ENCLOSURE 2

VOLUME 11

ST. LUCIE PLANT
UNIT 1 AND UNIT 2

IMPROVED TECHNICAL SPECIFICATIONS CONVERSION

ITS SECTION 3.6
CONTAINMENT SYSTEMS

Revision 0

LIST OF ATTACHMENTS

1. ITS 3.6.1, Containment
2. ITS 3.6.2, Containment Air Locks
3. ITS 3.6.3, Containment Isolation Valves
4. ITS 3.6.4, Containment Pressure
5. ITS 3.6.5, Containment Air Temperature
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11. ISTS Not Adopted

ATTACHMENT 1

ITS 3.6.1, CONTAINMENT

Current Technical Specifications (CTS) Markup and Discussion of Changes (DOCs)

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 CONTAINMENT ~~VESSEL~~

A02

CONTAINMENT ~~VESSEL INTEGRITY~~

LIMITING CONDITION FOR OPERATION

LCO 3.6.1 3.6.1.1 ~~CONTAINMENT VESSEL INTEGRITY~~ Containment shall be ~~maintained~~ OPERABLE.

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

A02

ACTION:

ACTION A ~~Without CONTAINMENT VESSEL INTEGRITY,~~ Containment inoperable. restore ~~CONTAINMENT VESSEL INTEGRITY~~ containment to OPERABLE status. within one hour or be in ~~at least HOT STANDBY~~ MODE 3 within the next 6 hours and in ~~COLD~~

ACTION B ~~SHUTDOWN~~ MODE 5 within the following 30 hours.

A01

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1 4.6.1.1 ~~CONTAINMENT VESSEL INTEGRITY shall be demonstrated:~~ Insert 1

A02 A04

a. In accordance with the Surveillance Frequency Control Program by verifying that:

SR 3.6.3.2
SR 3.6.3.3

1. All containment vessel penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except for valves that are open on an intermittent basis under administrative control, and

See ITS 3.6.3

~~2. All containment vessel equipment hatches are closed and sealed.~~

LA02

b. By verifying that each containment vessel air lock is OPERABLE per Specification 3.6.1.3

See ITS 3.6.2

* Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

See ITS 3.6.3

INSERT 1 A02 A04

Perform required visual examinations and leakage rate testing except for containment air lock and secondary containment bypass leakage testing, in accordance with the Containment Leakage Rate Testing Program.

CONTAINMENT SYSTEMS

CONTAINMENT ~~LEAKAGE~~

LIMITING CONDITION FOR OPERATION

~~3.6.1.2~~ ~~Containment leakage rates shall be limited in accordance with the Containment Leakage Rate Testing Program.~~

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

ACTION:

~~With the containment leakage rate exceeding the acceptance criteria of the Containment Leakage Rate Testing Program, within 1 hour initiate action to be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore the overall leakage rate to less than that specified by the Containment Leakage Rate Testing Program prior to increasing the Reactor Coolant System temperature above 200°F.~~

A02

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1 4.6.1.2 The containment leakage rates shall be demonstrated at the required test schedule and shall be determined in conformance with the criteria specified in the Containment Leakage Rate Testing Program, except for containment air lock and secondary containment bypass leakage testing.

A04

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (continued)

~~Pages 3/4 6-4 through 3/4 6-9 have been DELETED~~.

~~Page 3/4 6-10 is the next valid page.~~

CONTAINMENT SYSTEMS

CONTAINMENT ~~VESSEL STRUCTURAL INTEGRITY~~

LIMITING CONDITION FOR OPERATION

~~3.6.1.6 The structural integrity of the containment vessel shall be maintained at a level consistent with the acceptance criteria in Specification 4.6.1.6.~~

A02

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

ACTION:

~~With the structural integrity of the containment vessel not conforming to the above requirements, restore the structural integrity to within the limits prior to increasing the Reactor Coolant System temperature above 200°F.~~

A03

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1 4.6.1.6 The structural integrity of the containment vessel shall be determined, in accordance with the C ~~c~~ontainment Leakage Rate Testing Program, by a visual inspection ~~of the accessible interior and exterior surfaces of the vessel and verifying no apparent changes in appearance of the surfaces or other abnormal degradation~~.

LA01

DEFINITIONS

CHANNEL FUNCTIONAL TEST

1.6 A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated signal into the channel as close to the primary sensor as practicable to verify OPERABILITY including alarm and/or trip functions.

See ITS Chapter 1.0

~~**CONTAINMENT VESSEL INTEGRITY**~~

~~1.7 CONTAINMENT VESSEL INTEGRITY shall exist when:~~

~~a. All containment vessel penetrations required to be closed during accident conditions are either:~~

~~1. Capable of being closed by an OPERABLE containment automatic isolation valve system, or~~

~~2. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed position except for valves that are open on an intermittent basis under administrative control.~~

See ITS Chapter 3.6.3

~~b. All containment vessel equipment hatches are closed and sealed,~~

LA02

~~c. Each containment vessel air lock is in compliance with the requirements of Specification 3.6.1.3,~~

See ITS Chapter 3.6.2

SR 3.6.1.1 d. The containment leakage rates are within the limits of Specification 3.6.1.2, and

~~e. The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.~~

LA02

CONTROLLED LEAKAGE

1.8 CONTROLLED LEAKAGE shall be the seal water flow supplied from the reactor coolant pump seals.

CORE ALTERATION

1.9 CORE ALTERATION shall be the movement or manipulation of any fuel, sources, reactivity control components, or other components affecting reactivity within the reactor vessel with the vessel head removed and fuel in the vessel. Exceptions to the above include shared (4 fingered) control element assemblies (CEAs) withdrawn into the upper guide structure (UGS) or evolutions performed with the UGS in place such as CEA latching/unlatching or verification of latching/unlatching which do not constitute a CORE ALTERATION. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

See ITS Chapter 1.0

CORE OPERATING LIMITS REPORT (COLR)

1.9a THE COLR is the unit-specific document that provides cycle specific parameter limits for the current operating reload cycle. These cycle-specific parameter limits shall be determined for each reload cycle in accordance with Specification 6.9.1.11. Plant operation within these limits is addressed in individual Specifications.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 ~~PRIMARY~~ CONTAINMENT

CONTAINMENT ~~INTEGRITY~~

A02

LIMITING CONDITION FOR OPERATION

LCO 3.6.1 3.6.1.1 ~~Primary CONTAINMENT INTEGRITY~~ Containment shall be ~~maintained~~ OPERABLE.

Applicability **APPLICABILITY:** MODES 1~~*~~, 2~~*~~, 3, and 4. LA03

ACTION:

ACTION A
ACTION B

~~Without primary CONTAINMENT INTEGRITY,~~ Containment inoperable. restore ~~CONTAINMENT INTEGRITY~~ containment to OPERABLE status. within 1 hour or be in ~~at least HOT STANDBY~~ MODE 3 within the next 6 hours and in ~~COLD SHUTDOWN~~ MODE 5 within the following 30 hours.

A02
A01

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1 4.6.1.1 ~~Primary CONTAINMENT INTEGRITY shall be demonstrated:~~ Insert 1

A02
A04

SR 3.6.3.2
SR 3.6.3.3

a. In accordance with the Surveillance Frequency Control Program by verifying that all penetrations** not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except for valves that are open on an intermittent basis under administrative control.

See ITS 3.6.3

b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3.

See ITS 3.6.2

~~*~~ ~~In MODES 1 and 2, the RCB polar crane shall be rendered inoperable by locking the power supply breaker open.~~

LA03

** Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

See ITS 3.6.3

INSERT 1 A02 A04

Perform required visual examinations and leakage rate testing except for containment air lock and secondary containment bypass leakage testing, in accordance with the Containment Leakage Rate Testing Program.

CONTAINMENT SYSTEMS

CONTAINMENT ~~LEAKAGE~~

LIMITING CONDITION FOR OPERATION

~~3.6.1.2 Containment leakage rates shall be limited in accordance with the Containment Leakage Rate Testing Program.~~

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

ACTION:

~~With the containment leakage rate exceeding the acceptance criteria of the Containment Leakage Rate Testing Program, within 1 hour initiate action to be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore the overall leakage rate to less than that specified by the Containment Leakage Rate Testing Program, prior to increasing the Reactor Coolant System temperature above 200°F.~~

A02

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1 4.6.1.2 The containment leakage rates shall be demonstrated at the required test schedule and shall be determined in conformance with the criteria specified in the Containment Leakage Rate Testing Program except for containment air lock and secondary containment bypass leakage testing.

A04

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (continued)

~~Pages 3/4 6-4 through 3/4 6-8 have been DELETED.~~

~~Page 3/4 6-9 is the next valid page.~~

CONTAINMENT SYSTEMS

CONTAINMENT ~~VESSEL STRUCTURAL INTEGRITY~~

LIMITING CONDITION FOR OPERATION

A02

~~3.6.1.6 The structural integrity of the containment vessel shall be maintained at a level consistent with the acceptance criteria in Surveillance Requirement 4.6.1.6.~~

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

ACTION:

~~With the structural integrity of the containment vessel not conforming to the above requirements, restore the structural integrity to within the limits prior to increasing the Reactor Coolant System temperature above 200°F.~~ A03

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1 4.6.1.6 The structural integrity of the containment ~~-~~vessel shall be determined in accordance with the Containment Leak Rate Testing Program by a visual inspection ~~of the exposed accessible interior and exterior surfaces of the vessel and verifying no apparent changes in appearance of the surfaces or other abnormal degradation~~. LA01

DEFINITIONS

CHANNEL FUNCTIONAL TEST

1.6 A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated signal into the channel as close to the primary sensor as practicable to verify OPERABILITY including alarm and/or trip functions.

See ITS Chapter 1.0

~~CONTAINMENT VESSEL INTEGRITY~~

~~1.7 CONTAINMENT VESSEL INTEGRITY shall exist when:~~

See ITS Chapter 3.6.3

~~a. All containment vessel penetrations required to be closed during accident conditions are either:~~

~~1. Capable of being closed by an OPERABLE containment automatic isolation valve system, or~~

~~2. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open on an intermittent basis under administrative control.~~

~~b. All containment vessel equipment hatches are closed and sealed,~~ LA02

~~c. Each containment vessel air lock is in compliance with the requirements of Specification 3.6.1.3,~~ See ITS Chapter 3.6.2

SR 3.6.1.1 d. The containment leakage rates are within the limits of Specification 3.6.1.2, and

~~e. The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.~~

LA02

CONTROLLED LEAKAGE

1.8 CONTROLLED LEAKAGE shall be the seal water flow supplied from the reactor coolant pump seals.

CORE ALTERATION

1.9 CORE ALTERATION shall be the movement or manipulation of any fuel, sources, reactivity control components, or other components affecting reactivity within the reactor vessel with the vessel head removed and fuel in the vessel. Exceptions to the above include evolutions performed with the upper guide structure (UGS) in place such as control element assembly (CEA) latching/unlatching or verification of latching/unlatching which do not constitute a CORE ALTERATION. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

See ITS Chapter 1.0

CORE OPERATING LIMITS REPORT (COLR)

1.9a THE COLR is the unit-specific document that provides cycle specific parameter limits for the current operating reload cycle. These cycle-specific parameter limits shall be determined for each reload cycle in accordance with Specification 6.9.1.11. Plant operation within these limits is addressed in individual Specifications.

ADMINISTRATIVE CHANGES

A01 In the conversion of the St. Lucie Plant (PSL) Unit 1 and Unit 2 Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG - 1432, Rev. 5.0, "Standard Technical Specifications – Combustion Engineering Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 Unit 1 CTS 3/4.6.1 requires CONTAINMENT VESSEL INTEGRITY. CTS 3.6.1.1 states "CONTAINMENT VESSEL INTEGRITY shall be maintained." Unit 1 CTS 3.6.1.1 ACTION requires, in part, "without CONTAINMENT VESSEL INTEGRITY to restore CONTAINMENT VESSEL INTEGRITY within one hour."

Unit 2 CTS 3/4.6.1 requires PRIMARY CONTAINMENT INTEGRITY. Unit 2 CTS 3.6.1.1 states "Primary CONTAINMENT INTEGRITY shall be maintained." Unit 2 CTS 3.6.1.1 ACTION requires, in part, without primary CONTAINMENT INTEGRITY to restore CONTAINMENT INTEGRITY within 1 hour."

Unit 1 and 2 CTS 4.6.1.2 require containment leakage rates to be demonstrated at the required test schedule and in conformance with Containment Leakage Rate Testing Program criteria. Unit 1 and 2 CTS 3.6.1.2 require containment leakage rates be limited in accordance with the Containment Leakage Rate Testing Program.

Unit 1 CTS 4.6.1.6 requires CONTAINMENT VESSEL STRUCTURAL INTEGRITY to be demonstrated by performance of a visual inspection in accordance with the Containment Leak Rate Testing Program. Unit 2 CTS 4.6.1.6 requires the structural integrity of the containment vessel be determined in accordance with the Containment Leak Rate Testing Program by a visual inspection. CTS 3.6.1.6 requires the structural integrity of the containment to be maintained within specified parameters.

ITS 3.6.1 is the containment specification. ITS LCO 3.6.1 requires the containment to be OPERABLE. ITS 3.6.1 ACTION A requires when containment is inoperable to restore the containment to OPERABLE status within 1 hour. ITS SR 3.6.1.1 requires performance of a visual examination and leak rate testing in accordance with the Containment Leak Rate Testing Program, with an exception for the containment air lock and secondary containment bypass leakage testing.

This changes the Unit 1 and 2 CTS by replacing the specific CONTAINMENT VESSEL INTEGRITY definition and all references to it with the requirement for Containment OPERABILITY. Additionally, it changes the Unit 1 and Unit 2 CTS by combining CTS 3.6.1.1, CTS 3.6.1.2, and CTS 3.6.1.6 into one specification.

The purpose of CTS 3.6.1.1, CTS 3.6.1.2 and CTS 3.6.1.6 is to provide requirements pertaining to containment OPERABILITY. This portion of the change (combining CTS 3.6.1.1, CTS 3.6.1.2 and 3.6.1.6) is acceptable because moving these requirements into one LCO, ITS LCO 3.6.1, centralizes the requirements. The Unit 1 CTS 3/4.6.1 references to CONTAINMENT VESSEL INTEGRITY and the Unit 2 CTS 3/4.6.1 reference to primary CONTAINMENT INTEGRITY have been deleted because the CTS definition of CONTAINMENT VESSEL INTEGRITY in CTS 1.7 is incorporated into ITS 3.6.1, 3.6.2 and 3.6.3 and is no longer maintained as a separate definition in the ITS. ITS 3.6.1 requires that the containment shall be OPERABLE. The definition of OPERABLE and the subsequent ITS 3.6.1 LCO, ACTIONS, and Surveillance Requirements are sufficient to encompass the applicable requirements of the CTS definition. This change removes any confusion that may exist between the definition and the specific requirements of the LCO and is a presentation preference consistent with NUREG-1432, Rev. 5.0. Because the aspects of the CONTAINMENT VESSEL INTEGRITY definition requirements, along with the remainder of the LCOs in the Containment Systems Primary Containment section (i.e., air locks and containment isolation valves), are maintained in subsequent Specifications of ITS, this change is considered acceptable. This change is designated as administrative because it does not result in technical changes to the CTS.

A03 CTS 3.6.1.6, ACTION, states, "With the structural integrity of the containment vessel not conforming to the above requirements, restore the structural integrity to within the limits prior to increasing the Reactor Coolant System temperature above 200°F." CTS 3.6.1.6 ACTION does not state what action to take if the structural integrity limits are not met while in MODE 1, 2, 3, or 4. Thus, entry into CTS 3.0.3 is required if CTS 3.6.1.6 is not met while in MODE 1, 2, 3, or 4. CTS 3.0.3 allows 1 hour to prepare for a shutdown and requires the unit to be in HOT STANDBY (ITS MODE 3) within the next 6 hours, HOT SHUTDOWN (ITS MODE 4) within the following 6 hours, and Cold Shutdown (similar to ITS MODE 5) within the subsequent 24 hours (37 hours total). ITS 3.6.1 ACTION A requires that if the containment is inoperable, it must be restored to OPERABLE status within 1 hour. ITS 3.6.1 ACTION B requires that if the Required Action and associated Completion Time are not met (i.e., the containment is not restored to OPERABLE status in 1 hour), the unit must be in MODE 3 within 6 hours and MODE 5 within 36 hours (37 hours total). This changes CTS by stating the ACTIONS rather than deferring to CTS 3.0.3. In addition, it deletes the CTS Actions to restore the limits prior to increasing the Reactor Coolant System temperature above 200°F.

The purpose of CTS 3.0.3 is to place the unit outside the MODE of Applicability within a reasonable amount of time in a controlled manner. CTS 3.6.1.6 is silent on these actions, deferring to CTS 3.0.3 for the actions to accomplish this. This change is acceptable because the ACTIONS specified in ITS 3.6.1 adopt ISTS structure for placing the unit outside the MODE of Applicability while changing the time specified to enter MODE 3 and MODE 5 but still within the plants ability to safely shutdown. In addition, deletion of the current Actions of CTS 3.6.1.6 is acceptable, because CTS 4.0.4 (ITS SR 3.0.4) already precludes entering the MODE of Applicability when the LCO is not met. Therefore, it is not necessary to include these requirements as specific actions in ITS 3.6.1. This change is designated as administrative because it does not result in technical changes to the CTS.

A04 CTS 4.6.1.2 requires containment leakage rates be demonstrated in conformance with the criteria specified in the Containment Leakage Rate Testing Program. ITS SR 3.6.1.1 requires the same test but adds an exception for containment air lock testing and secondary containment bypass leakage. This changes the Unit 1 and Unit 2 CTS by excluding containment air lock and secondary containment bypass leakage testing.

This is acceptable because ITS SR 3.6.2.1 requires performance of air lock leakage testing, Unit 1 ITS SR 3.6.3.7 and Unit 2 ITS SR 3.6.3.8 require secondary containment bypass leakage testing. Individual leakage rates specified for the containment air lock (CTS 4.6.1.1.b and 4.6.1.3.a) and secondary bypass leakage (CTS 6.8.4.h) are not specifically part of the acceptance criteria of 10 CFR 50, Appendix J. Therefore, leakage rates exceeding these individual limits only result in the containment being inoperable when the leakage results in exceeding the overall acceptance criteria of 1.0 La. This change is designated as administrative because it does not result in technical changes to the CTS.

<u>MORE RESTRICTIVE CHANGES</u>

None

<u>RELOCATED SPECIFICATIONS</u>

None

<u>REMOVED DETAIL CHANGES</u>

LA01 *(Type 4 – Removal of LCO, SR, or other TS Requirement to the TRM, UFSAR, ODCM, NQAP, CLRT Program, IST Program, or ISI Program)* Unit 1 CTS 4.6.1.6 states , "The structural integrity of the containment vessel shall be determined, in accordance with the containment Leakage Rate Testing Program, by a visual inspection of the accessible interior and exterior surfaces of the vessel and verifying no apparent changes in appearance of the surfaces or other abnormal degradation." Unit 2 CTS 4.6.1.6 states , "The structural integrity of the containment vessel shall be determined in accordance with the Containment Leak Rate Testing Program by a visual inspection of the exposed accessible interior and exterior surfaces of the vessel and verifying no apparent changes in appearance of the surfaces or other abnormal degradation."

ITS SR 3.6.1.1 requires the same visual examination in accordance with the Containment Leakage Rate Testing Program but does not include the details of when the testing is performed, what is verified and the acceptance criteria. This changes the CTS by moving the details of the visual examination to the Containment Leakage Rate Testing Program.

