis.

#### 3/4.6.1.7 DRYWELL AVERAGE AIR TEMPERATURE

The limitation on drywell average air temperature ensures that the containment peak air temperature does not exceed the design temperature of 340°F during LOCA conditions and is consistent with the safety analysis.

#### 3/4.6.1.8 DRYWELL AND SUPPRESSION CHAMBER PURGE SYSTEM

~~The 24-inch and 30-inch drywell and suppression chamber purge supply and exhaust isolation valves are required to be sealed closed during plant operation since these valves have not been demonstrated capable of closing during a LOCA or steam line break accident. Maintaining these valves sealed closed during plant operations ensures that excessive quantities of radioactive materials will not be released via the purge system. To provide assurance that the 24-inch and 30-inch valves cannot be inadvertently opened, they are sealed closed in accordance with Standard Review Plan 6.2.4, which includes mechanical devices to seal or lock the valve closed or prevent power from being supplied to the valve operator.~~

Replace  
with  
following  
page.

- (a) Letter, G02-75-238, dated August 18, 1975, NO Strand (SS) to OD Parr (NRC), "Response to Request for Information Main Steam Isolation Valve Leakage Control System"

Proposed BASES change for Drywell and Suppression Chamber Purge System  
(replaces first paragraph of 3/4.6.1.8 on page B 3/4 6-2)

3/4.6.1.8 DRYWELL AND SUPPRESSION CHAMBER PURGE SYSTEM

The 24-inch and 30-inch drywell and suppression chamber purge supply and exhaust isolation valves are required to be closed during plant operation except as required for inerting, de-inerting and pressure control. Until all the drywell and suppression chamber valves have been qualified as capable of closing within the times assumed in the safety analysis, they shall not be open more than 90 hours in any consecutive 365 days. Valves not capable of closing from a full open position during a LOCA or steam line break accident shall be blocked so as not to open more than 70°.



1. The first part of the document is a list of names and addresses of the members of the committee.

2. The second part of the document is a list of names and addresses of the members of the committee.

DRYWELL AND SUPPRESSION CHAMBER PURGE SYSTEM (Continued)

<sup>(time limit on)</sup> The use of the drywell and suppression chamber purge lines is <sup>not</sup> restricted when using ~~to~~ the 2-inch purge supply and exhaust isolation valves since, ~~unlike the 24-inch and 30-inch valves,~~ the 2-inch valves will close during a LOCA or steam line break accident and therefore the SITE BOUNDARY dose guidelines of 10 CFR Part 100 would not be exceeded in the event of an accident during PURGING operations. The design of the 2-inch purge supply and exhaust isolation valves meets the requirements of Branch Technical Position CSB 6-4, "Containment Purging During Normal Plant Operations."

Leakage integrity tests with a maximum allowable leakage rate for purge supply and exhaust isolation valves will provide early indication of resilient material seal degradation and will allow the opportunity for repair before gross leakage failure develops. The 0.60 L<sub>a</sub> leakage limit shall not be exceeded when the leakage rates determined by the leakage integrity tests of those valves are added to the previously determined total for all valves and penetrations subject to Type B and C tests.

3/4.6.2. DEPRESSURIZATION SYSTEMS <sup>Values with metal to metal seals will be tested in a Type C schedule in accordance with Surveillance 4.6.1.2.d to assure allowable leakage rates are not exceeded.</sup>

The specifications of this section ensure that the primary containment pressure will not exceed the design pressure of 45 psig during primary system blowdown from full operating pressure.

The suppression chamber water provides the heat sink for the reactor coolant system energy release following a postulated rupture of the system. The suppression chamber water volume must absorb the associated decay and structural sensible heat released during reactor coolant system blowdown from 1020 psig. Since all of the gases in the drywell are purged into the suppression chamber air space during a loss-of-coolant accident, the pressure of the liquid must not exceed 45 psig, the suppression chamber maximum pressure. The design volume of the suppression chamber, water and air, was obtained by considering that the total volume of reactor coolant and to be considered is discharged to the suppression chamber and that the drywell volume is purged to the suppression chamber.

Using the minimum or maximum water volumes given in this specification, containment pressure during the design basis accident is approximately 34.7 psig which is below the design pressure of 45 psig. Maximum water volume of 128,827 ft<sup>3</sup> results in a downcomer submergence of 12 ft and the minimum volume of 127,197 ft<sup>3</sup> results in a submergence approximately 4 inches less. The majority of the Bodega tests were run with a submerged length of 4 feet and with complete condensation. Thus, with respect to the downcomer submergence, this specification is adequate. The maximum temperature at the end of the blowdown tested during the Humboldt Bay and Bodega Bay tests was 170°F and this is conservatively taken to be the limit for complete condensation of the reactor coolant, although condensation would occur for temperatures above 170°F.

