

ENCLOSURE 5 TO SERIAL: HNP-98-091

SHEARON HARRIS NUCLEAR POWER PLANT  
DOCKET NO. 50-400/LICENSE NO. NPF-63  
REQUEST FOR LICENSE AMENDMENT  
TECHNICAL SPECIFICATIONS 3/4.6.1.3

TECHNICAL SPECIFICATION PAGES

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## CONTAINMENT SYSTEMS

### CONTAINMENT AIR LOCKS

#### LIMITING CONDITION FOR OPERATION

Two  
3.6.1.3 Each containment air lock shall be OPERABLE with:

- a. ~~Both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed, and~~
- b. ~~An overall air lock leakage rate of less than or equal to  $0.05 L_a$  at  $P_a$ .~~

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

#### ACTION:

← Insert 'A'

- a. → With one containment air lock door inoperable: #

One or more  
Containment air  
locks

1. Maintain at least the OPERABLE air lock door closed\* and either restore the inoperable air lock door to OPERABLE status within 24 hours or lock the OPERABLE air lock door closed;
  2. Operation may then continue until performance of the next required overall air lock leakage test provided that the OPERABLE air lock door is verified to be locked closed at least once per 31 days;
  - 4X. Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; and
  - 5X. The provisions of Specification 3.0.4 are not applicable.
- With the containment air lock inoperable, except as the result of an inoperable air lock door, maintain at least one air lock door closed; restore the inoperable air lock to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Insert  
'B'

Insert  
'C'

Insert 'D'

~~Except during entry to repair an inoperable inner door, for a cumulative time not to exceed one hour per year.~~

## CONTAINMENT SYSTEMS

### CONTAINMENT AIR LOCKS

#### SURVEILLANCE REQUIREMENTS

4.6.1.3 Each containment air lock shall be demonstrated OPERABLE: <sup>by</sup>

- Insert  
E
- a. Within 72 hours following each closing, except when the air lock is being used for multiple entries, then at least once per 72 hours, by verifying seal leakage is less than  $0.01 L_a$  as determined by precision flow measurements when measured for at least 30 seconds with the volume between the seals at a constant pressure of 41 psig;
  - b. By conducting overall air lock leakage tests at not less than  $P_a$ , and verifying the overall air lock leakage rate is within its limit:
    1. At least once per 6 months,\* and
    2. Prior to establishing CONTAINMENT INTEGRITY when maintenance has been performed on the air lock that could affect the air lock sealing capability.\*\*
  - b.c. At least once per 6 months by verifying that only one door in each air lock can be opened at a time.\*\*

Insert  
F

\*The provisions of Specification 4.0.2 are not applicable.

\*\*This represents an exemption to Appendix J, paragraph III, 0.2 of 10 CFR Part 50.

Insert "A"

----- Notes -----

1. Entry and exit is permissible to perform repairs on the affected air lock components.
  2. A separate ACTION is allowed for each air lock.
  3. Enter 3.6.1.1 LCO for "Containment Integrity" when the air lock leakage results in exceeding the overall containment leakage rate, Specification 3.6.1.2.a.
  4. Locking a Personnel Air Lock door shut consists of locking the associated manual pumping stations and deactivating the electronic mechanisms used to open a Personnel Air lock door once the associated air lock door is shut. Locking an Emergency Air Lock doors shut consists of locking the mechanical operator.
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Insert "B"

1. Within one hour, verify the OPERABLE door is closed in the affected air lock, and
2. Within 24 hours, lock the OPERABLE door closed in the affected air lock, and
3. Once per 31 days, verify the OPERABLE door is locked closed in the affected air lock\*, or



Insert "C"

- # 1 - ACTIONS 3.6.1.3.a.1, 3.6.1.3.a.2, 3.6.1.3.a.3, and 3.6.1.3.a.4 are not applicable if both doors in the same air lock are inoperable and ACTION 3.6.1.3.c is entered.
- 2.- Entry and exit is permissible for 7 days under administrative controls if both air locks are inoperable.
- \* Air lock doors in high radiation areas may be verified closed by administrative means.