The removal of these details associated with the visual examination of the containment vessel is acceptable because this type of information is not necessary to be included in the Technical Specifications in order to provide adequate protection of public health and safety. ITS SR 3.6.1.1 retains the requirement to perform a visual examination in accordance with the Containment Leakage Rate Testing Program. This change is acceptable because these types of procedural details will be adequately controlled in the Containment Leakage Rate Testing Program requirements in ITS Chapter 5. This change is designated as a less restrictive removal of detail change because details associated with performance of the containment vessel visual examination are being removed from the Technical Specifications.

LA02 *(Type 2 – Removing Descriptions of System Operation)* CTS 1.7 states, in part, "CONTAINMENT VESSEL INTEGRITY shall exist when: a. All penetrations required to be closed during accident conditions are either: 1) Capable of being closed by an OPERABLE containment automatic isolation valve system, or 2) Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administrative control. b. All containment vessel equipment hatches are closed and sealed, c. Each containment vessel air lock is in compliance with the requirements of Specification 3.6.1.3, and e. The sealing mechanism associated with each penetration (e.g., welds, bellows, or 0-rings) is OPERABLE." ITS 3.6.1 states "Containment shall be OPERABLE." This changes the CTS by moving the reference to penetration and containment vessel equipment hatches and sealing mechanism associated with each penetration to the Bases.

The removal of these details, that are related to system operation, from the Technical Specifications is acceptable, because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS retains the requirement for the containment to be OPERABLE and the relocated material describes aspects of OPERABILITY. In addition, the ITS retains the requirement to perform required visual inspections and leakage rate testing in accordance with the Containment Leakage Rate Testing Program in accordance with 10 CFR 50 Appendix J, Part B, that would provide verification that the equipment hatch is closed and sealed and the sealing mechanisms are OPERABLE. Also, this change is acceptable, because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system operation is being removed from the Technical Specifications.

LA03 **Unit 2 only:** *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 3.6.1.1, by footnote, states the APPLICABILITY to require "In MODES 1 and 2, the RCB polar crane shall be rendered inoperable by locking the power supply breaker open." The ITS 3.6.1 APPLICABILITY is "MODES 1, 2, 3, and 4." This changes the CTS by moving the procedural detail to the UFSAR.

The removal of these details, for performing actions, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS retains the requirement for the containment to be OPERABLE in MODES 1, 2, 3, and 4 and the relocated material describes procedural requirements of OPERABILITY. Also, this change is acceptable because the removed information will be adequately controlled in the UFSAR. The UFSAR is controlled under 10 CFR 50.59 which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

None

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.6 CONTAINMENT SYSTEMS

3.6.1 Containment ~~(Atmospheric and Dual)~~ 1

3.6.1.1
3.6.1.2
3.6.1.6

LCO 3.6.1 Containment shall be OPERABLE.

Applicability (3.6.1.1 3.6.1.2 3.6.1.6) APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CTS	CONDITION	REQUIRED ACTION	COMPLETION TIME
3.6.1.1 ACTION 3.6.1.2 ACTION 3.6.1.6 ACTION	A. Containment inoperable.	A.1 Restore containment to OPERABLE status.	1 hour
3.6.1.1 ACTION 3.6.1.2 ACTION 3.6.1.6 ACTION	B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE		FREQUENCY	
4.6.1.2 4.6.1.6	SR 3.6.1.1	Perform required visual examinations and leakage rate testing except for containment air lock testing, and secondary containment bypass leakage in accordance with the Containment Leakage Rate Testing Program.	In accordance with the Containment Leakage Rate Testing Program	2
	~~SR 3.6.1.2~~	~~[Verify containment structural integrity in accordance with the Containment Tendon Surveillance Program.~~	~~In accordance with the Containment Tendon Surveillance Program]~~	3

3.6 CONTAINMENT SYSTEMS

3.6.1 Containment ~~(Atmospheric and Dual)~~ 1

3.6.1.1
3.6.1.2
3.6.1.6

LCO 3.6.1 Containment shall be OPERABLE.

Applicability (3.6.1.1 3.6.1.2 3.6.1.6)

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

ACTIONS

CTS	CONDITION	REQUIRED ACTION	COMPLETION TIME
3.6.1.1 ACTION 3.6.1.2 ACTION 3.6.1.6 ACTION	A. Containment inoperable.	A.1 Restore containment to OPERABLE status.	1 hour
3.6.1.1 ACTION 3.6.1.2 ACTION 3.6.1.6 ACTION	B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE		FREQUENCY	
4.6.1.2 4.6.1.6	SR 3.6.1.1	Perform required visual examinations and leakage rate testing except for containment air lock testing, and secondary containment bypass leakage in accordance with the Containment Leakage Rate Testing Program.	In accordance with the Containment Leakage Rate Testing Program	2
	~~SR 3.6.1.2~~	~~[Verify containment structural integrity in accordance with the Containment Tendon Surveillance Program.~~	~~In accordance with the Containment Tendon Surveillance Program]~~	3

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.1, CONTAINMENT

1. The type of Containment (Atmospheric and Dual) is deleted since it is unnecessary. This information is provided in NUREG-1432, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation.

2. Changes are made (additions, deletions, and/or changes) to the ITS that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS contains bracketed information and/or values that are generic to Combustion Engineering vintage plants or may not be applicable to all Combustion Engineering plants. Since St. Lucie Plant (PSL) Units 1 and 2 do not have containment tendons, ISTS SR 3.6.1.2 is not included in PSL Units 1 and 2 ITS.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.6 CONTAINMENT SYSTEMS

B 3.6.1~~B~~ Containment ~~(Dual)~~ 1

BASES

BACKGROUND

The containment is a free standing steel pressure vessel surrounded by a reinforced concrete shield building. The containment vessel, including all its penetrations, is a low leakage steel shell designed to contain radioactive material that may be released from the reactor core following a design basis loss of coolant accident (LOCA). Additionally, the containment and shield building provide shielding from the fission products that may be present in the containment atmosphere following accident conditions.

The containment vessel is a vertical cylindrical steel pressure vessel with hemispherical dome and ellipsoidal bottom, completely enclosed by a reinforced concrete shield building. A 4 ft wide annular space exists between the walls and domes of the steel containment vessel and the concrete shield building to permit inservice inspection and collection of containment outleakage. Dual containments utilize an outer concrete building for shielding and an inner steel containment for leak tightness.

Containment piping penetration assemblies provide for the passage of process, service, sampling, and instrumentation pipelines into the containment vessel while maintaining containment OPERABILITY. The shield building provides biological shielding and allows controlled release of the annulus atmosphere under accident conditions, as well as environmental missile protection for the containment vessel and the Nuclear Steam Supply System.

The inner steel containment and its penetrations establish the leakage limiting boundary of the containment. Maintaining the containment OPERABLE limits the leakage of fission product radioactivity from the containment to the environment. Loss of containment OPERABILITY could cause site boundary doses, in the event of a Design Basis Accident (DBA), to exceed values given in the licensing basis. SR 3.6.1.1 leakage rate requirements comply with 10 CFR 50, Appendix J, Option ~~[A][~~B~~]~~ 3
(Ref. 1), as modified by approved exemptions.

The isolation devices for the penetrations in the containment boundary are a part of the containment leak tight barrier. To maintain this leak tight barrier:

BASES

BACKGROUND (continued)

a. All penetrations required to be closed during accident conditions are either:

1. Capable of being closed by an OPERABLE automatic containment isolation system or

2. Closed by manual valves, blind flanges, or de-activated automatic valves secured in their closed positions, except as provided in LCO 3.6.3, "Containment Isolation Valves,"

b. Each air lock is OPERABLE except as provided in LCO 3.6.2, "Containment Air Locks,"

c. All equipment hatches are closed, and

Insert 1

~~[~~d. ~~The pressurized sealing mechanism associated with a penetration, except as provided in LCO 3.6.[ ], is OPERABLE.]~~ 3

APPLICABLE SAFETY ANALYSES

The safety design basis for the containment is that the containment must withstand the pressures and temperatures of the limiting DBA without exceeding the design leakage rate.

The DBAs that result in a release of radioactive material within containment are a LOCA, a main steam line break, and a control element assembly ejection accident (Ref. 2). In the analysis of each of these accidents, it is assumed that containment is OPERABLE such that release of fission products to the environment is controlled by the rate of containment leakage. The containment was designed with an allowable leakage rate of ~~[~~0.50~~]~~% of containment air weight per day (Ref. 3). This leakage rate is defined in 10 CFR 50, Appendix J, Option ~~[A][~~B~~]~~ (Ref. 1), as L_a: the maximum allowable containment leakage rate at the calculated maximum peak containment pressure (P_a) of ~~[42.3]~~ 42.77 psig, which results from the limiting design basis LOCA (Ref. ~~2~~ 3). 3 2

Satisfactory leakage rate test results are a requirement for the establishment of containment OPERABILITY.

The containment satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

3 **INSERT 1**

The sealing mechanism associated with each containment penetration (e.g., welds, bellows, or O-rings) is OPERABLE.

BASES

LCO

Containment OPERABILITY is maintained by limiting leakage to ≤ 1.0 L_a, except prior to the first startup after performing a required Containment Leakage Rate Testing Program leakage test. At this time, the applicable leakage limits must be met.

Compliance with this LCO will ensure a containment configuration, including equipment hatches, that is structurally sound and that will limit leakage to those leakage rates assumed in the safety analysis.

Individual leakage rates specified for the containment air lock (LCO 3.6.2) ~~[~~, purge valves with resilient seals, and secondary bypass leakage (LCO 3.6.3)~~]~~ are not specifically part of the acceptance criteria of 10 CFR 50, Appendix J. Therefore, leakage rates exceeding these individual limits only result in the containment being inoperable when the leakage results in exceeding the overall acceptance criteria of 1.0 L_a. 3

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material into containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, containment is not required to be OPERABLE in MODE 5 to prevent leakage of radioactive material from containment. The requirements for containment during MODE 6 refueling operations are addressed in LCO 3.9.3, "Containment Penetrations."

ACTIONS

A.1

In the event that containment is inoperable, it must be restored to OPERABLE status within 1 hour. The 1 hour Completion Time provides a period of time to correct the problem commensurate with the importance of maintaining containment OPERABLE during MODES 1, 2, 3, and 4. This time period also ensures that the probability of an accident (requiring containment OPERABILITY) occurring during periods when containment is inoperable is minimal.

B.1 and B.2

If containment cannot be restored to OPERABLE status within the required 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 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.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1

Maintaining containment OPERABLE requires compliance with the visual examinations and leakage rate test requirements of the Containment Leakage Rate Testing Program. The containment ~~concrete~~ visual examinations may be performed during ~~either power operation, e.g., performed concurrently with other containment inspection-related activities such as tendon testing, or during~~ a maintenance or refueling outage. ~~The visual examinations of the steel liner plate inside containment are performed during maintenance or refueling outages since this is the only time the liner plate is fully accessible.~~

Failure to meet air lock and purge valve with resilient seal specific leakage limits specified in LCO 3.6.2 and LCO 3.6.3 does not invalidate the acceptability of these overall leakage determinations unless their contribution to overall Type A, B, and C leakage causes that to exceed limits. As left leakage prior to the first startup after performing a required Containment Leakage Rate Testing Program leakage test is required to be < 0.6 L_a for combined Type B and C leakage, and ~~[< 0.75 L_a for Option A] [~~≤ 0.75 L_a ~~for Option B]~~ for overall Type A leakage. At all other times between required leakage rate tests, the acceptance criteria is based on an overall Type A leakage limit of ≤ 1.0 L_a. At ≤ 1.0 L_a the offsite dose consequences are bounded by the assumptions of the safety analysis. SR Frequencies are as required by the Containment Leakage Rate Testing Program. These periodic testing requirements verify that the containment leakage rate does not exceed the leakage rate assumed in the safety analysis.

SR Frequencies are as required by the Containment Leakage Rate Testing Program. These periodic testing requirements verify that the containment leakage rate does not exceed the leakage rate assumed in the safety analysis.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Regulatory Guide 1.163 and NEI 94-01 include acceptance criteria for as-left and as-found Type A leakage rates and combined Type B and C leakage rates, which may be reflected in the Bases.~~
~~--~~

~~[SR 3.6.1.2~~

~~For ungrouted, post tensioned tendons, this SR ensures that the structural integrity of the containment will be maintained in accordance with the provisions of the Containment Tendon Surveillance Program. Testing and Frequency are in accordance with the ASME Code, Section XI, Subsection IWL (Ref. 4), and applicable addenda as required by 10 CFR 50.55a.]~~

BASES

REFERENCES	1. 10 CFR 50, Appendix J, Option ~~[A][~~B~~]~~.
	2. U FSAR, Section ~~[~~ 15 ~~]~~.
	3. U FSAR, Section ~~[~~ 6.2 ~~]~~.
	~~4. ASME Code, Section XI, Subsection IWL.~~

3 6 5

B 3.6 CONTAINMENT SYSTEMS

B 3.6.1~~B~~ Containment ~~(Dual)~~ 1

BASES

BACKGROUND

The containment is a free standing steel pressure vessel surrounded by a reinforced concrete shield building. The containment vessel, including all its penetrations, is a low leakage steel shell designed to contain radioactive material that may be released from the reactor core following a design basis loss of coolant accident (LOCA). Additionally, the containment and shield building provide shielding from the fission products that may be present in the containment atmosphere following accident conditions.

The containment vessel is a vertical cylindrical steel pressure vessel with hemispherical dome and ellipsoidal bottom, completely enclosed by a reinforced concrete shield building. A 4 ft wide annular space exists between the walls and domes of the steel containment vessel and the concrete shield building to permit inservice inspection and collection of containment outleakage. Dual containments utilize an outer concrete building for shielding and an inner steel containment for leak tightness.

Containment piping penetration assemblies provide for the passage of process, service, sampling, and instrumentation pipelines into the containment vessel while maintaining containment OPERABILITY. The shield building provides biological shielding and allows controlled release of the annulus atmosphere under accident conditions, as well as environmental missile protection for the containment vessel and the Nuclear Steam Supply System.

The inner steel containment and its penetrations establish the leakage limiting boundary of the containment. Maintaining the containment OPERABLE limits the leakage of fission product radioactivity from the containment to the environment. Loss of containment OPERABILITY could cause site boundary doses, in the event of a Design Basis Accident (DBA), to exceed values given in the licensing basis. SR 3.6.1.1 leakage rate requirements comply with 10 CFR 50, Appendix J, Option ~~[A][~~B~~]~~ 3
(Ref. 1), as modified by approved exemptions.

The isolation devices for the penetrations in the containment boundary are a part of the containment leak tight barrier. To maintain this leak tight barrier:

BASES

BACKGROUND (continued)

a. All penetrations required to be closed during accident conditions are either:

1. Capable of being closed by an OPERABLE automatic containment isolation system or

2. Closed by manual valves, blind flanges, or de-activated automatic valves secured in their closed positions, except as provided in LCO 3.6.3, "Containment Isolation Valves,"

b. Each air lock is OPERABLE except as provided in LCO 3.6.2, "Containment Air Locks,"

c. All equipment hatches are closed, and

Insert 1

~~[~~d. ~~The pressurized sealing mechanism associated with a penetration, except as provided in LCO 3.6.[ ], is OPERABLE.]~~ 3

APPLICABLE SAFETY ANALYSES

The safety design basis for the containment is that the containment must withstand the pressures and temperatures of the limiting DBA without exceeding the design leakage rate.

The DBAs that result in a release of radioactive material within containment are a LOCA, a main steam line break, and a control element assembly ejection accident (Ref. 2). In the analysis of each of these accidents, it is assumed that containment is OPERABLE such that release of fission products to the environment is controlled by the rate of containment leakage. The containment was designed with an allowable leakage rate of ~~[~~0.50~~]~~% of containment air weight per day (Ref. 3). This leakage rate is defined in 10 CFR 50, Appendix J, Option ~~[A][~~B~~]~~ (Ref. 1), as L_a: the maximum allowable containment leakage rate at the calculated maximum peak containment pressure (P_a) of ~~[42.3]~~ 43.43 psig, which results from the limiting design basis LOCA (Ref. ~~2~~ 3). 3 2

Satisfactory leakage rate test results are a requirement for the establishment of containment OPERABILITY.

The containment satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

3 **INSERT 1**

The sealing mechanism associated with each containment penetration (e.g., welds, bellows, or O-rings) is OPERABLE.

BASES

LCO

Containment OPERABILITY is maintained by limiting leakage to ≤ 1.0 L_a, except prior to the first startup after performing a required Containment Leakage Rate Testing Program leakage test. At this time, the applicable leakage limits must be met.

Compliance with this LCO will ensure a containment configuration, including equipment hatches, that is structurally sound and that will limit leakage to those leakage rates assumed in the safety analysis.

Individual leakage rates specified for the containment air lock (LCO 3.6.2) ~~[~~, purge valves with resilient seals, and secondary bypass leakage (LCO 3.6.3)~~]~~ are not specifically part of the acceptance criteria of 10 CFR 50, Appendix J. Therefore, leakage rates exceeding these individual limits only result in the containment being inoperable when the leakage results in exceeding the overall acceptance criteria of 1.0 L_a. 3

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material into containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, containment is not required to be OPERABLE in MODE 5 to prevent leakage of radioactive material from containment. The requirements for containment during MODE 6 refueling operations are addressed in LCO 3.9.3, "Containment Penetrations."

ACTIONS

A.1

In the event that containment is inoperable, it must be restored to OPERABLE status within 1 hour. The 1 hour Completion Time provides a period of time to correct the problem commensurate with the importance of maintaining containment OPERABLE during MODES 1, 2, 3, and 4. This time period also ensures that the probability of an accident (requiring containment OPERABILITY) occurring during periods when containment is inoperable is minimal.

B.1 and B.2

If containment cannot be restored to OPERABLE status within the required 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 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.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1

Maintaining containment OPERABLE requires compliance with the visual examinations and leakage rate test requirements of the Containment Leakage Rate Testing Program. The containment ~~concrete~~ visual examinations may be performed during ~~either power operation, e.g., performed concurrently with other containment inspection-related activities such as tendon testing, or during~~ a maintenance or refueling outage. ~~The visual examinations of the steel liner plate inside containment are performed during maintenance or refueling outages since this is the only time the liner plate is fully accessible.~~

Failure to meet air lock and purge valve with resilient seal specific leakage limits specified in LCO 3.6.2 and LCO 3.6.3 does not invalidate the acceptability of these overall leakage determinations unless their contribution to overall Type A, B, and C leakage causes that to exceed limits. As left leakage prior to the first startup after performing a required Containment Leakage Rate Testing Program leakage test is required to be < 0.6 L_a for combined Type B and C leakage, and ~~[< 0.75 L_a for Option A] [~~≤ 0.75 L_a ~~for Option B]~~ for overall Type A leakage. At all other times between required leakage rate tests, the acceptance criteria is based on an overall Type A leakage limit of ≤ 1.0 L_a. At ≤ 1.0 L_a the offsite dose consequences are bounded by the assumptions of the safety analysis. SR Frequencies are as required by the Containment Leakage Rate Testing Program. These periodic testing requirements verify that the containment leakage rate does not exceed the leakage rate assumed in the safety analysis.

SR Frequencies are as required by the Containment Leakage Rate Testing Program. These periodic testing requirements verify that the containment leakage rate does not exceed the leakage rate assumed in the safety analysis.

~~-----REVIEWER'S NOTE-----~~
~~Regulatory Guide 1.163 and NEI 94-01 include acceptance criteria for as-left and as-found Type A leakage rates and combined Type B and C leakage rates, which may be reflected in the Bases.~~
~~-----~~

~~[SR 3.6.1.2~~

~~For ungrouted, post tensioned tendons, this SR ensures that the structural integrity of the containment will be maintained in accordance with the provisions of the Containment Tendon Surveillance Program. Testing and Frequency are in accordance with the ASME Code, Section XI, Subsection IWL (Ref. 4), and applicable addenda as required by 10 CFR 50.55a.]~~

BASES

REFERENCES	1. 10 CFR 50, Appendix J, Option ~~[A][~~B~~]~~.
	2. UFSAR, Section ~~[~~ 15 ~~]~~.
	3. UFSAR, Section ~~[~~ 6.2 ~~]~~.
	~~4. ASME Code, Section XI, Subsection IWL.~~ 5

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.1 Bases, CONTAINMENT

1. The heading for ISTS 3.6.1 includes the parenthetical expression (Dual) and the Specification designator “B” that are deleted. This identifying information is not included in the St. Lucie Plant (PSL) ITS. This information is provided in the NUREG to assist in identifying the appropriate Specification to be used as a model for a plant specific ITS conversion but serves no purpose in a plant specific implementation. In addition, the Atmospheric Specification Bases (ISTS B 3.6.1A) is not used and not shown.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS contains bracketed information and/or values that are generic to Combustion Engineering vintage plants. The brackets are removed, and the proper plant specific information/value is changed to reflect the current licensing basis.

4. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.

5. This bracketed requirement regarding Containment Tendon Surveillance Program is deleted because it is not applicable to PSL Unit 1 and Unit 2. The PSL containments do not utilize containment tendons.

6. The PSL Safety Analysis Report (SAR) is an updated version of the original Final Safety Analysis Report. Therefore, the proper acronym is UFSAR and is changed to reflect the document.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.1, CONTAINMENT

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 2

ITS 3.6.2, CONTAINMENT AIR LOCKS

Current Technical Specifications (CTS) Markup and Discussion of Changes (DOCs)

CONTAINMENT SYSTEMS

CONTAINMENT AIR LOCKS

LIMITING CONDITION FOR OPERATION

LCO 3.6.2 3.6.1.3 ~~Each~~ Two containment air lock s shall be OPERABLE ~~with:~~ A02

~~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~~ LA01

SR 3.6.2.1 b. An overall air lock leakage rate in accordance with the Containment Leakage Rate Testing Program.

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

ACTIONS **ACTION:**

Add proposed ACTION Note 1

NOTES

NOTE

ACTION NOTE 1
- ~~If the inner air lock door is inoperable, passage through the OPERABLE outer air lock door is permitted to effect repairs to the inoperable inner air lock door.~~ No more than one air lock door shall be open at any time. L01

ACTION A.1, B.1, C.2

Add proposed ACTION Note 2 A03

ACTION NOTE 3
- Enter ~~the ACTION~~ applicable Conditions and Required Actions of LCO 3.6.1~~.2~~, "Containment ~~Leakage~~," when ~~air lock~~ leakage results in exceeding overall containment leakage rate acceptance criteria. A01

Add proposed ACTION A Required Action Note 1 L02

Add proposed ACTION A Required Action Note 2

ACTION A

a. With one containment air lock door inoperable:

Add proposed Required Action A.1 Completion Time M01

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. A04

Add proposed Required Action A.3 Note L02

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 closed at least once per 31 days.

Add proposed ACTION B L01

ACTION D

3. Otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. LCO 3.0.4.a is not applicable when entering HOT SHUTDOWN.

Add proposed Required Action C.1 M02

ACTION C

b. With one or both containment air lock(s) inoperable, except as the result of an inoperable air lock door, maintain at least one air lock door closed ~~in the affected air lock(s)~~ and restore the inoperable air lock(s) to OPERABLE status within 24 hours or in accordance with the Risk Informed Completion Time Program;

ACTION D

otherwise be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. LCO 3.0.4.a is not applicable when entering HOT SHUTDOWN.

Add proposed Required Action C.2 Completion Time M01

SURVEILLANCE REQUIREMENTS

4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

CONTAINMENT SYSTEMS

CONTAINMENT AIR LOCKS

SURVEILLANCE REQUIREMENTS (continued)

Add proposed SR 3.6.2.1 Notes 1

A05

SR 3.6.2.1 a. By verifying leakage rates and air lock door seals in accordance with the Containment Leakage Rate Testing Program; and

SR 3.6.2.2 b. In accordance with the Surveillance Frequency Control Program by verifying that only one door in each air lock can be opened at a time.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 CONTAINMENT VESSEL

CONTAINMENT VESSEL INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 CONTAINMENT VESSEL INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Without CONTAINMENT VESSEL INTEGRITY, restore CONTAINMENT VESSEL INTEGRITY within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

See ITS 3.6.1

SURVEILLANCE REQUIREMENTS

4.6.1.1 CONTAINMENT VESSEL INTEGRITY shall be demonstrated:

See ITS 3.6.3

a. In accordance with the Surveillance Frequency Control Program by verifying that:

1. All containment vessel penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except for valves that are open on an intermittent basis under administrative control, and

2. All containment vessel equipment hatches are closed and sealed.

SR 3.6.2.1 b. By verifying that each containment vessel air lock is OPERABLE per Specification 3.6.1.3

See ITS 3.6.3

* Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

CONTAINMENT SYSTEMS

CONTAINMENT AIR LOCKS

LIMITING CONDITION FOR OPERATION

LCO 3.6.2 3.6.1.3 ~~Each~~ Two containment air lock s shall be OPERABLE ~~with:~~ A02

~~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~~ LA01

SR 3.6.2.1 b. An overall air lock leakage rate in accordance with the Containment Leakage Rate Testing Program.

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

ACTIONS **ACTION**:

Add proposed ACTION Note 1

NOTES

NOTE
ACTION NOTE 1 • ~~If the inner air lock door is inoperable, passage through the OPERABLE outer air lock door is permitted to effect repairs to the inoperable inner air lock door.~~ No more than one airlock door shall be open at any time. L01 A03
Add proposed ACTION Note 2
ACTION A.1, B.1, C.2 ACTION NOTE 3 • Enter ~~the ACTION~~ applicable Conditions and Required Actions of LCO 3.6.1~~.2~~, "Containment ~~Leakage~~," when ~~air lock~~ leakage results in exceeding overall containment leakage rate acceptance criteria. A01

Add proposed ACTION A Required Action Note 1 L02

ACTION A a. With one containment air lock door inoperable:

Add proposed ACTION A Required Action Note 2

Add proposed Required Action A.1 Completion Time

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. A04 M01

Add proposed Required Action A.3 Note L02

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.

Add proposed ACTION B L01

ACTION D 3. Otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. LCO 3.0.4.a is not applicable when entering HOT SHUTDOWN.

Add proposed Required Action C.1 M02

ACTION C b. With one or both containment air lock(s) inoperable, except as the result of an inoperable air lock door, maintain at least one air lock door closed ~~in the affected air lock(s)~~ and restore the inoperable air lock(s) to OPERABLE status within 24 hours or in accordance with the Risk Informed Completion Time Program;

ACTION D otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. LCO 3.0.4.a is not applicable when entering HOT SHUTDOWN.

Add proposed Required Action C.2 Completion Time M01

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

Add proposed SR 3.6.2.1 Notes 1 and 2 A05

SR 3.6.2.1 a. By verifying leakage rates and air lock door seals in accordance with the Containment Leakage Rate Testing Program; and

SR 3.6.2.2 b. In accordance with the Surveillance Frequency Control Program by verifying that only one door in each air lock can be opened at a time.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

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

ACTION:

See ITS 3.6.1

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated: See ITS 3.6.3

a. In accordance with the Surveillance Frequency Control Program by verifying that all penetrations** not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except for valves that are open on an intermittent basis under administrative control.

SR 3.6.2.1 b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3.

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* In MODES 1 and 2, the RCB polar crane shall be rendered inoperable by locking the power supply breaker open. See ITS 3.6.1

** Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days. See ITS 3.6.3

DISCUSSION OF CHANGES
ITS 3.6.2, CONTAINMENT AIR LOCKS

ADMINISTRATIVE CHANGES

A01 In the conversion of the St. Lucie Plant (PSL) Unit 1 and 2 Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG - 1432, Rev. 5.0, "Standard Technical Specifications – Combustion Engineering Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 CTS 3.6.1.3 states, in part, "Each containment air lock shall be OPERABLE. ITS LCO 3.6.2 states, "Two containment air locks shall be OPERABLE. This changes the CTS by identifying the total number of airlocks that are required to be OPERABLE.

This change is acceptable because PSL has two containment air locks. Therefore, requiring two containment air locks to be OPERABLE in ITS 3.6.2 is the same as requiring each containment air lock to be OPERABLE in CTS 3.6.1.3. This change is designated as administrative because it does not result in technical changes to the CTS.

A03 CTS 3.6.1.3 states, in part, "Each containment air lock shall be OPERABLE." CTS 3.6.1.3 ACTION a states, in part, "With one containment air lock door inoperable" and specifies ACTIONS to be taken. CTS 3.6.1.3 ACTION b states, in part, "With one or both containment air lock(s) inoperable, except as the result of an inoperable air lock door" and specifies ACTIONS to be taken. ITS 3.6.2 ACTIONS Note 2 states "Separate Condition entry is allowed for each airlock." ITS 3.6.2 ACTION A states "One or more containment air locks with one containment air lock door inoperable." ITS 3.6.2 ACTION C states "One or more containment air locks inoperable for reasons other than Condition A or B." This changes the CTS by clarifying the current intent of applying the CTS Actions to each air lock separately.

The purpose of the Unit 1 CTS 3.6.1.3 is to ensure containment air locks meet their requirements for CONTAINMENT VESSEL INTEGRITY and Unit 2 CTS CTS 3.6.1.3 is to ensure containment air locks meet their requirements for primary CONTAINMENT INTEGRITY. One OPERABLE air lock door in each containment air lock provides a pressure boundary and applying the CTS Actions for an inoperable air lock to each of the air locks separately is appropriate. ITS 3.6.2 ACTIONS Note 2 clearly states this. The Required Actions for each Condition provides appropriate compensatory action for each air lock. This change is acceptable because it clarifies existing requirements and better describes how the requirements are currently used. This change is designated as administrative because it does not result in technical changes to the CTS.

A04 CTS 3.6.1.3 ACTION a.1 states in part, to either restore the inoperable air lock door to OPERABLE status within 24 hours or lock the OPERABLE air lock door closed. ITS 3.6.2 ACTION A does not contain the statement to restore the inoperable air lock door to OPERABLE status. This changes CTS by not including the statement to restore the inoperable air lock door to OPERABLE status.

This change is acceptable because the technical requirements have not changed. Restoration to compliance with the LCO is always an available Required Action and it is the convention in the ITS to not state such "restore" options explicitly unless it is the only action or is required for clarity. This change is designated as administrative because it does not result in technical changes to the CTS.

A05 CTS 4.6.1.3.a requires demonstrating each containment air lock is OPERABLE by verifying leakage rates are in accordance with the Containment Leakage Rate Testing Program. ITS 3.6.2.1 requires the same test, but adds two Notes (SR 3.6.2.1 Note 1) that states in part than an inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test and Note 2) requiring that the results be evaluated against acceptance criteria of ITS SR 3.6.1.1. This changes the CTS by clarifying the validity of the previous overall air lock leakage test results and specifically requiring verification of the air lock leakage rates against the Containment leakage rates.

The purpose of leak rate testing requirements for air lock leakage (Type B leakage test) is to verify that the air lock leakage does not exceed the allowed fraction of the overall containment leakage rate. Evaluating the containment air lock leakage with the containment leakage rates ensures that the air lock leakage is accounted for in determining the combined Type B and C containment leakage rate. In the CTS, this evaluation is performed as part of the Containment Leakage Rate Testing Program, but is not specifically addressed in CTS 4.6.1.3.a. This change is designated as administrative because it does not result in technical changes to the CTS.

<u>MORE RESTRICTIVE CHANGES</u>

M01 CTS 3.6.1.3 ACTION a requires, in part, maintaining at least the OPERABLE air lock door closed when one containment air lock door is inoperable. CTS 3.6.1.3 ACTION b requires, in part, maintaining at least one air lock door closed when the containment air lock is inoperable. ITS 3.6.2 ACTIONS A and C require similar actions (Required Action A.1 and C.2, respectively), and require verifying the door is closed in the affected air lock within 1 hour. This changes the CTS by adding a new Completion Time.

The purpose of ITS 3.6.2 Required Actions A.1 and C.2 is to verify that the overall leakage rate aspect of containment OPERABILITY is met in the event an airlock is inoperable for a reason other than an interlock mechanism being inoperable. An additional purpose of ITS 3.6.2 Required Actions A.1 and C.2 is to minimize, to the extent possible, the leakage through the inoperable air lock. This change is acceptable because if the inoperability is something that could cause the overall containment leakage rate limits to be exceeded, this should be evaluated immediately, commensurate with the importance of the limits. Furthermore, the one hour Completion Time is commensurate with the Completion Time in ITS 3.6.1 (CTS 3.6.1.1) for restoring containment to

OPERABLE status when the containment is inoperable. This change is considered more restrictive because it provides a new Completion Time.

M02 CTS 3.6.1.3 ACTION b requires maintaining at least one air lock door closed and restoration of an inoperable air lock within 24 hours. ITS 3.6.2 ACTION C requires one additional Required Action. When one or more containment air locks are inoperable for reasons other than Condition A or B, ITS 3.6.2 Required Action C.1 requires initiation of action to evaluate overall containment leakage rate per LCO 3.6.1, immediately. This changes the CTS by adding a new Required Action.

The purpose of ITS 3.6.2 Required Action C.1 is to verify that the overall leakage rate aspect of containment OPERABILITY is met in the event an airlock is inoperable for a reason other than one door or an interlock mechanism being inoperable. An additional purpose of ITS 3.6.2 Required Action C.2 is to minimize, to the extent possible, the leakage through the inoperable air lock. This change is acceptable because if the inoperability is something that could cause the overall containment leakage rate limits to be exceeded, this should be evaluated immediately, commensurate with the importance of the limits. This change is considered more restrictive because it provides a new Required Action.

<u>RELOCATED SPECIFICATIONS</u>

None

<u>REMOVED DETAIL CHANGES</u>

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.6.1.3 states each containment air lock shall be OPERABLE with 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. ITS 3.6.2 does not contain this level of detail. This changes the CTS by moving details concerning what constitutes an OPERABLE containment air lock to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the information and is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 4 – Relaxation of Required Action)* CTS 3.6.1.3 ACTION b states "With one or both containment air lock(s) inoperable, except as the result of an inoperable air lock door, maintain at least one air lock door closed in the affected air lock(s) and restore the inoperable air lock(s) to OPERABLE status within 24 hours or in accordance with the Risk Informed Completion Time Program; otherwise be in at least HOT STANDBY within the next six hours and in COLD SHUTDOWN within the following 6 hours." CTS 3.6.1.3 ACTION Note(s) state in part "If the inner air lock door is inoperable, passage through the OPERABLE outer air lock door is permitted to effect repairs to the inoperable inner air lock door." ITS 3.6.2 ACTION B provides a separate ACTION for inoperability of the air lock with an air lock interlock mechanism inoperable, ITS 3.6.2 ACTION B allows unlimited operation provided an OPERABLE door in the air lock is closed in 1 hour, locked closed in 24 hours, and verification is performed every 31 days that an OPERABLE air lock door in the air lock remains closed. For air lock doors in high radiation areas, this 31 day verification can be performed by administrative means. In addition, containment entry and exit through the air lock is permissible (i.e., the closed and locked door can be opened) under administrative control. Additionally, a new Note which applies to ITS 3.6.2 ACTIONS A, B, and C has been added. This Note, ITS 3.6.2 ACTIONS Note 1, states entry and exit (i.e., the closed and locked OPERABLE air locks can be opened) is permissible to perform repairs on the affected air lock components. This changes the CTS by allowing unlimited operation, with certain restrictions, for air locks that are inoperable due to an inoperable lock mechanism and allows entry and exit to repair an inoperable door.

The purpose of CTS air lock ACTION b is to ensure the containment is not allowed to operate indefinitely in a condition such that it cannot perform its safety function. The changes are acceptable because the proposed ACTION will still ensure the containment safety function is met. Since there are two redundant doors in each air lock, only one OPERABLE air lock door is needed to be maintained closed to ensure the leak tightness requirements are met. The leak tightness of each door is verified, as required by ITS SR 3.6.2.1, in accordance with the Containment Leakage Rate Testing Program. In addition, the interlock mechanism only ensures that both doors in the air lock are not inadvertently opened at the same time. With either an OPERABLE air lock door locked closed, or a dedicated individual ensuring that only one door at a time is opened, the function of the interlock mechanism is being met. The allowances to open the air lock doors to perform repairs or other reasons is acceptable since the time the door is opened is short and the opening is under administrative controls. Also, for the case where the air lock door is opened for reasons other than to effect repairs, the time period (7 days) is short. These changes are designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L02 *(Category 4 – Relaxation of Required Action)* CTS 3.6.1.3 ACTION a states "With one containment air lock inoperable, 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" and "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." ITS 3.6.2 ACTION A contains similar requirements, but contains two Required Action Notes stating "Required Actions A.1, A.2, and A.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered" and "Entry and exit is permissible for 7 days under administrative controls if both air locks are inoperable." Additionally ITS 3.6.2 Required Action A.3 contains a Note stating "Air lock doors in high radiation areas may be verified locked closed by administrative means." This changes the CTS by ensuring that only the Required Actions and associated Completion Times of Condition C are required if both doors in the same air lock are inoperable, allowing use of the air lock for entry and exit for 7 days under administrative controls if both air locks have an inoperable door, and allowing air lock doors in high radiation areas to be verified locked close by administrative means.

The addition of ITS 3.6.2 Condition A, Required Action Note 1 is acceptable since it ensures that only the Required Actions and associated Completion Times of Condition C are performed if both doors in the same air lock are inoperable. This is acceptable since Condition C contains the appropriate remedial actions to take when both doors are inoperable. The addition of ITS 3.6.2 Condition A, Required Action Note 2 is acceptable since it allows entry and exit to perform Technical Specification Surveillance and Required Action as well as other activities on equipment inside containment that are required by Technical Specifications or activities on equipment that support Technical Specification required equipment. This change is acceptable since the time duration is short and the doors are opened under administrative controls. The addition of ITS 3.6.2 Required Action A.3 Note is acceptable since it allows verifying that air lock doors in high radiation areas by administrative means. Additionally, this change is acceptable since access to these areas is typically restricted and the probability of a misalignment of the doors is small. These changes are designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.6 CONTAINMENT SYSTEMS

3.6.2 Containment Air Locks ~~(Atmospheric and Dual)~~ 1

3.6.1.3 LCO 3.6.2 ~~[~~Two~~]~~ containment air lock~~[~~s~~]~~ shall be OPERABLE. 3

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

ACTIONS

-----NOTES-----

DOC L01 1. Entry and exit is permissible to perform repairs on the affected air lock components.

DOC A03 2. Separate Condition entry is allowed for each air lock.

ACTION NOTE 3. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage rate acceptance criteria.