Insert "D"

- b. One or more containment air locks with containment air lock interlock mechanism inoperable.##
  - 1. Within one hour, verify an OPERABLE door is closed in the affected air lock, and
  - 2. Within 24 hours, lock an OPERABLE door closed in the affected air lock, and
  - 3. Once per 31 days, verify the OPERABLE door is locked closed in the affected air lock\*, or
  - 4. Otherwise, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
  - 5. Provisions of Specification 3.0.4 are not applicable.
- c. One or more containment air locks inoperable for reasons other than 3.6.1.3.a or 3.6.1.3.b.
  - 1. Immediately initiate action to evaluate overall containment leakage rate per LCO 3.6.1.2, and
  - 2. Within one hour, verify a door is closed in the affected air lock, and
  - 3. Within 24 hours, restore air lock to OPERABLE status, or
  - 4. Otherwise be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

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- ## 1. - ACTIONS 3.6.1.3.b.1, 3.6.1.3.b.2, 3.6.1.3.b.3, and 3.6.1.3.b.4 are not applicable if both doors in the same air lock are inoperable and ACTION 3.6.1.3.c is entered.
- 2.- Entry and exit of containment is permissible under the control of a dedicated individual.

\* Air lock doors in high radiation areas may be verified closed by administrative means.



Insert "E"

- a. Performing required air lock leakage rate testing in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions ###. The acceptance criteria for air lock testing are:
  1. Overall air lock leakage rate is  $\leq .05$  La when tested at  $\geq$  Pa.
  2. For each door, leakage rate is  $\leq .01$  La when tested at  $\geq$  41 psig.

Insert "F"

- ###
1. An inoperable air lock door does not invalidate the previous successful performance of the overall airlock leakage test.
  2. Results shall be evaluated against Specification 3.6.1.2.a in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions.
- \*\*
- Only required to be performed upon entry or exit through the containment air lock. (If Surveillance Requirement 4.6.1.3.b has not been performed in the last 6 months, then perform Surveillance Requirement 4.6.1.3.b during the next containment entry through the associated air lock.)

## 3/4.6 CONTAINMENT SYSTEMS

### BASES

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#### 3/4.6.1 PRIMARY CONTAINMENT

##### 3/4.6.1.1 CONTAINMENT INTEGRITY

Primary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with the leakage rate limitation, will limit the SITE BOUNDARY radiation doses to within the dose guideline values of 10 CFR Part 100 during accident conditions.

##### 3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the safety analyses at the peak accident pressure,  $P_a$ . As an added conservatism, the measured overall integrated leakage rate is further limited to less than or equal to 0.75  $L_a$  during performance of the periodic test, to account for possible degradation of the containment leakage barriers between leakage tests.

The surveillance testing for measuring leakage rates is consistent with the requirements of Appendix J of 10 CFR Part 50.

A one time extension of the test interval specified in Surveillance Requirement 4.6.1.2.a is allowed for performance of the third Type A test of the first 10-year service period during Refueling Outage No. 7.

##### 3/4.6.1.3 CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the containment air locks are required to meet the restrictions on CONTAINMENT INTEGRITY and containment leak rate. Surveillance testing of the air lock seals provides assurance that the overall air lock leakage will not become excessive due to seal damage during the intervals between air lock leakage tests.

Insert 6 —>

##### 3/4.6.1.4 INTERNAL PRESSURE

The limitations on containment internal pressure ensure that: (1) the containment structure is prevented from exceeding its design negative pressure differential with respect to the outside atmosphere of -2 psig, and (2) the containment peak pressure does not exceed the design pressure of 45 psig.

The maximum peak pressure expected to be obtained from a postulated main steam line break event is 41.2 psig using a value of 1.9 psig for initial positive containment pressure. However, since the instrument tolerance for containment pressure is 1.32 psig and the high-one setpoint is 3.0 psig, the pressure limit was reduced from the high-one setpoint by slightly more than the tolerance and was set at 1.6 psig. This value will prevent spurious safety injection signals caused by instrument drift during normal operation. The -1" wg was chosen to be consistent with the initial assumptions of the accident analyses.