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
ACTION a	A. One or more containment air locks with one containment air lock door inoperable.	-----NOTES----- 1. Required Actions A.1, A.2, and A.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered.		
DOC L02		2. Entry and exit is permissible for 7 days under administrative controls ~~[~~if both air locks are inoperable~~]~~. ----------		3
DOC M01		A.1 Verify the OPERABLE door is closed in the affected air lock. AND	1 hour	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
ACTION a.1	A.2 Lock the OPERABLE door closed in the affected air lock.	24 hours
	AND	
DOC L02	A.3 ---------------NOTE-------------- Air lock doors in high radiation areas may be verified locked closed by administrative means. -------------------------------------	
ACTION a.2	Verify the OPERABLE door is locked closed in the affected air lock.	Once per 31 days
B. One or more containment air locks with containment air lock interlock mechanism inoperable. (DOC L01)	-------------------NOTES------------------ 1. Required Actions B.1, B.2, and B.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered. 2. Entry and exit of containment is permissible under the control of a dedicated individual. --	
DOC L01	B.1 Verify an OPERABLE door is closed in the affected air lock.	1 hour
	AND	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC L01	B.2 Lock an OPERABLE door closed in the affected air lock.	24 hours
	AND	
DOC L01	B.3 ---------------NOTE-------------- Air lock doors in high radiation areas may be verified locked closed by administrative means. -------------------------------------	
DOC L01	Verify an OPERABLE door is locked closed in the affected air lock.	Once per 31 days
ACTION b, DOC M02 — C. One or more containment air locks inoperable for reasons other than Condition A or B.	C.1 Initiate action to evaluate overall containment leakage rate per LCO 3.6.1.	Immediately
	AND	
DOC M01	C.2 Verify a door is closed in the affected air lock.	1 hour
	AND	
ACTION b	C.3 Restore air lock to OPERABLE status.	24 hours ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~ 3
ACTION a, ACTION b — D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. AND	6 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
Action a, Action b	D.2 --------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------- Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.2.1	------------------------------NOTES---------------------------- 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. (DOC A05) 2. Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1. -- Perform required air lock leakage rate testing in accordance with the Containment Leakage Rate Testing Program. (4.6.1.3.a, 4.6.1.1.b)	In accordance with the Containment Leakage Rate Testing Program
SR 3.6.2.2 (4.6.1.3.b)	Verify only one door in the air lock can be opened at a time.	~~[24 months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 3

3.6 CONTAINMENT SYSTEMS

3.6.2 Containment Air Locks ~~(Atmospheric and Dual)~~ (1)

3.6.1.3 LCO 3.6.2 ~~[~~Two~~]~~ containment air lock~~[~~s~~]~~ shall be OPERABLE. (3)

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

ACTIONS

--NOTES--

DOC L01 1. Entry and exit is permissible to perform repairs on the affected air lock components.

DOC A03 2. Separate Condition entry is allowed for each air lock.

ACTION NOTE 3. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage rate acceptance criteria.

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
ACTION a DOC L02 DOC M01	A. One or more containment air locks with one containment air lock door inoperable.	-------------------NOTES------------------ 1. Required Actions A.1, A.2, and A.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered. 2. Entry and exit is permissible for 7 days under administrative controls ~~[~~if both air locks are inoperable~~]~~. -- A.1 Verify the OPERABLE door is closed in the affected air lock. AND	1 hour	(3)

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME
ACTION a.1		A.2 Lock the OPERABLE door closed in the affected air lock.	24 hours
		AND	
DOC L02		A.3 ---------------NOTE-------------- Air lock doors in high radiation areas may be verified locked closed by administrative means. -------------------------------------	
ACTION a.2		Verify the OPERABLE door is locked closed in the affected air lock.	Once per 31 days
DOC L01	B. One or more containment air locks with containment air lock interlock mechanism inoperable.	-------------------NOTES------------------ 1. Required Actions B.1, B.2, and B.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered. 2. Entry and exit of containment is permissible under the control of a dedicated individual. ---	
DOC L01		B.1 Verify an OPERABLE door is closed in the affected air lock.	1 hour
		AND	

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC L01		B.2 Lock an OPERABLE door closed in the affected air lock.	24 hours
		AND	
DOC L01		B.3 ---------------NOTE-------------- Air lock doors in high radiation areas may be verified locked closed by administrative means. -------------------------------------	
DOC L01		Verify an OPERABLE door is locked closed in the affected air lock.	Once per 31 days
ACTION b, DOC M02	C. One or more containment air locks inoperable for reasons other than Condition A or B.	C.1 Initiate action to evaluate overall containment leakage rate per LCO 3.6.1.	Immediately
		AND	
DOC M01		C.2 Verify a door is closed in the affected air lock.	1 hour
		AND	
ACTION b		C.3 Restore air lock to OPERABLE status.	24 hours ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~ 3
ACTION a, ACTION b	D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. AND	6 hours

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME
Action a, Action b		D.2 --------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------- Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
DOC A05	SR 3.6.2.1	------------------------------NOTES---------------------------- 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1. ---		
4.6.1.3.a 4.6.1.1.b		Perform required air lock leakage rate testing in accordance with the Containment Leakage Rate Testing Program.	In accordance with the Containment Leakage Rate Testing Program	
4.6.1.3.b	SR 3.6.2.2	Verify only one door in the air lock can be opened at a time.	~~[24 months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	3

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.2, CONTAINMENT AIR LOCKS

1. The type of Containment (Atmospheric and Dual) is deleted since it is unnecessary. This information is provided in NUREG-1432, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation.

2. Changes are made (additions, deletions, and/or changes) to the ITS which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS contains bracketed information and/or values that are generic to all Combustion Engineering vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.6 CONTAINMENT SYSTEMS

B 3.6.2 Containment Air Locks ~~(Atmospheric and Dual)~~

1

for the personnel air lock and approximately 6 ft in diameter for the emergency air lock

(i.e., personnel and emergency)

BASES

2

BACKGROUND

Containment air locks form part of the containment pressure boundary and provide a means for personnel access during all MODES of operation.

approximately 9

Each air lock is nominally a right circular cylinder, ~~10~~ ft in diameter, with a door at each end. The doors are interlocked to prevent simultaneous opening. During periods when containment is not required to be OPERABLE, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment entry is necessary. Each air lock door has been designed and tested to certify its ability to withstand a pressure in excess of the maximum expected pressure following a Design Basis Accident (DBA) in containment. As such, closure of a single door supports containment OPERABILITY. Each of the doors contains double gasketed seals and local leakage rate testing capability to ensure pressure integrity. To effect a leak tight seal, the air lock design uses pressure seated doors (i.e., an increase in containment internal pressure results in increased sealing force on each door).

~~Each personnel air lock is provided with limit switches on both doors that provide control room indication of door position. Additionally, c~~ C ontrol room indication is provided to alert the operator whenever a~~n~~ personnel air lock ~~door interlock mechanism is defeated~~ equalizing valve is open. 2

The containment air locks form part of the containment pressure boundary. As such, air lock integrity and leak tightness is essential for maintaining the containment leakage rate within limit in the event of a DBA. Not maintaining air lock integrity or leak tightness may result in a leakage rate in excess of that assumed in the unit safety analysis.

APPLICABLE SAFETY ANALYSES

~~[For atmospheric containment, the DBAs that result in a release of radioactive material within containment are a loss of coolant accident (LOCA), a main steam line break (MSLB) and a control element assembly (CEA) ejection accident (Ref. 2). In the analysis of each of these accidents, it is assumed that containment is OPERABLE such that release of fission products to the environment is controlled by the rate of containment leakage. The containment was designed with an allowable leakage rate of [0.10]% of containment air weight per day (Ref. 3). This leakage rate is defined in 10 CFR 50, Appendix J, Option A (Ref. 1), as~~ 3

BASES

APPLICABLE SAFETY ANALYSES (continued)

~~L_a: the maximum allowable containment leakage rate at the calculated [maximum] peak containment pressure (P_a) of [55.7] psig, which results from the limiting design basis LOCA. This allowable leakage rate forms the basis for the acceptance criteria imposed on the SRs associated with the air lock.~~ 3

For dual containment, the DBAs that result in a release of radioactive material within containment are a LOCA, an MSLB, and a CEA ejection accident (Ref. 2). In the analysis of each of these accidents, it is assumed that containment is OPERABLE such that release of fission products to the environment is controlled by the rate of containment leakage. The containment was designed with an allowable leakage rate of ~~[~~0.50~~]~~% of containment air weight per day (Ref. 3). This leakage rate is 3
defined in 10 CFR 50, Appendix J, Option ~~A~~ B (Ref. 1), as L_a: the maximum 2
allowable containment leakage rate at the calculated ~~[maximum]~~ peak containment pressure (P_a) of ~~[42.3]~~ 42.77 psig, which results from the limiting design basis LOCA. This allowable leakage rate forms the basis for the acceptance criteria imposed on the SRs associated with the air lock. ~~]~~ 3

The containment air locks satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Each containment air lock forms part of the containment pressure boundary. As part of the containment pressure boundary, the air lock safety function is related to control of the containment leakage rate resulting from a DBA. Thus, each air lock's structural integrity and leak tightness are essential to the successful mitigation of such an event.

Each air lock is required to be OPERABLE. For the air lock to be considered OPERABLE, the air lock interlock mechanism must be OPERABLE, the air lock must be in compliance with the Type B air lock leakage test, and both air lock doors must be OPERABLE. The interlock allows only one air lock door of an air lock to be opened at one time. This provision ensures that a gross breach of containment does not exist when containment is required to be OPERABLE. Closure of a single door in each air lock is sufficient to provide a leak tight barrier following postulated events. Nevertheless, both doors are kept closed when the air lock is not being used for normal entry into or exit from containment.

BASES

APPLICABILITY	In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, the containment air locks are not required in MODE 5 to prevent leakage of radioactive material from containment. The requirements for the containment air locks during MODE 6 are addressed in LCO 3.9.3, "Containment Penetrations."

ACTIONS

The ACTIONS are modified by a Note that allows entry and exit to perform repairs on the affected air lock component. If the outer door is inoperable, then it may be easily accessed for most repairs. It is preferred that the air lock be accessed from inside primary containment by entering through the other OPERABLE air lock. However, if this is not practicable, or if repairs on either door must be performed from the barrel side of the door then it is permissible to enter the air lock through the OPERABLE door, which means there is a short time during which the containment boundary is not intact (during access through the OPERABLE door). The ability to open the OPERABLE door, even if it means the containment boundary is temporarily not intact, is acceptable because of the low probability of an event that could pressurize the containment during the short time in which the OPERABLE door is expected to be open. After each entry and exit, the OPERABLE door must be immediately closed. If ALARA conditions permit, entry and exit should be via an OPERABLE air lock.

A second Note has been added to provide clarification that, for this LCO, separate Condition entry is allowed for each air lock. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable air lock. Complying with the Required Actions may allow for continued operation, and a subsequent inoperable air lock is governed by subsequent Condition entry and application of associated Required Actions. A third Note has been included that requires entry into the applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage limit.

<u>A.1, A.2, and A.3</u>

With one air lock door inoperable in one or more containment air locks, the OPERABLE door must be verified closed (Required Action A.1) in each affected containment air lock. This ensures that a leak tight containment barrier is maintained by the use of an OPERABLE air lock door. This action must be completed within 1 hour. This specified time period is consistent with the ACTIONS of LCO 3.6.1, which requires containment be restored to OPERABLE status within 1 hour.

BASES

ACTIONS (continued)

In addition, the affected air lock penetration must be isolated by locking closed an OPERABLE air lock door within the 24 hour Completion Time. The 24 hour Completion Time is considered reasonable for locking the OPERABLE air lock door, considering the OPERABLE door of the affected air lock is being maintained closed.

Required Action A.3 verifies that an air lock with an inoperable door has been isolated by the use of a locked and closed OPERABLE air lock door. This ensures that an acceptable containment leakage boundary is maintained. The Completion Time of once per 31 days is based on engineering judgment and is considered adequate in view of the low likelihood of a locked door being mispositioned and other administrative controls. Required Action A.3 is modified by a Note that applies to air lock doors located in high radiation areas and allows these doors to be verified locked closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of the door, once it has been verified to be in the proper position, is small.

The Required Actions have been modified by two Notes. Note 1 ensures that only the Required Actions and associated Completion Times of Condition C are required if both doors in the same air lock are inoperable. With both doors in the same air lock inoperable, an OPERABLE door is not available to be closed. Required Actions C.1 and C.2 are the appropriate remedial actions. The exception of Note 1 does not affect tracking the Completion Time from the initial entry into Condition A; only the requirement to comply with the Required Actions. Note 2 allows use of the air lock for entry and exit for 7 days under administrative controls if both air locks have an inoperable door. This 7 day restriction begins when the second air lock is discovered inoperable. Containment entry may be required to perform Technical Specifications (TS) Surveillances and Required Actions, as well as other activities on equipment inside containment that are required by TS or activities on equipment that support TS-required equipment. This Note is not intended to preclude performing other activities (i.e., non-TS-required activities) if the containment was 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 the containment during the short time that the OPERABLE door is expected to be open.

BASES

ACTIONS (continued)

B.1, B.2, and B.3

With an air lock interlock mechanism inoperable in one or more air locks, the Required Actions and associated Completion Times are consistent with those specified in Condition A.

The Required Actions have been modified by two Notes. Note 1 ensures that only the Required Actions and associated Completion Times of Condition C are required if both doors in the same air lock are inoperable. With both doors in the same air lock inoperable, an OPERABLE door is not available to be closed. Required Actions C.1 and C.2 are the appropriate remedial actions. Note 2 allows entry into and exit from containment under the control of a dedicated individual stationed at the air lock to ensure that only one door is opened at a time (i.e., the individual performs the function of the interlock).

Required Action B.3 is modified by a Note that applies to air lock doors located in high radiation areas and allows these doors to be verified locked closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of the door, once it has been verified to be in the proper position, is small.

C.1, C.2, and C.3

With one or more air locks inoperable for reasons other than those described in Condition A or B, Required Action C.1 requires action to be initiated immediately to evaluate previous combined leakage rates using current air lock test results. An evaluation is acceptable since it is overly conservative to immediately declare the containment inoperable if both doors in an air lock have failed a seal test or if the overall air lock leakage is not within limits. In many instances (e.g., only one seal per door has failed), containment remains OPERABLE, yet only 1 hour (per LCO 3.6.1) would be provided to restore the air lock door to OPERABLE status prior to requiring a plant shutdown. In addition, even with both doors failing the seal test, the overall containment leakage rate can still be within limits.

Required Action C.2 requires that one door in the affected containment air lock must be verified to be closed. This action must be completed within the 1 hour Completion Time. This specified time period is consistent with the ACTIONS of LCO 3.6.1, which requires that containment be restored to OPERABLE status within 1 hour.

BASES

ACTIONS (continued)

Additionally, the affected air lock(s) must be restored to OPERABLE status within the 24 hour Completion Time ~~[~~or in accordance with the Risk Informed Completion Time Program~~]~~. The specified time period is considered reasonable for restoring an inoperable air lock to OPERABLE status, assuming that at least one door is maintained closed in each affected air lock. 3

D.1 and D.2

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Adoption of a MODE 4 end state requires the licensee to make the following commitments:~~

~~1. [LICENSEE] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision [4F].~~

~~2. [LICENSEE] will follow the guidance established in Revision 2 of WCAP-16364-NP, "Implementation Guidance for Risk Informed Modification to Selected Required Action End States at Combustion Engineering NSSS Plants (TSTF-422)," Westinghouse, May 2010.~~
~~---~~ 4

If the inoperable containment air lock cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.

Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 4). In MODE 4 there are more accident mitigation systems available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state.

Required Action D.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is

BASES

ACTIONS (continued)

not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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.

SURVEILLANCE REQUIREMENTS

SR 3.6.2.1

Maintaining containment air locks OPERABLE requires compliance with the leakage rate test requirements of the Containment Leakage Rate Testing Program. This SR reflects the leakage rate testing requirements with regard to air lock leakage (Type B leakage tests). The acceptance criteria were established during initial air lock and containment OPERABILITY testing. The periodic testing requirements verify that the air lock leakage does not exceed the allowed fraction of the overall containment leakage rate. The Frequency is required by the Containment Leakage Rate Testing Program.

The SR has been modified by two Notes. Note 1 states that an inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. This is considered reasonable since either air lock door is capable of providing a fission product barrier in the event of a DBA. Note 2 has been added to this SR requiring the results to be evaluated against the acceptance criteria which is applicable to SR 3.6.1.1. This ensures that air lock leakage is properly accounted for in determining the combined Type B and C containment leakage rate.

SR 3.6.2.2

The air lock interlock is designed to prevent simultaneous opening of both doors in a single air lock. Since both the inner and outer doors of an air lock are designed to withstand the maximum expected post accident containment pressure, closure of either door will support containment OPERABILITY. Thus, the door interlock feature supports containment OPERABILITY while the air lock is being used for personnel transit into and out of containment. Periodic testing of this interlock demonstrates that the interlock will function as designed and that simultaneous opening of the inner and outer doors will not inadvertently occur. Due to the purely mechanical nature of this interlock, and given that the interlock mechanism is not normally challenged when the containment airlock door is used for entry and exit (procedures require strict adherence to single door opening), this test is ~~only required to be performed every 24 months~~. 2
performed in accordance with the Surveillance Frequency Control Program

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~[The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage, and the potential for loss of containment OPERABILITY if the Surveillance were performed with the reactor at power. The 24 month Frequency for the interlock is justified based on generic operating experience. The 24 month Frequency is based on engineering judgment and is considered adequate given that the interlock is not challenged during the use of the airlock.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~-----]~~ 3

REFERENCES

1. 10 CFR 50, Appendix J, Option ~~[A][~~B~~]~~.
2. FSAR, Section ~~[ ]~~ 15.
3. FSAR, Section ~~[ ]~~ 6.2.
4. CE NPSD-1186-A, Technical Justification for the Risk Informed Modification to Selected Required Action End States for CEOG PWRs, October, 2001.

U 3 5 2

B 3.6 CONTAINMENT SYSTEMS

B 3.6.2 Containment Air Locks ~~(Atmospheric and Dual)~~ 1

BASES

BACKGROUND

Containment air locks (i.e., personnel and emergency) form part of the containment pressure boundary and provide a means for personnel access during all MODES of operation.

Each air lock is nominally a right circular cylinder, ~~10~~ approximately 9 ft in diameter for the personnel air lock and approximately 6 ft in diameter for the emergency air lock, with a door at each end. The doors are interlocked to prevent simultaneous opening. During periods when containment is not required to be OPERABLE, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment entry is necessary. Each air lock door has been designed and tested to certify its ability to withstand a pressure in excess of the maximum expected pressure following a Design Basis Accident (DBA) in containment. As such, closure of a single door supports containment OPERABILITY. Each of the doors contains double gasketed seals and local leakage rate testing capability to ensure pressure integrity. To effect a leak tight seal, the air lock design uses pressure seated doors (i.e., an increase in containment internal pressure results in increased sealing force on each door). 2

Each personnel air lock is provided with limit switches ~~on both~~ at the valve and latch operations for each door~~s~~ that provide control room indication of door position. ~~Additionally, control room indication is provided to alert the operator whenever an air lock door interlock mechanism is defeated.~~ 2

The containment air locks form part of the containment pressure boundary. As such, air lock integrity and leak tightness is essential for maintaining the containment leakage rate within limit in the event of a DBA. Not maintaining air lock integrity or leak tightness may result in a leakage rate in excess of that assumed in the unit safety analysis.

APPLICABLE SAFETY ANALYSES

~~[For atmospheric containment, the DBAs that result in a release of radioactive material within containment are a loss of coolant accident (LOCA), a main steam line break (MSLB) and a control element assembly (CEA) ejection accident (Ref. 2). In the analysis of each of these accidents, it is assumed that containment is OPERABLE such that release of fission products to the environment is controlled by the rate of containment leakage. The containment was designed with an allowable leakage rate of [0.10]% of containment air weight per day (Ref. 3). This leakage rate is defined in 10 CFR 50, Appendix J, Option A (Ref. 1), as~~ 3

BASES

APPLICABLE SAFETY ANALYSES (continued)

~~L_a: the maximum allowable containment leakage rate at the calculated [maximum] peak containment pressure (P_a) of [55.7] psig, which results from the limiting design basis LOCA. This allowable leakage rate forms the basis for the acceptance criteria imposed on the SRs associated with the air lock.~~ 3

For dual containment, the DBAs that result in a release of radioactive material within containment are a LOCA, an MSLB, and a CEA ejection accident (Ref. 2). In the analysis of each of these accidents, it is assumed that containment is OPERABLE such that release of fission products to the environment is controlled by the rate of containment leakage. The containment was designed with an allowable leakage rate of ~~[~~0.50~~]~~% of containment air weight per day (Ref. 3). This leakage rate is 3 defined in 10 CFR 50, Appendix J, Option ~~A~~ B (Ref. 1), as L_a: the maximum 2 allowable containment leakage rate at the calculated ~~[maximum]~~ peak containment pressure (P_a) of ~~[42.3]~~ 43.43 psig, which results from the limiting design basis LOCA. This allowable leakage rate forms the basis for the acceptance criteria imposed on the SRs associated with the air lock. ~~]~~ 3

The containment air locks satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Each containment air lock forms part of the containment pressure boundary. As part of the containment pressure boundary, the air lock safety function is related to control of the containment leakage rate resulting from a DBA. Thus, each air lock's structural integrity and leak tightness are essential to the successful mitigation of such an event.

Each air lock is required to be OPERABLE. For the air lock to be considered OPERABLE, the air lock interlock mechanism must be OPERABLE, the air lock must be in compliance with the Type B air lock leakage test, and both air lock doors must be OPERABLE. The interlock allows only one air lock door of an air lock to be opened at one time. This provision ensures that a gross breach of containment does not exist when containment is required to be OPERABLE. Closure of a single door in each air lock is sufficient to provide a leak tight barrier following postulated events. Nevertheless, both doors are kept closed when the air lock is not being used for normal entry into or exit from containment.

BASES

APPLICABILITY	In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, the containment air locks are not required in MODE 5 to prevent leakage of radioactive material from containment. The requirements for the containment air locks during MODE 6 are addressed in LCO 3.9.3, "Containment Penetrations."

ACTIONS

The ACTIONS are modified by a Note that allows entry and exit to perform repairs on the affected air lock component. If the outer door is inoperable, then it may be easily accessed for most repairs. It is preferred that the air lock be accessed from inside primary containment by entering through the other OPERABLE air lock. However, if this is not practicable, or if repairs on either door must be performed from the barrel side of the door then it is permissible to enter the air lock through the OPERABLE door, which means there is a short time during which the containment boundary is not intact (during access through the OPERABLE door). The ability to open the OPERABLE door, even if it means the containment boundary is temporarily not intact, is acceptable because of the low probability of an event that could pressurize the containment during the short time in which the OPERABLE door is expected to be open. After each entry and exit, the OPERABLE door must be immediately closed. If ALARA conditions permit, entry and exit should be via an OPERABLE air lock.

A second Note has been added to provide clarification that, for this LCO, separate Condition entry is allowed for each air lock. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable air lock. Complying with the Required Actions may allow for continued operation, and a subsequent inoperable air lock is governed by subsequent Condition entry and application of associated Required Actions. A third Note has been included that requires entry into the applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage limit.

<u>A.1, A.2, and A.3</u>

With one air lock door inoperable in one or more containment air locks, the OPERABLE door must be verified closed (Required Action A.1) in each affected containment air lock. This ensures that a leak tight containment barrier is maintained by the use of an OPERABLE air lock door. This action must be completed within 1 hour. This specified time period is consistent with the ACTIONS of LCO 3.6.1, which requires containment be restored to OPERABLE status within 1 hour.

BASES

ACTIONS (continued)

In addition, the affected air lock penetration must be isolated by locking closed an OPERABLE air lock door within the 24 hour Completion Time. The 24 hour Completion Time is considered reasonable for locking the OPERABLE air lock door, considering the OPERABLE door of the affected air lock is being maintained closed.

Required Action A.3 verifies that an air lock with an inoperable door has been isolated by the use of a locked and closed OPERABLE air lock door. This ensures that an acceptable containment leakage boundary is maintained. The Completion Time of once per 31 days is based on engineering judgment and is considered adequate in view of the low likelihood of a locked door being mispositioned and other administrative controls. Required Action A.3 is modified by a Note that applies to air lock doors located in high radiation areas and allows these doors to be verified locked closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of the door, once it has been verified to be in the proper position, is small.

The Required Actions have been modified by two Notes. Note 1 ensures that only the Required Actions and associated Completion Times of Condition C are required if both doors in the same air lock are inoperable. With both doors in the same air lock inoperable, an OPERABLE door is not available to be closed. Required Actions C.1 and C.2 are the appropriate remedial actions. The exception of Note 1 does not affect tracking the Completion Time from the initial entry into Condition A; only the requirement to comply with the Required Actions. Note 2 allows use of the air lock for entry and exit for 7 days under administrative controls if both air locks have an inoperable door. This 7 day restriction begins when the second air lock is discovered inoperable. Containment entry may be required to perform Technical Specifications (TS) Surveillances and Required Actions, as well as other activities on equipment inside containment that are required by TS or activities on equipment that support TS-required equipment. This Note is not intended to preclude performing other activities (i.e., non-TS-required activities) if the containment was 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 the containment during the short time that the OPERABLE door is expected to be open.

BASES

ACTIONS (continued)

B.1, B.2, and B.3

With an air lock interlock mechanism inoperable in one or more air locks, the Required Actions and associated Completion Times are consistent with those specified in Condition A.

The Required Actions have been modified by two Notes. Note 1 ensures that only the Required Actions and associated Completion Times of Condition C are required if both doors in the same air lock are inoperable. With both doors in the same air lock inoperable, an OPERABLE door is not available to be closed. Required Actions C.1 and C.2 are the appropriate remedial actions. Note 2 allows entry into and exit from containment under the control of a dedicated individual stationed at the air lock to ensure that only one door is opened at a time (i.e., the individual performs the function of the interlock).

Required Action B.3 is modified by a Note that applies to air lock doors located in high radiation areas and allows these doors to be verified locked closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of the door, once it has been verified to be in the proper position, is small.

C.1, C.2, and C.3

With one or more air locks inoperable for reasons other than those described in Condition A or B, Required Action C.1 requires action to be initiated immediately to evaluate previous combined leakage rates using current air lock test results. An evaluation is acceptable since it is overly conservative to immediately declare the containment inoperable if both doors in an air lock have failed a seal test or if the overall air lock leakage is not within limits. In many instances (e.g., only one seal per door has failed), containment remains OPERABLE, yet only 1 hour (per LCO 3.6.1) would be provided to restore the air lock door to OPERABLE status prior to requiring a plant shutdown. In addition, even with both doors failing the seal test, the overall containment leakage rate can still be within limits.

Required Action C.2 requires that one door in the affected containment air lock must be verified to be closed. This action must be completed within the 1 hour Completion Time. This specified time period is consistent with the ACTIONS of LCO 3.6.1, which requires that containment be restored to OPERABLE status within 1 hour.

BASES

ACTIONS (continued)

Additionally, the affected air lock(s) must be restored to OPERABLE status within the 24 hour Completion Time ~~[~~or in accordance with the Risk Informed Completion Time Program~~]~~. The specified time period is considered reasonable for restoring an inoperable air lock to OPERABLE status, assuming that at least one door is maintained closed in each affected air lock. 3

D.1 and D.2

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Adoption of a MODE 4 end state requires the licensee to make the following commitments:~~

~~1. [LICENSEE] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision [4F].~~

~~2. [LICENSEE] will follow the guidance established in Revision 2 of WCAP-16364-NP, "Implementation Guidance for Risk Informed Modification to Selected Required Action End States at Combustion Engineering NSSS Plants (TSTF-422)," Westinghouse, May 2010.~~
~~---~~ 4

If the inoperable containment air lock cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.

Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 4). In MODE 4 there are more accident mitigation systems available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state.

Required Action D.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is

BASES

ACTIONS (continued)

not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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.

SURVEILLANCE REQUIREMENTS

SR 3.6.2.1

Maintaining containment air locks OPERABLE requires compliance with the leakage rate test requirements of the Containment Leakage Rate Testing Program. This SR reflects the leakage rate testing requirements with regard to air lock leakage (Type B leakage tests). The acceptance criteria were established during initial air lock and containment OPERABILITY testing. The periodic testing requirements verify that the air lock leakage does not exceed the allowed fraction of the overall containment leakage rate. The Frequency is required by the Containment Leakage Rate Testing Program.

The SR has been modified by two Notes. Note 1 states that an inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. This is considered reasonable since either air lock door is capable of providing a fission product barrier in the event of a DBA. Note 2 has been added to this SR requiring the results to be evaluated against the acceptance criteria which is applicable to SR 3.6.1.1. This ensures that air lock leakage is properly accounted for in determining the combined Type B and C containment leakage rate.

SR 3.6.2.2

The air lock interlock is designed to prevent simultaneous opening of both doors in a single air lock. Since both the inner and outer doors of an air lock are designed to withstand the maximum expected post accident containment pressure, closure of either door will support containment OPERABILITY. Thus, the door interlock feature supports containment OPERABILITY while the air lock is being used for personnel transit into and out of containment. Periodic testing of this interlock demonstrates that the interlock will function as designed and that simultaneous opening of the inner and outer doors will not inadvertently occur. Due to the purely mechanical nature of this interlock, and given that the interlock mechanism is not normally challenged when the containment airlock door is used for entry and exit (procedures require strict adherence to single door opening), this test is ~~only required to be performed every 24 months~~ performed in accordance with the Surveillance Frequency Control Program. 2

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~[The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage, and the potential for loss of containment OPERABILITY if the Surveillance were performed with the reactor at power. The 24 month Frequency for the interlock is justified based on generic operating experience. The 24 month Frequency is based on engineering judgment and is considered adequate given that the interlock is not challenged during the use of the airlock.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~-----]~~ 3

REFERENCES

1. 10 CFR 50, Appendix J, Option ~~[A]~~[B].
2. U FSAR, Section ~~[ ]~~ 15.
3. U FSAR, Section ~~[ ]~~ 6.2. 3 5 2
4. CE NPSD-1186-A, Technical Justification for the Risk Informed Modification to Selected Required Action End States for CEOG PWRs, October, 2001.

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.2 BASES, CONTAINMENT AIR LOCKS

1. The type of Containment (Atmospheric and Dual) is deleted since it is unnecessary. This information is provided in NUREG-1432, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS Bases contains bracketed information and/or values that are generic to all Combustion Engineering vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.

4. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.

5. The PSL Safety Analysis Report (SAR) is an updated version of the original Final Safety Analysis Report. Therefore, the proper acronym is UFSAR and is changed to reflect the document.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.2, CONTAINMENT AIR LOCKS

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 3

ITS 3.6.3, CONTAINMENT ISOLATION VALVES

Current Technical Specifications (CTS) Markup and Discussion of Changes (DOCs)

CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

LCO 3.6.3 3.6.3.1 The containment isolation valves shall be OPERABLE:

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

ACTION:

Add proposed ACTIONS NOTE 2 A02

NOTE
ACTIONS NOTE 3 — 1. Enter applicable ACTIONS for systems made inoperable by containment isolation valves.
ACTIONS NOTE 4 — 2. Enter the ACTION of LCO 3.6.1.2, "Containment Leakage," when leakage results in exceeding overall containment leakage rate acceptance criteria.

Required Actions A.1, B.1, and C.1

With one or more of the isolation valve(s) inoperable, either: Add proposed ACTION D L08

a. ~~Restore the inoperable valve(s) to OPERABLE status within 4 hours or in accordance with the Risk Informed Completion Time Program, or~~ A03

b. Isolate each affected penetration within 4 hours or in accordance with the Risk Informed Completion Time Program by use of at least one deactivated automatic valve secured in the isolation position, or

c. Isolate each affected penetration within 4 hours or in accordance with the Risk Informed Completion Time Program by use of at least one closed manual valve or blind flange; or or check valve with flow through the valve secured L02

ACTION E / ACTION E NOTE

d. Be in at least ~~HOT STANDBY~~ MODE 3 within ~~the next~~ 6 hours and in ~~HOT SHUTDOWN~~ MODE 4 within ~~the following 6~~ 12 hours. LCO 3.0.4.a is not applicable when entering HOT SHUTDOWN.

Add Completion Time of 1 hour for ACTION B M03

Add Completion Time of 72 hours for ACTION C L01

SURVEILLANCE REQUIREMENTS

~~4.6.3.1.1 The isolation valves shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit by performance of the cycling test, and verification of isolation time.~~ L03

Add proposed SR 3.6.3.1 M01

Add proposed SR 3.6.3.5 M04

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (continued)

L04

4.6.3.1.2 Each containment isolation valve shall be demonstrated OPERABLE ~~during the COLD SHUTDOWN or REFUELING MODE~~ in accordance with the Surveillance Frequency Control Program by:

an actual or simulated actuation L05

SR 3.6.3.6 a. Verifying that on ~~a Containment Isolation test signal, and/or SIAS test~~ signal, each isolation valve actuates to its isolation position. LA01

that is not locked, sealed, or otherwise secured in position, L06

SR 3.6.3.4 4.6.3.1.3 The isolation time of each power operated or automatic containment isolation valve shall be determined to be within its limit when tested pursuant to the INSERVICE TESTING PROGRAM.

~~Pages 3/4 6-21 through 3/4 6-22 have been DELETED.~~

~~Page 3/4 6-23 is the next valid page.~~

~~DELETED~~

~~DELETED~~

~~DELETED~~

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 CONTAINMENT VESSEL

CONTAINMENT VESSEL INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 CONTAINMENT VESSEL INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3 and 4.

See ITS 3.6.1

ACTION:

ACTION B
ACTION E

Without CONTAINMENT VESSEL INTEGRITY, restore CONTAINMENT VESSEL INTEGRITY within one hour or be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN~~ MODE 4 within ~~the following 30~~ 12 hours.

L10

SURVEILLANCE REQUIREMENTS

4.6.1.1 CONTAINMENT VESSEL INTEGRITY shall be demonstrated:

a. In accordance with the Surveillance Frequency Control Program by verifying that:

Add proposed action Required Actions A.2 and C.2 NOTEs 1 and 2; and SRs 3.6.3.2 and SR 3.6.3.3 NOTE

L07

Required Actions A.2 and C.2
SR 3.6.3.2
SR 3.6.3.3

1. All containment vessel penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, or check valve with flow through the valve secured, except for valves that are open on an intermittent basis under administrative control, and

ACTIONS NOTE 1

L02

2. All containment vessel equipment hatches are closed and sealed.

See ITS 3.6.1

b. By verifying that each containment vessel air lock is OPERABLE per Specification 3.6.1.3

See ITS 3.6.2

SR 3.6.3.3

* Except valves, blind flanges, and deactivated automatic valves which are located inside and outside the containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

L07

DEFINITIONS

CHANNEL FUNCTIONAL TEST

1.6 A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated signal into the channel as close to the primary sensor as practicable to verify OPERABILITY including alarm and/or trip functions.

See ITS Chapter 1.0

CONTAINMENT VESSEL INTEGRITY

1.7 CONTAINMENT VESSEL INTEGRITY shall exist when:

LCO 3.6.3

a. All containment vessel penetrations required to be closed during accident conditions are either:

1. Capable of being closed by an OPERABLE containment automatic isolation valve system, or

2. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed position except for valves that are open on an intermittent basis under administrative control.

b. All containment vessel equipment hatches are closed and sealed,

See ITS Chapter 3.6.1

c. Each containment vessel air lock is in compliance with the requirements of Specification 3.6.1.3,

See ITS Chapter 3.6.2

d. The containment leakage rates are within the limits of Specification 3.6.1.2, and

e. The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.

See ITS Chapter 3.6.1

CONTROLLED LEAKAGE

1.8 CONTROLLED LEAKAGE shall be the seal water flow supplied from the reactor coolant pump seals.

CORE ALTERATION

1.9 CORE ALTERATION shall be the movement or manipulation of any fuel, sources, reactivity control components, or other components affecting reactivity within the reactor vessel with the vessel head removed and fuel in the vessel. Exceptions to the above include shared (4 fingered) control element assemblies (CEAs) withdrawn into the upper guide structure (UGS) or evolutions performed with the UGS in place such as CEA latching/unlatching or verification of latching/unlatching which do not constitute a CORE ALTERATION. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

See ITS Chapter 1.0

CORE OPERATING LIMITS REPORT (COLR)

1.9a THE COLR is the unit-specific document that provides cycle specific parameter limits for the current operating reload cycle. These cycle-specific parameter limits shall be determined for each reload cycle in accordance with Specification 6.9.1.11. Plant operation within these limits is addressed in individual Specifications.

(2) conform to the guidance of Appendix I to 10 CFR Part 50, and
(3) include the following:

1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM.

2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and

3) Participation in a Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

See ITS 5.5

h. Containment Leakage Rate Testing Program

A program to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50 Appendix J, Option B, as modified by approved exemptions. This program is in accordance with the guidelines contained in NEI 94-01, Revision 2-A, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," except that the next Type A test performed after the December 8, 2005 Type A test shall be performed no later than December 8, 2020.

The peak calculated containment internal pressure for the design basis loss of coolant accident P_a, is 42.8 psig. The containment design pressure is 44 psig.

The maximum allowed containment leakage rate, L_a, at P_a, shall be 0.50% of containment air weight per day.

Leakage rate acceptance criteria are:

a. Containment leakage rate acceptance criterion is $\leq$ 1.0 L_a. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are < 0.60 L_a for the Type B and C tests, $\leq$ 0.75 L_a for Type A tests, and $\leq$ 0.096 L_a for secondary containment bypass leakage paths.

See ITS 5.5

SR 3.6.3.7

Verify the combined leakage rate

when pressurized to $\geq$ 42.8 psig

b. Air lock testing acceptance criteria are:

1) Overall air lock leakage rate is $\leq$ 0.05 L_a when tested at $\geq$ P_a.

2) For the personnel air lock door seal, leakage rate is < 0.01 L_a when pressurized to $\geq$ 1.0 P_a.

3) For the emergency air lock door seal, leakage rate is < 0.01 L_a when pressurized to $\geq$ 10 psig.

See ITS 5.5

CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

LCO 3.6.3 3.6.3 The containment isolation valves shall be OPERABLE.

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

ACTION:

Add proposed ACTIONS NOTE 2 A02

NOTE

ACTIONS NOTE 3
- Enter applicable ACTIONS for systems made inoperable by containment isolation valves.

ACTIONS NOTE 4
- Enter the ACTION of LCO 3.6.1.2, "Containment Leakage," when leakage results in exceeding overall containment leakage rate acceptance criteria.