## Insert "G" in Bases

Action statement "a" has been modified by a note. The note allows use of the air lock for entry and exit for seven days under administrative controls if both air locks have an inoperable door. This seven day restriction begins when a door in the second air lock is discovered to be inoperable. Containment entry may be required to perform Technical Specification surveillances and actions, as well as other activities on equipment inside containment that are required by Technical Specifications (TS) or other activities that support TS required equipment. In addition, containment entry may be required to perform repairs on vital plant equipment, which if not repaired, could lead to a plant transient or a reactor trip. This note is not intended to preclude performing other activities (i.e., non-TS required activities or repairs on non-vital plant equipment) if the containment is entered, using the inoperable air lock, to perform an allowed activity listed above. This allowance is acceptable due to the low probability of an event that could pressurize containment during the short time that an OPERABLE door is expected to be open.

Maintaining containment air locks OPERABLE requires compliance with the leakage rate test requirements of 10 CFR 50, Appendix J, as modified by approved exemptions. HNP has an approved exemption to Appendix J Option A, paragraph III.D.2 of 10 CFR 50 in that the Overall air lock leakage test is required to be performed if maintenance has been performed that could affect the air lock sealing capability prior to establishing CONTAINMENT INTEGRITY. This is in contrast to the Appendix J requirement if air locks are opened during periods when containment integrity is not required by the plant's Technical Specifications shall be tested at the end of such periods.

CONTAINMENT SYSTEMS

CONTAINMENT AIR LOCKS

LIMITING CONDITION FOR OPERATION

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3.6.1.3 Two containment air locks shall be OPERABLE:

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

ACTION:

..... Notes .....

1. Entry and exit is permissible to perform repairs on the affected air lock components.
2. A separate ACTION is allowed for each air lock.
3. Enter 3.6.1.1 LCO for "Containment Integrity" when the air lock leakage results in exceeding the overall containment leakage rate, Specification 3.6.1.2.a.
4. Locking a Personnel Air Lock door shut consists of locking the associated manual pumping stations and deactivating the electronic mechanisms used to open a Personnel Air Lock door once the associated air lock door is shut. Locking an Emergency Air Lock door shut consists of locking the mechanical operator.

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a. One or more containment air locks with one containment air lock door inoperable:#

1. Within one hour, verify the OPERABLE door is closed in the affected air lock, and
2. Within 24 hours, lock the OPERABLE door closed in the affected air lock, and
3. Once per 31 days, verify the OPERABLE door is locked closed in the affected air lock\*, or
4. Otherwise, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
5. Provisions of Specification 3.0.4 are not applicable.

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# 1. ACTIONS 3.6.1.3.a.1, 3.6.1.3.a.2, 3.6.1.3.a.3, and 3.6.1.3.a.4 are not applicable if both doors in the same air lock are inoperable and ACTION 3.6.1.3.c is entered.

2. Entry and exit is permissible for 7 days under administrative controls if both air locks are inoperable.

\* Air lock doors in high radiation areas may be verified closed by administrative means.

## CONTAINMENT SYSTEMS

### CONTAINMENT AIR LOCKS

#### LIMITING CONDITION FOR OPERATION

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- b. One or more containment air locks with containment air lock interlock mechanism inoperable.##
  - 1. Within one hour, verify an OPERABLE door is closed in the affected air lock, and
  - 2. Within 24 hours, lock an OPERABLE door closed in the affected air lock, and
  - 3. Once per 31 days, verify the OPERABLE door is locked closed in the affected air lock\*, or
  - 4. Otherwise, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
  - 5. Provisions of Specification 3.0.4 are not applicable.
- c. One or more containment air locks inoperable for reasons other than 3.6.1.3.a or 3.6.1.3.b.
  - 1. Immediately initiate action to evaluate overall containment leakage rate per LCO 3.6.1.2, and
  - 2. Within one hour, verify a door is closed in the affected air lock, and
  - 3. Within 24 hours, restore air lock to OPERABLE status, or
  - 4. Otherwise be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

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- ## 1. ACTIONS 3.6.1.3.b.1, 3.6.1.3.b.2, 3.6.1.3.b.3, and 3.6.1.3.b.4 are not applicable if both doors in the same air lock are inoperable and ACTION 3.6.1.3.c is entered.
2. Entry and exit of containment is permissible under the control of a dedicated individual.

\* Air lock doors in high radiation areas may be verified closed by administrative means.