With one or more of containment isolation valve(s) inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open and either: Add proposed ACTION D L08

a. ~~Restore the inoperable valve(s) to OPERABLE status within 4 hours or in accordance with the Risk Informed Completion Time Program, or~~ A03

Required Action A.1, B.1, and C.1

b. Isolate each affected penetration within 4 hours or in accordance with the Risk Informed Completion Time Program by use of at least one deactivated automatic valve secured in the isolation position, or

c. Isolate each affected penetration within 4 hours or in accordance with the Risk Informed Completion Time Program by use of at least one closed manual valve or blind flange; or check valve with flow through the valve secured L02

ACTION F

d. Be in at least ~~HOT STANDBY~~ MODE 3 within the next 6 hours and in ~~HOT SHUTDOWN~~ MODE 4 within ~~the following 6~~ 12 hours.

ACTION F NOTE

LCO 3.0.4.a is not applicable when entering HOT SHUTDOWN.

Add Completion Time of 1 hour for ACTION B M03

Add Completion Time of 72 hours for ACTION C L01

SURVEILLANCE REQUIREMENTS

~~4.6.3.1 The containment isolation valves shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit by performance of a cycling test and verification of isolation time.~~ L03

Add proposed SR 3.6.3.2 M02

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.2 Each automatic containment isolation valve shall be demonstrated OPERABLE ~~during the COLD SHUTDOWN or REFUELING MODE~~ in accordance with the Surveillance Frequency Control Program by: L04

an actual or simulated actuation L05

SR 3.6.3.7

a. Verifying that on ~~a Containment Isolation test signal (CIAS) and/or a Safety Injection test signal (SIAS)~~, each isolation valve actuates to its isolation position. LA01

that is not locked, sealed, or otherwise secured in position, L06

b. Verifying that on ~~a Containment Radiation-High test~~ signal, each containment purge valve actuates to its isolation position. LA01

an actual or simulated actuation L05

SR 3.6.3.5 4.6.3.3 The isolation time of each power-operated or automatic containment isolation valve shall be determined to be within its limit when tested pursuant to the INSERVICE TESTING PROGRAM.

~~Pages 3/4 6-22 through 3/4 6-23 have been DELETED.~~

~~Page 3/4 6-24 is the next valid page.~~

~~DELETED~~

~~DELETED~~

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

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

See ITS 3.6.1

ACTION:

ACTION B
ACTION F

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within 1 hour or be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN~~ MODE 4 within ~~the following 30~~ 12 hours.

L10

Add proposed action Required Actions A.2 and C.2 NOTEs 1 and 2; and SRs 3.6.3.3 and SR 3.6.3.4 NOTE

L07

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

Required Actions A.2 and C.2
SR 3.6.3.3
SR 3.6.3.4
ACTIONS NOTE 1

a. In accordance with the Surveillance Frequency Control Program by verifying that all penetrations** not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, or check valve with flow through the valve secured, except for valves that are open on an intermittent basis under administrative control.

L02

b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3.

See ITS 3.6.2

* In MODES 1 and 2, the RCB polar crane shall be rendered inoperable by locking the power supply breaker open.

See ITS 3.6.1.1

SR 3.6.3.4

** Except valves, blind flanges, and deactivated automatic valves which are located inside and outside the containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

L07

CONTAINMENT SYSTEMS

CONTAINMENT VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.6.3 3.6.1.7 Each containment purge supply and exhaust isolation valve shall be OPERABLE and:

SR 3.6.3.1 a. Each 48-inch containment purge supply and exhaust isolation valve shall be sealed closed.

SR 3.6.3.2 b. The 8-inch containment purge supply and exhaust isolation valves may be open for purging and/or venting as required for safety related purposes such as:

1. Maintaining containment pressure within the limits of Specification 3.6.1.4.
2. Reducing containment atmosphere airborne radioactivity and/or improving air quality to an acceptable level for containment access.

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

ACTION:

ACTION A a. With a 48-inch containment purge supply and/or exhaust isolation valve(s) open or not sealed closed, close and/or seal close the open valve(s) or isolate the penetration(s) within 4 hours,

ACTION F otherwise be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN~~ MODE 4 within ~~the following 30~~ hours.

ACTION A b. With an 8-inch containment purge supply and/or exhaust isolation valve(s) open for reasons other than those stated in Specification 3.6.1.7.b, close the open 8-inch valve(s) or isolate the penetration(s) within 4 hours,

ACTION F otherwise be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN~~ MODE 4 within ~~the following 30~~ 12 hours. L10

ACTION E c. With a containment purge supply and/or exhaust isolation valve(s) having a measured leakage rate exceeding the limits of Surveillance Requirements 4.6.1.7.3 and/or 4.6.1.7.4, within 24 hours ~~either restore the inoperable valve(s) to OPERABLE status or~~ A03 isolate the affected penetration flow path by use of at least

ACTION E.1 one closed and de-activated automatic valve with resilient seals or blind flange,

ACTION E.2 verify the affected penetration flowpath is isolated,

ACTION E.3 and perform Surveillance Requirement 4.6.1.7.3 or 4.6.1.7.4 for resilient seated valves closed to isolate the penetration flowpath,

ACTION F otherwise be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN~~ MODE 4 within ~~the following 30~~ 12 hours. L10

ACTION E.3 1. Closed and de-activated automatic valve(s) with resilient seals used to isolate the penetration flowpath(s) shall be tested in accordance with either Surveillance Requirement 4.6.1.7.3 for 48-inch valves at least once per 6 months or Surveillance Requirement 4.6.1.7.4 for 8-inch valves at least once per 92 days.

ACTION E.2 NOTE

NOTE
Verification of isolation devices by administrative means is acceptable when they are located in high radiation areas or they are locked, sealed, or otherwise secured by administrative means.

ACTION E.2 2. Verify the affected penetration flowpath is isolated once per 31 days following isolation for isolation devices outside containment and prior to entering MODE 4 from MODE 5 for isolation devices inside containment if not performed within the previous 92 days.

CONTAINMENT SYSTEMS

CONTAINMENT VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION (continued)

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1 4.6.1.7.1 Each 48-inch containment purge supply and exhaust isolation valve shall be verified to be sealed-closed in accordance with the Surveillance Frequency Control Program.

except for one purge valve in a penetration flow path while in Condition E of this LCO L09

~~4.6.1.7.2 Documentation shall be reviewed in accordance with the Surveillance Frequency Control Program to confirm that purging and venting were performed in accordance with Specification 3.6.1.7.b.~~ L11

SR 3.6.3.6 4.6.1.7.3 In accordance with the Surveillance Frequency Control Program each sealed closed 48-inch containment purge supply and exhaust isolation valve with resilient material seals shall be demonstrated OPERABLE by verifying ~~that the measured leakage rate is less than or equal to 0.05 L_a when pressurized to P_a~~.

LA02

SR 3.6.3.6 4.6.1.7.4 In accordance with the Surveillance Frequency Control Program, each 8-inch containment purge supply and exhaust isolation valve with resilient material seals shall be demonstrated OPERABLE by verifying ~~that the measured leakage rate is less than or equal to 0.05 L_a when pressurized to P_a~~.

DEFINITIONS

CHANNEL FUNCTIONAL TEST

1.6 A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated signal into the channel as close to the primary sensor as practicable to verify OPERABILITY including alarm and/or trip functions.

See ITS Chapter 1.0

CONTAINMENT VESSEL INTEGRITY

1.7 CONTAINMENT VESSEL INTEGRITY shall exist when:

LCO 3.6.3

a. All containment vessel penetrations required to be closed during accident conditions are either:

1. Capable of being closed by an OPERABLE containment automatic isolation valve system, or

2. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open on an intermittent basis under administrative control.

b. All containment vessel equipment hatches are closed and sealed,

See ITS Chapter 3.6.1

c. Each containment vessel air lock is in compliance with the requirements of Specification 3.6.1.3,

See ITS Chapter 3.6.2

d. The containment leakage rates are within the limits of Specification 3.6.1.2, and

e. The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.

See ITS Chapter 3.6.1

CONTROLLED LEAKAGE

1.8 CONTROLLED LEAKAGE shall be the seal water flow supplied from the reactor coolant pump seals.

CORE ALTERATION

1.9 CORE ALTERATION shall be the movement or manipulation of any fuel, sources, reactivity control components, or other components affecting reactivity within the reactor vessel with the vessel head removed and fuel in the vessel. Exceptions to the above include evolutions performed with the upper guide structure (UGS) in place such as control element assembly (CEA) latching/unlatching or verification of latching/unlatching which do not constitute a CORE ALTERATION. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

CORE OPERATING LIMITS REPORT (COLR)

1.9a THE COLR is the unit-specific document that provides cycle specific parameter limits for the current operating reload cycle. These cycle-specific parameter limits shall be determined for each reload cycle in accordance with Specification 6.9.1.11. Plant operation within these limits is addressed in individual Specifications.

See ITS Chapter 1.0

Leakage rate acceptance criteria are:

See ITS 5.5

a. Containment leakage rate acceptance criterion is ≤ 1.0 L_a. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are < 0.60 L_a for the Type B and C tests, ≤ 0.75 L_a for Type A tests, and ≤ 0.096 L_a for secondary containment bypass leakage paths.

SR 3.6.3.8

Verify the combined leakage rate

when pressurized to ≥ 43.48 psig

b. Air lock testing acceptance criteria are:

1) Overall air lock leakage is ≤ 0.05 L_a when tested at ≥ P_a.

2) For each door seal, leakage rate is < 0.01 L_a when pressurized to ≥ P_a.

See ITS 5.5

The provisions of T.S. 4.0.2 do not apply to test frequencies in the Containment Leak Rate Testing Program.

The provisions for T.S. 4.0.3 are applicable to the Containment Leak Rate Testing Program.

i. Deleted

DISCUSSION OF CHANGES
ITS 3.6.3, CONTAINMENT ISOLATION VALVES

ADMINISTRATIVE CHANGES

A01 In the conversion of the St. Lucie Plant (PSL) Unit 1 and Unit 2 Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG - 1432, Rev. 5.0, "Standard Technical Specifications – Combustion Engineering Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 Unit 1 CTS 3.6.3.1 and Unit 2 3.6.3 ACTIONS provide requirements to be taken for each inoperable containment isolation valve. ITS 3.6.3 includes an explicit Note (ACTION Note 2) that states, “Separate Condition entry is allowed for each penetration flow path.” This Note provides instructions for the proper application of the ACTIONS for ITS compliance. This changes the CTS by providing explicit direction for using the ACTIONS when a containment isolation valve is inoperable.

This change is acceptable because the addition of the Note reflects the CTS allowance to take appropriate Actions. This change is designated as administrative since it does not result in a technical change to the CTS.

A03 When one or more containment isolation valves are inoperable, Unit 1 CTS 3.6.3.1 and Unit 2 CTS 3.6.3 Action a requires restoring the inoperable valve(s) to OPERABLE status within 4 hours or taking one of the other specified compensatory actions. In addition, Unit 2 CTS 3.6.1.7 Action c requires restoring the inoperable valve(s) to OPERABLE status. ITS 3.6.3 does not state the requirement to restore an inoperable isolation valve to OPERABLE status but includes other compensatory Required Actions to take within in 4 hours or 72 hours, as applicable. This changes the CTS by not explicitly stating the requirement to restore an inoperable valve to OPERABLE status.

This change is acceptable because the technical requirements have not changed. Restoration of compliance with the LCO is always an available action and it is the convention in the ITS to not state such “restore” options explicitly unless it is the only action or is required for clarity. This change is designated as administrative because it does not result in any technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M01 **Unit 1 only:** CTS 3.6.3.1 does not have specific requirements for the 48 inch purge valves. ITS SR 3.6.3.1 requires verification that each 48 inch purge valve is sealed closed in accordance with the Surveillance Frequency Control Program except for purge valves in a penetration flow path while in Condition D. This changes the CTS by adding a specific Surveillance Requirement to verify each 48 inch purge valve is sealed closed in MODES 1, 2, 3, and 4. Actions are also added for excessive leakage in containment penetration flow paths containing purge valves (Refer to Discussion of Change (DOC) L08).

The purpose of ITS SR 3.6.3.1 is to ensure that a gross breach of containment is not caused by an inadvertent or spurious opening of a 48 inch containment purge valve. A sealed closed valve must have motive power to the valve operator removed. The initial Frequency in accordance with the Surveillance Frequency Control Program will be specified as 31 days consistent with ISTS 3.6.3.1 and based on an NRC initiative, Generic Issue B-24, "Containment Leakage Due to Seal Deterioration." This change is acceptable and is designated as more restrictive since the CTS does not currently require this verification for the 48 inch purge valves.

M02 **Unit 2 only:** CTS 3.6.3 and CTS 3.6.1.7 do not have a specific surveillance requirement to verify each 8 inch purge valve is closed. However, CTS 3.6.1.7.b allows the 8 inch purge supply and exhaust isolation valves to be opened for purging and venting as required with restrictions. This implies that the 8 inch purge valves must be closed at other times during MODES 1, 2, 3 and 4, ITS SR 3.6.3.2 requires verification that each 8 inch purge valve is closed in accordance with the Surveillance Frequency Control Program except when the 8 inch purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open. This changes the CTS by adding a specific Surveillance Requirement to verify each 8 inch purge valve is closed in MODES 1, 2, 3, and 4.

The purpose of ITS SR 3.6.3.2 to ensure that the 8 inch purge valves are closed as required or, if open, it is for an allowable reason. The initial Frequency in accordance with the Surveillance Frequency Control Program will be specified as 31 days consistent with ISTS 3.6.3.2 and based on the Frequency of verifying the position of containment isolation valves. This change is acceptable and is designated as more restrictive since the CTS does not currently require this verification for the 8 inch purge valves.

M03 Unit 1 CTS 3.6.3.1 and Unit 2 CTS 3.6.3 Actions require, in part, with one or more isolation valve(s) inoperable to isolate the affected penetration. CTS Actions b and c allow 4 hours to isolate the affected penetration when one or more containment isolation valves are inoperable. ITS 3.6.3 Required Action B.1 requires 1 hour to isolate the affected penetration flow path when both valves in the same penetration flow path are inoperable. This changes the CTS by prescribing the time allowed to isolate the affected penetration when both containment isolation valves in the same penetration flow path are inoperable.

The purpose of the CTS Actions is to provide compensatory actions for inoperable containment isolation valves. However, when both valves in the same penetration flow path are inoperable, the time allowed to isolate the affected penetration flow path is not prescribed and action must be taken immediately to maintain at least one isolation valve operable. Because the containment isolation valves support the leak tightness of the containment the time allowed to isolate the affected penetration should be the same as that allowed to restore an inoperable containment. The one hour Completion Time is commensurate with the Completion Time in ITS 3.6.1 (CTS 3.6.1.1 (U1) and 3.6.3 (U2)) for restoring the containment to OPERABLE status when the containment is inoperable. This change is considered more restrictive because it provides a new Condition and associated Required Actions for two inoperable containment isolation valves.in the same containment penetration flow path.

M04 **Unit 1 only:** CTS 3.6.3.1 does not have a specific surveillance requirement to perform leakage rate testing for containment purge valves with resilient seals. ITS SR 3.6.3.5 requires leakage rate testing for containment penetration flow paths containing purge valves with resilient seals in accordance with the Surveillance Frequency Control Program. This changes the CTS by adding a specific Surveillance Requirement to perform leakage rate testing for containment penetration flow paths containing purge valves with resilient seals. Actions are also added for excessive leakage in containment penetration flow paths containing purge valves (Refer to DOC L08).

The purpose of ITS SR 3.6.3.5 to perform additional leakage rate testing beyond the 10 CFR 50, Appendix J requirements to ensure OPERABILITY. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter period of time than do other seal types. The initial Frequency in accordance with the Surveillance Frequency Control Program will be specified as 184 days consistent with ISTS SR 3.6.3.6 and based on the Frequency established as part of the NRC resolution of Generic Issue B-20, "Containment Leakage Due to Seal Deterioration." This change is acceptable and is designated as more restrictive since the CTS does not currently require this Surveillance.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* Unit 1 CTS 4.6.3.1.2.a states that each containment isolation valve shall be demonstrated OPERABLE by verifying that on “a Containment Isolation test signal, and/or SIAS Test” signal actuates to its isolation position. Unit 2 CTS 4.6.3.2.a states that on “a Containment Isolation test signal (CIAS) and/or a Safety Injection test signal (SIAS)” actuates to its isolation position and Unit 2 CTS 4.6.3.2.b. states that on “a Containment Radiation High test signal” each containment purge valve actuates to its isolation position. Unit 1 ITS 3.6.3.6 and Unit 2 ITS SR 3.6.3.7 require verification that each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal. This changes the CTS by moving the detail concerning what type of signals are used to conduct the Surveillance Requirement to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to verify that the required valve automatically actuate. Also, this change is acceptable because the removed information will be adequately controlled in the

ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA02 **Unit 2 only:** *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.6.1.7.3 and 4.6.1.7.4 require the containment purge and exhaust valve leakage rate to be less than or equal to 0.05 La when pressurized to Pa. ITS SR 3.6.3.6 does not include this requirement. This changes the CTS by moving the specific acceptance criteria to the Bases.

The removal of these details, which provide specific leakage acceptance criteria for purge valve leakage, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS SR 3.6.3.6 retains the requirement to perform leakage rate testing for containment penetration flow paths containing purge valves with resilient seals. Also, this change is acceptable because these types of details will be adequately controlled by the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirement are being removed from the Technical Specifications.

<u>LESS RESTRICTIVE CHANGES</u>

L01 *(Category 3 – Relaxation of Completion Time)* Unit 1 CTS 3.6.3.1 and Unit 2 CTS 3.6.3 Actions b and c state that with one or more of the containment isolation valve(s) inoperable, isolate each affected penetration within 4 hours by use of one deactivated automatic valve secured in the isolation position, closed manual valve, or blind flange. ITS 3.6.3 ACTION C, which only applies to penetration flow paths with only one containment isolation valve and in a closed system, requires that with one or more penetration flow paths with one containment isolation valve inoperable, the penetration flow path be isolated by means similar to those specified in the CTS within 72 hours. This changes the CTS by extending the Completion Time from 4 hours to 72 hours when the inoperable containment isolation valve is in penetration flow path associated with a closed system. This also changes the Unit 2 CTS by providing an Action for a single valve penetration in a closed system, consistent with the Unit 1 CTS, instead of entering CTS 3.0.3.

The purpose of the CTS 3.6.3.1 Actions b and c is to provide a degree of assurance that the penetration flow path with an inoperable containment isolation valve maintains the containment penetration isolation boundary. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, the capacity and capability of remaining features (i.e., a closed system), a reasonable time for repairs or replacement of required features, and the low probability of a DBA occurring during the allowed

Completion Time. In the case of a penetration flow path in a closed system with an inoperable valve, 72 hours is a reasonable time period considering the relative stability of the closed system to act as a penetration isolation boundary, or the small diameter of the pipe penetration and the instrument to act as a penetration isolation boundary. This change is designated as less restrictive because additional time is allowed to restore the components to within the LCO limits than was allowed in the CTS.

L02 *(Category 4 - Relaxation of Required Action)* Unit 1 CTS 3.6.3.1 and Unit 2 CTS 3.6.3 Action b. and c. state that with one or more of the containment isolation valve(s) inoperable, isolate each affected penetration by use of at least one deactivated automatic valve secured in the isolation position (Action b), closed manual valve (Action c), or blind flange (Action c). In addition, Unit 1 CTS 4.6.1.1.a.1 and Unit 2 CTS 4.6.1.1.a require a periodic verification that the affected penetration remains isolated by the same methods. When one or more penetration flow paths with one containment isolation valve inoperable, ITS 3.6.3 Required Action A.1 requires that the affected penetration flow path be isolated by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured. In addition, ITS 3.6.3 Required Action A.2 requires a periodic verification that the affected penetration remains isolated by one of the methods required by ITS 3.6.3 Required Action A.1. This changes the CTS by allowing penetration flow paths with two containment isolation valves that have one containment isolation valve inoperable to use a check valve with flow through the valve secured as the means of isolating the penetration flow path.

The purpose of Unit 1 CTS 3.6.3.1 Unit 2 CTS 3.6.3 b and c actions, and Unit 1 CTS 4.6.1.1.a.1 and Unit 2 CTS 4.6.1.1.a Surveillances is to provide assurance that the affected penetration flow path is isolated. This change is acceptable. because the ITS Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The ITS Required Actions are consistent with safe operation under the specified Condition, considering the operability status of the redundant systems of required features, the capacity and capability of remaining features, a reasonable time for repairs or replacement of required features, and the low probability of a DBA occurring during the repair period. This change allows the flow path to be isolated by one check valve with flow through the valve secured. The requirement to isolate the flow path is retained and using a check valve with flow through the valve secured is an appropriate method of isolation. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L03 *(Category 5 – Deletion of Surveillance Requirement)* Unit 1 CTS 4.6.3.1.1 and Unit 2 CTS 4.6.3.1 describe tests that must be performed prior to returning a valve to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit. The ITS does not include these testing requirements. This changes the CTS by deleting this post-maintenance Surveillance.

The purpose of Unit 1 CTS 4.6.3.1.1 and Unit 2 CTS 4.6.3.1 is to verify OPERABILITY of containment isolation valves following their maintenance, repair, or replacement. This change is acceptable because the deleted Surveillance Requirement is not necessary to ensure that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a Frequency necessary to give confidence that the equipment can perform its assumed safety function. Any time the OPERABILITY of a system or component has been affected by repair, maintenance, modification, or replacement of a component, post-maintenance testing is required to demonstrate the OPERABILITY of the system or component. This is described in the Bases for ITS SR 3.0.1 and required under SR 3.0.1. The OPERABILITY requirements for the containment isolation valves are described in the Bases for ITS 3.6.3. In addition, the requirements of 10 CFR 50, Appendix B, Section XI (Test Control), provide adequate controls for test programs to ensure that testing incorporates applicable acceptance criteria. Compliance with 10 CFR 50, Appendix B, is required under the unit operating license. As a result, post-maintenance testing will continue to be performed and an explicit requirement in the Technical Specifications is not necessary. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L04 *(Category 7 – Relaxation Of Surveillance Frequency Change)* Unit 1 CTS 4.6.3.1.2 and Unit 2 CTS 4.6.3.2 state, in part, that each containment isolation valve shall be demonstrated Operable during Cold Shutdown or Refueling Mode in accordance with the Surveillance Frequency Control Program by verifying the valve actuates on an isolation signal. Unit 1 ITS SR 3.6.3.6 and Unit 2 ITS SR 3.6.3.7 require verifying each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated signal without requiring the verification be performed in cold shutdown or refueling modes. This changes the CTS by removing the restriction on surveillance performance during specific Modes.

The purpose of the CTS Surveillance is to demonstrate Operability of automatic containment isolation valves. The proposed change is acceptable because it does not change the method of test or frequency of the affected surveillances. The proposed change only deletes the requirement to perform this testing during shutdown or refueling conditions. In addition, allowing this testing to be performed either at refueling, shutdown or at power does not affect the applicable safety analysis conclusions and allows shutdown activities to be planned which will help reduce risk and Increase equipment availability during shutdowns. Thus, the proposed change will continue to provide adequate assurance the required components are routinely tested to ensure system operability while providing some additional flexibility in planning and scheduling the required testing. In addition, due to system designs that allow for safe testing at power, the proposed change will not adversely affect the safe operation of the plant. The proposed change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L05 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* Unit 1 CTS 4.6.3.1.2.a and Unit 2 CTS 4.6.3.2.a. and b. require verification of the containment isolation valve actuation on specific isolation test signals. ITS SR 3.6.3.6 and Unit 2 ITS SR 3.6.3.7 specify that the signal may be either an "actual" or a simulated actuation signal. This changes the Unit 1 and Unit 2 CTS by allowing the use of either an actual or a simulated signal for the test.

The purpose of CTS Surveillances is to ensure that the containment isolation valves operate correctly upon receipt of an actuation signal. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual," "simulated," or "test" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L06 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* Unit 1 CTS 4.6.3.1.2.a and CTS 4.6.1.1.a.1, and Unit 2 CTS 4.6.3.2.a. and 4.6.1.1.a require verification that each containment isolation valve actuates to its isolation position. Unit 1 ITS SR 3.6.3.6 and Unit 2 ITS SR 3.6.3.7 require verification that each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal. This changes the CTS by not requiring automatic valves locked, sealed or otherwise secured in position to be tested to verify that they automatically actuate to their isolation position.

The purpose of CTS Surveillances is to provide assurance that the automatic valves required to actuate in case of a design basis accident (DBA) isolate containment properly. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Automatic valves already in the isolated position and secured are not required to be tested to automatically actuate because, in case of a DBA, they are already in their required position and secured to prevent changing from the required position. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L07 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.6.1.1.a. requires verification that specified containment penetrations are closed. These CTS requirements also contain a note (* Note for Unit 1 and **Note for Unit 2) that exempts testing for valves which are located inside the containment and are locked, sealed or otherwise secured in the closed position. ITS 3.6.3 Required Actions A.2 and C.2, Unit 1 ITS SRs 3.6.3.2 and 3.6.3.3 and Unit 2 SRs 3.6.3.3 and 3.6.3.4 include similar requirements but contain a Note that allows valves and blind flanges in high radiation areas to be verified administratively and except valves, whether inside containment or outside containment, that are required to be closed in an accident and are locked, sealed or otherwise secured in the closed position. In addition, ITS 3.6.3 Required Actions A.2 and C.2

include a second Note that allows verification of isolation devices that are locked, sealed, or otherwise secured to also be performed using administrative means. This changes the CTS by allowing certain valves and blind flanges to not require physical verification.

The purpose of CTS 4.6.1.1.a is to provide assurance that containment penetrations are closed when necessary. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. The position of containment isolation valves and blind flanges in high radiation areas that are required to be closed can be verified administratively, not requiring physical verification. Access to high radiation areas is limited, making access to the valves and blind flanges more difficult, and mispositioning less likely. For those isolation devices, including devices outside containment, that are locked, sealed, or otherwise secured, plant procedures control their operation. Therefore, the potential for inadvertent misalignment of these devices after locking, sealing, or securing is low. In addition, all the isolation devices were verified to be in the correct position (as required by ITS 3.6.3 Required Actions A.2 and C.2) prior to locking, sealing, or otherwise securing. This change is designated as less restrictive because less stringent Surveillance Requirements and Required Actions are being applied in the ITS than were applied in the CTS.

L08 *(Category 3 – Relaxation of Completion Time)* Unit 1 CTS 3.6.3.1 does not have an explicit ACTION for secondary containment bypass leakage or containment penetration flow paths with purge valve leakage not within limits. Unit 2 CTS 3.6.3 does not have an explicit ACTION for secondary containment bypass leakage. Because CTS do not explicitly address these leakage limits, CTS 3.6.1.2 ACTION states, "With the containment leakage rate exceeding the acceptance criteria of the Containment Leakage Rate Testing Program, within 1 hour initiate action to be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours." Unit 1 ITS ACTION D requires secondary bypass leakage to be restored within limit in 4 hours and purge valve leakage to be restored within 24 hours. Unit 2 ITS ACTION D requires secondary bypass leakage to be restored within limit in 4 hours and Unit 2 ACTION E requires isolation of the affected penetration flow path when purge valve leakage is not within leakage limits. This changes the CTS by adding an explicit Action time to restore secondary containment bypass and purge valve leakage to within the leakage limits rather than requiring the unit be in Cold Shutdown within 36 hours.

The purpose of Unit 1 and Unit 2 ITS 3.6.3 ACTION D is to restore secondary containment bypass leakage to within the assumptions of the safety analysis. This change is acceptable because the 4 hour Completion Time is reasonable considering the time required to restore the leakage by isolating penetration(s) and the relative importance of secondary containment bypass leakage to the overall containment function. The Unit 1 Required Action D.1 24-hour Completion Time for purge valve leakage is acceptable considering the purge valves remain closed so that a gross breach of containment does not exist. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L09 **Unit 2 only:** *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.6.1.7.1 requires verification that each 48 inch containment purge supply and exhaust isolation valve be verified to be sealed closed in accordance with the Surveillance Frequency Control Program. ITS SR 3.6.3.1 provides the exception for purge valves in a penetration flow path while in Condition E of the LCO. This changes the CTS by not requiring the Surveillance Requirement to be met while in Condition E.

The purpose of CTS 4.6.1.7.1 is to ensure that a gross breach of the containment is not caused by an inadvertent or spurious opening of a 48 inch containment purge valve. The change is acceptable because the relaxed Surveillance Requirement acceptance criteria detail is not necessary for verification that the penetration can meet its required function. The Surveillance Requirement is not required to be met while in Condition E since the penetration flow path would be isolated and verified isolated periodically. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L10 *(Category 4 - Relaxation of Required Action)* CTS 3.6.1.1 requires the plant to be in at least MODE 3 in 6 hours and in MODE 5 within the following 30 hours when containment vessel penetrations not capable of being closed by OPERABLE containment isolation valves required to be closed during accident conditions are isolated by other allowed means (CTS 4.6.1.1).

Unit 2 CTS 3.6.1.7 Actions a, b and c require the plant to be in at least MODE 3 in 6 hours and in MODE 5 within the following 30 hours if the 48 inch containment purge valves are open or not sealed closed and the penetration is not isolated within 4 hours, the 8 inch containment purge valves are open for reasons other than containment pressure control, air quality improvement for containment access or to reduce containment atmosphere airborne radioactivity and the penetration is not isolated within 4 hours; or, the containment purge valve measured leakage exceeds limits and the penetration is not isolated within 24 hours.

Unit 1 ITS 3.6.3 ACTION E and Unit 2 ITS 3.6.3 ACTION F require that the plant be in MODE 3 within 6 hours and MODE 4 within 12 hours. This changes the end state for CTS for the applicable condition.

This change is acceptable because the modification of the end state from MODE 5 to MODE 4 is consistent with CE-NPSD-1186-A, Revision 00, “Technical Justification for the Risk-Informed Modification to Selected Required Action End States for CEOG Member PWRs,” dated October 2001 (ADAMS Accession No. 110410539). This change is designated as less restrictive because instead of requiring the plant to achieve MODE 5 (COLD SHUTDOWN), the ITS end state is MODE 4 (HOT SHUTDOWN) with LCO 3.0.4.a allowances not applicable.

L11 **Unit 2 only:** (*Category 5 – Deletion of Surveillance Requirement*) CTS 4.6.1.7.2 states, “Documentation shall be reviewed in accordance with the Surveillance Frequency Control Program to confirm that purging and venting were performed in accordance with Specification 3.6.1.7.b.” ITS 3.6.3 does not include this quality assurance detail. This changes the CTS by deleting a documentation review requirement.

The purpose of CTS 4.6.1.7.2 is to confirm that the 8 inch purge valves are opened for the purposes specified in Specification 3.6.1.7.b. This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the purge valves are Operable and can perform their required functions of supporting the containment and containment isolation. The 8 inch purge supply and exhaust valves continue to be tested in a manner and at a frequency necessary to give confidence that they can perform their intended safety function. This change is acceptable because determining if an activity was properly performed after the activity has been completed is a quality assurance attribute and has no impact to the immediate compliance of the requirement while the activity is performed and, therefore, is unnecessary and not required to ensure the LCO met or the remedial actions performed, as required. The PSL quality assurance program requires that surveillance, inspection and test reports, routine testing and technical specification be controlled under the document control program as quality related products, which provides effective monitoring of activities of this type and provide for corrective actions, if necessary. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.6 CONTAINMENT SYSTEMS

3.6.3 Containment Isolation Valves ~~(Atmospheric and Dual)~~ 1

3.6.3.1 1.7 LCO 3.6.3 Each containment isolation valve shall be OPERABLE.

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

ACTIONS

8

-----NOTES-----

4.6.1.1.a.1 1. Penetration flow paths ~~[~~except for ~~[~~4~~2]~~ inch purge valve penetration flow paths~~]~~ may be unisolated intermittently under administrative controls. 3

DOC A02 2. Separate Condition entry is allowed for each penetration flow path.

3.6.3.1 ACTIONS NOTE 1 3. Enter applicable Conditions and Required Actions for system(s) made inoperable by containment isolation valves.

3.6.3.1 ACTIONS NOTE 2 4. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~A. -----NOTE----- Only applicable to the [containment sump supply valves to the ECCS and containment spray pumps]. ----- One or more penetration flow paths with one containment isolation valve inoperable.~~	~~A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.~~ ~~AND~~	~~4 hours~~ ~~[OR~~ ~~In accordance with the Risk Informed Completion Time Program]~~

2

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	~~A.2 --------------NOTES------------~~ ~~1. Isolation devices in high radiation areas may be verified by use of administrative means.~~ ~~2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.~~ ~~-------------------------------~~ ~~Verify the affected penetration flow path is isolated.~~	~~Once per 31 days [following isolation] for isolation devices outside containment~~ ~~AND~~ ~~Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment~~ 2
~~[B~~ A. ------------NOTE------------ Only applicable to penetration flow paths with two ~~[or more]~~ containment isolation valves. --------------------------------- One or more penetration flow paths with one containment isolation valve inoperable ~~[~~for reasons other than Condition~~[s] A, E, [and F]]~~ D.	~~B~~ A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured. AND	~~[7 days]~~ 4 hours 2 ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~ 3

DOC L02

3.6.3.1 Actions b. and c.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC L07 4.6.1.1.a.1	A ~~B~~.2 --------------NOTES------------- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. ------------------------------------- Verify the affected penetration flow path is isolated.	Once per 31 days ~~[~~following isolation~~]~~ for isolation devices outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment~~]~~ 2 3
DOC M03 3.6.3.1 Actions b. and c. 3.6.1.1 Action B ~~C~~. ------------NOTE------------ Only applicable to penetration flow paths with two ~~[or more]~~ containment isolation valves. --------------------------------- One or more penetration flow paths with two ~~[or more]~~ containment isolation valves inoperable ~~[~~for reasons other than Condition~~[s] E [and F]]~~. D	~~C~~.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	1 hour 2 3 2

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C ~~D~~. ------------NOTE------------ Only applicable to penetration flow paths with only one containment isolation valve and a closed system. --------------------------------- One or more penetration flow paths with one containment isolation valve inoperable.	C ~~D~~.1	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	72 hours ~~for those penetrations that do not met the 7 day criteria~~ 2 ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~ ~~AND~~ ~~7 days for those penetrations that meet the 7 day criteria~~ 3 ~~[OR~~ ~~In accordance with the Risk Informed Completion Time Program]~~
	AND C ~~D~~.2	--------------NOTES------------- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. ------------------------------------ Verify the affected penetration flow path is isolated.	2 Once per 31 days ~~[~~following isolation~~]~~ 3

3.6.3.1 Actions b. and c.

DOC L01

DOC L07

4.6.1.1.a.1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC L08 D ~~E~~. S ~~[One or more s~~econdary containment bypass leakage ~~[or purge valve leakage]~~ not within limit.	D ~~E~~.1 Restore leakage within limit.	4 hours for secondary containment bypass leakage AND 24 hours for purge valve leakage ~~]~~ 2 3
~~F. [One or more penetration flow paths with one or more containment purge valves not within purge valve leakage limits.~~	~~F.1 Isolate the affected penetration flow path by use of at least one [closed and de-activated automatic valve with resilient seals, closed manual valve with resilient seals, or blind flange].~~ ~~AND~~	~~24 hours~~ 3

OR

One or more containment penetration flow paths with purge valve leakage not within limits

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	~~F.2 --------------NOTES------------~~ ~~1. Isolation devices in high radiation areas may be verified by use of administrative means.~~ ~~2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.~~ ~~-----------------------------------~~ ~~Verify the affected penetration flow path is isolated.~~	~~Once per 31 days for isolation devices outside containment~~ ~~AND~~ ~~Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment~~
	~~AND~~	
	~~F.3 Perform SR 3.6.3.6 for the resilient seal purge valves closed to comply with Required Action F.1.~~	~~Once per [ ] days]~~

3

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
~~G~~ E. Required Action and associated Completion Time not met.	~~G~~ E.1	Be in MODE 3.	6 hours
	AND		
	~~G~~ E.2	--------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------	
		Be in MODE 4.	12 hours

DOC L10
3.6.3.1 ACTION d.
3.6.1.1 ACTION
2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.1	~~[~~ Verify each ~~[42]~~ 48 inch purge valve is sealed closed except for ~~one~~ purge valves in a penetration flow path while in Condition ~~E~~ D of this LCO.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]]~~
~~SR 3.6.3.2~~	~~Verify each [8] inch purge valve is closed except when the [8] inch purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open.~~	~~[31 days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

DOC M01
2
3
2

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY
DOC L07	SR 3.6.3.~~3~~ 2	------------------------------NOTE------------------------------ Valves and blind flanges in high radiation areas may be verified by use of administrative means. --	2
4.6.1.1.a.1		Verify each containment isolation manual valve and blind flange that is located outside containment and not locked, sealed, or otherwise secured and is required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 3
4.6.1.1.a DOC L07	SR 3.6.3.4 3	------------------------------NOTE------------------------------ Valves and blind flanges in high radiation areas may be verified by use of administrative means. --	2
4.6.1.1.a.1 Note *		Verify each containment isolation manual valve and blind flange that is located inside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
4.6.3.1.3	SR 3.6.3.~~5~~ 4	Verify the isolation time of each automatic power operated containment isolation valve is within limits.	~~[~~In accordance with the INSERVICE TESTING PROGRAM ~~OR~~ ~~[92 days]~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~	2 3
DOC M04	SR 3.6.3.~~6~~ 5	Perform leakage rate testing for containment penetration flow paths containing purge valves with resilient seals.	~~[184 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program~~]~~ ~~AND~~ ~~Within 92 days after opening the valve~~	2 3 4

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
4.6.3.1.2.a DOC L05 DOC L06 DOC LA01 DOC L04	SR 3.6.3.~~7~~ 6	Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	2 3
	~~SR 3.6.3.8~~	~~[Verify each [ ] inch containment purge valve is blocked to restrict the valve from opening > [50]%.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]]~~	2
6.8.4.h.a	SR 3.6.3.~~9~~ 7	~~[~~ Verify the combined leakage rate for all secondary containment bypass leakage paths is ≤ ~~[~~ 0.096 L_a ~~]~~ when pressurized to ≥ ~~[~~ 42.8 psig ~~]~~.	In accordance with the Containment Leakage Rate Testing Program ~~]~~	2 3

3.6 CONTAINMENT SYSTEMS

3.6.3 Containment Isolation Valves ~~(Atmospheric and Dual)~~ 1

3.6.3
3.6.1.7
1.7

LCO 3.6.3 Each containment isolation valve shall be OPERABLE.

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

ACTIONS

8

-----NOTES-----

4.6.1.1.a 1. Penetration flow paths ~~[~~except for ~~[~~4~~2]~~ inch purge valve penetration flow paths~~]~~ may be unisolated intermittently under administrative controls. 3

DOC A02 2. Separate Condition entry is allowed for each penetration flow path.

3.6.3 ACTIONS NOTE 3. Enter applicable Conditions and Required Actions for system(s) made inoperable by containment isolation valves.