## CONTAINMENT SYSTEMS

### CONTAINMENT AIR LOCKS

#### SURVEILLANCE REQUIREMENTS

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4.6.1.3 Each containment air lock shall be demonstrated OPERABLE by:

- a. Performing required air lock leakage rate testing in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions###. The acceptance criteria for air lock testing are:
  1. Overall air lock leakage rate is  $\leq .05$  La when tested at  $\geq$  Pa.
  2. For each door, leakage rate is  $\leq .01$  La when tested at  $\geq 41$  psig.
- b. At least once per 6 months by verifying that only one door in the air lock can be opened at a time\*\*.

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- ### 1. An inoperable air lock door does not invalidate the previous successful performance of the overall airlock leakage test.
2. Results shall be evaluated against Specification 3.6.1.2.a in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions.

\*\* Only required to be performed upon entry or exit through the containment air lock. (If Surveillance Requirement 4.6.1.3.b has not been performed in the last 6 months, then perform Surveillance Requirement 4.6.1.3.b during the next containment entry through the associated air lock.)

### 3/4.6 CONTAINMENT SYSTEMS

#### BASES

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#### 3/4.6.1 PRIMARY CONTAINMENT

##### 3/4.6.1.1 CONTAINMENT INTEGRITY

Primary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with the leakage rate limitation, will limit the SITE BOUNDARY radiation doses to within the dose guideline values of 10 CFR Part 100 during accident conditions.

##### 3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the safety analyses at the peak accident pressure,  $P_a$ . As an added conservatism, the measured overall integrated leakage rate is further limited to less than or equal to  $0.75 L_a$ , during performance of the periodic test, to account for possible degradation of the containment leakage barriers between leakage tests.

The surveillance testing for measuring leakage rates is consistent with the requirements of Appendix J of 10 CFR Part 50.

A one time extension of the test interval specified in Surveillance Requirement 4.6.1.2.a is allowed for performance of the third Type A test of the first 10-year service period during Refueling Outage No. 7.

##### 3/4.6.1.3 CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the containment air locks are required to meet the restrictions on CONTAINMENT INTEGRITY and containment leak rate. Surveillance testing of the air lock seals provides assurance that the overall air lock leakage will not become excessive due to seal damage during the intervals between air lock leakage tests.

Action statement "a" has been modified by a note. The note allows use of the air lock for entry and exit for seven days under administrative controls if both air locks have an inoperable door. This seven day restriction begins when a door in the second air lock is discovered to be inoperable. Containment entry may be required to perform Technical Specification surveillances and actions, as well as other activities on equipment inside containment that are required by Technical Specifications (TS) or other activities that support TS required equipment. In addition, containment entry may be required to perform repairs on vital plant equipment, which if not repaired, could lead to a plant transient or a reactor trip. This note is not intended to preclude performing other activities (i.e., non-TS required activities or repairs on non-vital plant equipment) if the containment is entered, using the inoperable air lock, to perform an allowed activity listed above. This allowance is acceptable due to the low probability of an event that could pressurize containment during the short time that an OPERABLE door is expected to be open.



### 3/4.6 CONTAINMENT SYSTEMS

#### BASES

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#### CONTAINMENT AIR LOCKS (Continued)

Maintaining containment air locks OPERABLE requires compliance with the leakage rate test requirements of 10 CFR 50, Appendix J, as modified by approved exemptions. HNP has an approved exemption to Appendix J Option A, paragraph III.D.2 of 10 CFR 50 in that the Overall air lock leakage test is required to be performed if maintenance has been performed that could affect the air lock sealing capability prior to establishing CONTAINMENT INTEGRITY. This is in contrast to the Appendix J requirement if air locks are opened during periods when containment integrity is not required by the plant's Technical Specifications shall be tested at the end of such periods.

#### 3/4.6.1.4 INTERNAL PRESSURE

The limitations on containment internal pressure ensure that: (1) the containment structure is prevented from exceeding its design negative pressure differential with respect to the outside atmosphere of -2 psig, and (2) the containment peak pressure does not exceed the design pressure of 45 psig.

The maximum peak pressure expected to be obtained from a postulated main steam line break event is 41.2 psig using a value of 1.9 psig for initial positive containment pressure. However, since the instrument tolerance for containment pressure is 1.32 psig and the high-one setpoint is 3.0 psig, the pressure limit was reduced from the high-one setpoint by slightly more than the tolerance and was set at 1.6 psig. This value will prevent spurious safety injection signals caused by instrument drift during normal operation. The -1" wg was chosen to be consistent with the initial assumptions of the accident analyses.