3.6.3 ACTIONS NOTE 4. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~A. -----NOTE----- Only applicable to the [containment sump supply valves to the ECCS and containment spray pumps]. -----~~ ~~One or more penetration flow paths with one containment isolation valve inoperable.~~	~~A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.~~ ~~AND~~	~~4 hours~~ ~~[OR~~ ~~In accordance with the Risk Informed Completion Time Program]~~

2

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	~~A.2~~	~~------------NOTES------------~~ ~~1. Isolation devices in high radiation areas may be verified by use of administrative means.~~ ~~2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.~~ ~~------------------------------~~ ~~Verify the affected penetration flow path is isolated.~~	~~Once per 31 days [following isolation] for isolation devices outside containment~~ ~~AND~~ ~~Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment~~
A ~~[B~~. ------------NOTE------------ Only applicable to penetration flow paths with two ~~[or more]~~ containment isolation valves. ------------------------------ One or more penetration flow paths with one containment isolation valve inoperable ~~[~~for reasons other than Condition ~~[s] A, E, [and F]]~~ D and E.	A ~~B~~.1 AND	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.	4 hours ~~[7 days]~~ ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~

2

DOC L02

3.6.3 Actions b. and c.

3.6.1.7 Actions a. and b.

3

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	A ~~B~~.2	--------------NOTES------------- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. -------------------------------------	2
DOC L07 4.6.1.1.a		Verify the affected penetration flow path is isolated.	Once per 31 days ~~[~~following isolation~~]~~ for isolation devices outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment~~]~~ 3
B ~~C~~. ------------NOTE------------ Only applicable to penetration flow paths with two ~~[or more]~~ containment isolation valves. ---------------------------------- One or more penetration flow paths with two ~~[or more]~~ containment isolation valves inoperable ~~[~~for reasons other than Condition~~[s]~~ ~~E~~ D ~~[~~and ~~F]]~~ E.	~~C~~.1	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	1 hour 2 3

3.6.3 Actions b. and c.

3.6.1.1 Action

DOC M03

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C ~~D~~. ------------NOTE------------ Only applicable to penetration flow paths with only one containment isolation valve and a closed system. --------------------------------- One or more penetration flow paths with one containment isolation valve inoperable.	~~D~~.1	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	72 hours ~~for those penetrations that do not met the 7 day criteria~~ 2 ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~ ~~AND~~ ~~7 days for those penetrations that meet the 7 day criteria~~ 3 ~~[OR~~ ~~In accordance with the Risk Informed Completion Time Program]~~
	AND C ~~D~~.2	--------------NOTES------------- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. ------------------------------------ Verify the affected penetration flow path is isolated.	2 Once per 31 days ~~[~~following isolation~~]~~ 3

3.6.3 Actions b. and c.

DOC L01

DOC L07

4.6.1.1.a

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC L08 ~~E.~~ D ~~[One or more s~~ S econdary containment bypass leakage ~~[or purge valve leakage]~~ not within limit.	~~E~~ D.1 Restore leakage within limit.	4 hours ~~for secondary containment bypass leakage~~ ~~AND~~ ~~24 hours for purge valve leakage]~~ 2 3
3.6.1.7.c ~~F~~ E. ~~[~~ One or more penetration flow paths with ~~one or more~~ containment purge valves not within ~~purge valve~~ leakage limits.	~~F~~ E.1 Isolate the affected penetration flow path by use of at least one ~~[~~closed and de-activated automatic valve with resilient seals, closed manual valve with resilient seals, or blind flange~~]~~. AND	24 hours 2 3

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
3.6.1.7.c. NOTE	~~F~~ E.2 --------------NOTE~~S~~------------- ~~1.~~ Isolation devices in high radiation areas may be verified by use of administrative means. ~~2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.~~ -------------------------------------	2
3.6.1.7.c.2	Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment 3
3.6.1.7.c.1	AND ~~F~~ E.3 Perform SR 3.6.3.6 for the resilient seal ~~purge~~ valves closed to comply with Required Action ~~F~~ E. 1.	Once per ~~[~~ 92 ~~]~~ days for 8 inch valves 2 AND Once per 6 months for 48 inch valves. 2

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
DOC L10 3.6.3 ACTION d. 3.6.1.1 ACTION 3.6.1.7 Action a., b. and c. ~~G~~ F. Required Action and associated Completion Time not met.	~~G~~ F.1	Be in MODE 3.	6 hours
	AND		
	~~G~~ F.2	--------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. -------------------------------------- Be in MODE 4.	12 hours

2

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
4.6.1.7.1 3.6.1.7.a DOC L09	SR 3.6.3.1 ~~[~~ Verify each ~~[42]~~ 48 inch purge valve is sealed closed except for ~~one~~ purge valves in a penetration flow path while in Condition E of this LCO.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]]~~ 2 3
3.6.1.7.b DOC M02	SR 3.6.3.2 Verify each [8] inch purge valve is closed except when the [8] inch purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 3

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
DOC L07 3.6.1.7 Action c. NOTE 4.6.1.1.a	SR 3.6.3.3 ------------------------------NOTE----------------------------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. --- Verify each containment isolation manual valve and blind flange that is located outside containment and not locked, sealed, or otherwise secured and is required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 3
DOC L07 3.6.1.7 Action c. NOTE 4.6.1.1.a Note **	SR 3.6.3.4 ------------------------------NOTE----------------------------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. --- Verify each containment isolation manual valve and blind flange that is located inside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days

SURVEILLANCE REQUIREMENTS (continued)

CTS	SURVEILLANCE		FREQUENCY
4.6.3.3	SR 3.6.3.5	Verify the isolation time of each automatic power operated containment isolation valve is within limits.	~~[~~In accordance with the INSERVICE TESTING PROGRAM ~~OR~~ ~~[92 days]~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~ 3
4.6.1.7.3 4.6.1.7.4 3.6.1.7.c.1 DOC LA02	SR 3.6.3.6	Perform leakage rate testing for containment penetration flow paths containing purge valves with resilient seals.	~~[184 days~~ 2 ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 3 ~~AND~~ ~~Within 92 days after opening the valve~~ 4

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
4.6.3.2.a 4.6.3.2.b DOC L05 DOC L06 DOC LA01 DOC L04 SR 3.6.3.7	Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 3
~~SR 3.6.3.8~~	~~[Verify each [ ] inch containment purge valve is blocked to restrict the valve from opening > [50]%.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]]~~ 2
6.8.4.h.a SR 3.6.3.~~9~~ 8	~~[~~ Verify the combined leakage rate for all secondary containment bypass leakage paths is ≤ ~~[L~~$_a$~~]~~ 0.096 when pressurized to ≥ ~~[~~ 43.48 psig~~]~~.	In accordance with the Containment Leakage Rate Testing Program ~~]~~ 2 3

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.3, CONTAINMENT ISOLATION VALVES

1. The type of Containment (Atmospheric and Dual) is deleted since it is unnecessary (only one Containment Specification is used in the St. Lucie Plant (PSL) Unit 1 and 2 ITS). This information is provided in NUREG-1432, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation.

2. Changes are made (additions, deletions, and/or changes) to the ITS which reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS contains bracketed information and/or values that are generic to Combustion Engineering vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

4. ISTS SR 3.6.3.6 requires performance of leakage rate testing for containment penetration flow paths containing purge valves with resilient seals within 92 days after opening a valve. Unit 2 ITS SR 3.6.3.6 deletes the 92 day verification requirement based on Unit 2 current licensing basis. The Surveillance is performed in accordance with the Surveillance Frequency Control Program as implemented per Amendment No. 173 (ADAMS Accession No. ML15127A066). Unit 1 ITS SR 3.6.3.5 has been added as a more restrictive requirement (See DOC M04) that deletes the 92 day verification requirement consistent with the PSL Unit 2 Surveillance. The Surveillance is performed at a frequency in accordance with the Surveillance Frequency Control Program.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.6 CONTAINMENT SYSTEMS

B 3.6.3 Containment Isolation Valves ~~(Atmospheric and Dual)~~ 1

BASES

BACKGROUND

The containment isolation valves form part of the containment pressure boundary and provide a means for fluid penetrations not serving accident consequence limiting systems to be provided with two isolation barriers that are closed on an automatic isolation signal. These isolation devices are either passive or active (automatic). Manual valves, de-activated automatic valves secured in their closed position (including check valves with flow through the valve secured), blind flanges, and closed systems are considered passive devices. Check valves, or other automatic valves designed to close without operator action following an accident, are considered active devices. Two barriers in series are provided for each penetration so that no single credible failure or malfunction of an active component can result in a loss of isolation or leakage that exceeds limits assumed in the safety analysis. One of these barriers may be a closed system.

Containment isolation occurs upon receipt of a high containment pressure signal , Safety Injection Actuation Signal or a ~~low Reactor Coolant System (RCS) pressure~~ containment high radiation signal. The containment isolation signal closes automatic containment isolation valves in fluid penetrations not required for operation of Engineered Safety Feature systems in order to prevent leakage of radioactive material. Upon actuation of safety injection, automatic containment isolation valves also isolate systems not required for containment or RCS heat removal. Other penetrations are isolated by the use of valves in the closed position or blind flanges. As a result, the containment isolation valves (and blind flanges) help ensure that the containment atmosphere will be isolated in the event of a release of radioactive material to containment atmosphere from the RCS following a Design Basis Accident (DBA). 2

The OPERABILITY requirements for containment isolation valves help ensure that containment is isolated within the time limits assumed in the safety analysis. Therefore, the OPERABILITY requirements provide assurance that the containment function assumed in the accident analysis will be maintained.

~~The purge valves were designed for intermittent operation, providing a means of removing airborne radioactivity caused by minor RCS leakage prior to personnel entry into containment. There are two sets of purge valves: normal purge and exhaust valves and minipurge and exhaust valves.~~ The ~~normal and minipurge~~ supply and exhaust lines are each supplied with inside and outside containment isolation valves but share common supply and exhaust penetration lines. 2

BASES

BACKGROUND (continued)

to provide a means of removing airborne radioactivity following operation of the containment airborne radioactivity removal system and

The ~~normal~~ purge valves are designed ~~for~~ purging the containment atmosphere to the unit stack while introducing filtered makeup from the outside to provide adequate ventilation for personnel comfort when the unit is shut down during refueling operations and maintenance. ~~Motor operated isolation valves are provided inside the containment, and air operated isolation valves are provided outside the containment.~~ The valves are operated manually from the control room. The valves will close automatically upon receipt of a containment ~~purge~~ isolation signal~~.~~ ~~The air operated valves~~ fail closed upon a loss of air. Because of their large size, the ~~normal~~ purge valves ~~in some units~~ are not qualified for automatic closure from their open position under DBA conditions. Therefore, the ~~normal~~ purge valves are normally maintained closed in MODES 1, 2, 3, and 4 to ensure the containment boundary is maintained. 2

Air operated isolation valves are provided both inside and outside the containment.

and

Open ~~normal~~ purge valves~~, or a failure of the minipurge valves to close,~~ following an accident that releases contamination to the containment atmosphere would cause a significant increase in the containment leakage rate. 2

APPLICABLE SAFETY ANALYSES

The containment isolation valve LCO was derived from the assumptions related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during major accidents. As part of the containment boundary, containment isolation valve OPERABILITY supports leak tightness of the containment. Therefore, the safety analysis of any event requiring isolation of containment is applicable to this LCO.

The DBAs that result in a release of radioactive material within containment are a loss of coolant accident (LOCA), a main steam line break, and a control element assembly ejection accident. In the analysis for each of these accidents, it is assumed that containment isolation valves are either closed or function to close within the required isolation time following event initiation. This ensures that potential paths to the environment through containment isolation valves (including containment purge valves) are minimized. The safety analysis assumes that the ~~normal~~ purge valves are closed at event initiation. 2

The DBA analysis assumes that, within 60 seconds after the accident, isolation of the containment is complete and leakage terminated except for the design leakage rate, L_a. The containment isolation total response time of 60 seconds includes signal delay, diesel generator startup (for loss of offsite power), and containment isolation valve stroke times.

BASES

APPLICABLE SAFETY ANALYSES (continued)

The single failure criterion required to be imposed in the conduct of unit safety analyses was considered in the original design of the containment purge valves. Two valves in series on each purge line provide assurance that both the supply and exhaust lines could be isolated even if a single failure occurred. ~~The inboard and outboard isolation valves on each line are provided with diverse power sources, motor operated and pneumatically operated spring closed, respectively.~~ This arrangement was designed to preclude common mode failures from disabling both valves on a purge line. 2

The purge valves may be unable to close in the environment following a LOCA. Therefore, each of the purge valves is required to remain sealed closed during MODES 1, 2, 3, and 4. In this case, the single failure criterion remains applicable to the containment purge valves due to failure in the control circuit associated with each valve. Again, the purge system valve design precludes a single failure from compromising the containment boundary as long as the system is operated in accordance with the subject LCO. ~~The minipurge valves are capable of closing under accident conditions. Therefore, they are allowed to be open for limited periods during power operation.~~ 2

The containment isolation valves satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Containment isolation valves form a part of the containment boundary. The containment isolation valve safety function is related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during a DBA.

The automatic power operated isolation valves are required to have isolation times within limits and to actuate on an automatic isolation signal. The purge valves must be maintained sealed closed ~~[or have blocks installed to prevent full opening]~~. ~~[Blocked purge valves also actuate on an automatic signal.]~~ The valves covered by this LCO are listed with their associated stroke times in the U FSAR (Ref. 1). 3 5

The normally closed isolation valves are considered OPERABLE when manual valves are closed, automatic valves are de-activated and secured in their closed position, blind flanges are in place, and closed systems are intact. These passive isolation valves or devices are those listed in Reference ~~2~~ 1. 2

BASES

LCO (continued)

Purge valves with resilient seals ~~[~~and secondary containment bypass valves~~]~~ must meet additional leakage rate requirements. The other containment isolation valve leakage rates are addressed by LCO 3.6.1, "Containment," as Type C testing. 3

This LCO provides assurance that the containment isolation valves and purge valves will perform their designed safety functions to minimize the loss of reactor coolant inventory and establish the containment boundary during accidents.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, the containment isolation valves are not required to be OPERABLE in MODE 5. The requirements for containment isolation valves during MODE 6 are addressed in LCO 3.9.3, "Containment Penetrations."

ACTIONS

The ACTIONS are modified by a Note allowing penetration flow paths, except for 48 ~~[42]~~ inch purge valve penetration flow paths, to be unisolated intermittently under administrative controls. These administrative controls consist of stationing a dedicated operator at the valve controls, who is in continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for containment isolation is indicated. Due to the size of the containment purge line penetration and the fact that those penetrations exhaust directly from the containment atmosphere to the environment, these valves may not be opened under administrative controls. 3

A second Note has been added to provide clarification that, for this LCO, separate Condition entry is allowed for each penetration flow path. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable containment isolation valve. Complying with the Required Actions may allow for continued operation, and subsequent inoperable containment isolation valves are governed by subsequent Condition entry and application of associated Required Actions.

The ACTIONS are further modified by a third Note, which ensures that appropriate remedial actions are taken, if necessary, if the affected systems are rendered inoperable by an inoperable containment isolation valve.

BASES

ACTIONS (continued)

A fourth Note has been added that requires entry into the applicable Conditions and Required Actions of LCO 3.6.1 when leakage results in exceeding the overall containment leakage limit.

~~-------------------------------- REVIEWER'S NOTE --------------------------------~~
~~The bracketed phrase "following isolation" in the Completion Times for Required Actions A.2, B.2, D.2, F.2 and F.3 is only applicable to plants that have adopted a Risk Informed Completion Time Program.~~ 4
~~---~~

~~A.1 and A.2~~

~~In the event one containment isolation valve in one or more penetration flow paths is inoperable, the affected penetration flow path must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic containment isolation valve, a closed manual valve, a blind flange, and a check valve with flow through the valve secured. For penetrations isolated in accordance with Required Action A.1, the device used to isolate the penetration should be the closest available one to containment. Required Action A.1 must be completed within the 4 hour Completion Time [or in accordance with the Risk Informed Completion Time Program]. The 4 hour Completion Time is reasonable, considering the time required to isolate the penetration and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4 (Refs. 4 and 5).~~

~~For affected penetration flow paths that cannot be restored to OPERABLE status within the 4 hour Completion Time and that have been isolated in accordance with Required Action A.1, the affected penetration flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that containment penetrations required to be isolated following an accident and no longer capable of being automatically isolated will be in the isolation position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification that those isolation devices outside containment and capable of being mispositioned are in the correct position. The Completion Time of "once per 31 days [following isolation] for isolation devices outside containment" is appropriate considering the fact that the devices are operated under administrative controls and the probability of their misalignment is low. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the~~ 2

BASES

ACTIONS (continued)

~~previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.~~

~~Condition A has been modified by a Note indicating that this Condition is only applicable to [the containment sump supply valves to the ECCS and containment spray pumps].~~ 2

~~----------REVIEWER'S NOTE----------~~
~~Condition A is only applicable to the containment isolation valves that do not meet the conditions to extend the Completion Time to 7 days.~~ 4
~~------------------------------------~~

~~Required Action A.2 is modified by two Notes. Note 1 applies to isolation devices located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned. Therefore, the probability of misalignment of these devices, once they have been verified to be in the proper position, is small.~~ 2

A

~~[~~ ~~B~~A.1 and ~~B~~A.2

~~----------REVIEWER'S NOTE----------~~
~~Adoption of the 7 day Completion Time is contingent on the conditions identified in Reference 4.~~

~~1. Individual licensees requesting CIV Completion Time relaxations should state in their plant-specific application that they have verified that the Joint Applications Report (JAR) results apply to their plant. Licensees should verify that the relaxed Completion Times will only apply to penetrations analyzed to meet the risk guidelines of Regulatory Guide 1.177 and fall within the 14 containment penetration configurations considered in the JAR. Any other containment penetration configurations not analyzed in the JAR must be supported by a plant-specific analysis. Licensee submittals must retain the current Completion Times for the three configurations that~~ 4

BASES

ACTIONS (continued)

~~were not analyzed in the JAR: containment sump supply valves to the ECCS and containment spray systems pumps, valves associated with the main feedwater system, and main steam isolation valves.~~

~~2. Licensees should provide sufficient quantitative or qualitative substantiation to demonstrate that external events will not affect the results of the analysis supporting the extended Completion Times.~~

~~3. Licensees should state that they have verified acceptable PRA quality as described in Regulatory Guide 1.177.~~

~~4. Licensees should require verification of the operability of the remaining CIV(s) in a penetration flow path before entering the extended Completion Time for corrective maintenance. The JAR assumes that the penetrations remain physically intact in MODES in which these valves are to be operable during corrective maintenance. Licensees should describe in their plant specific application how the affected penetration will remain physically intact, or state that the penetration will be isolated so as to not permit a release to the outside environment.~~ 4

~~5. The licensee should consider the additive nature of multiple failed CIVs, and the possibility of entering multiple AOTs and verify that these situations will result in risks consistent with the incremental conditional core damage probability (ICCDP) and incremental large early release probability (ICLERP) guidelines so that defense-in-depth for the safety systems will be maintained.~~

~~---~~

In the event one containment isolation valve in one or more penetration flow paths is inoperable, except for ~~Condition A and for~~ purge valve leakage and ~~shield building~~ secondary containment bypass leakage not within limit~~]~~, the affected penetration flow path must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic containment isolation valve, a closed manual valve, a blind flange, and a check valve with flow through the valve secured. For penetrations isolated in accordance with Required Action ~~B~~ A.1, the device used to isolate the penetration should be the closest available one to containment. Required Action ~~B~~ A.1 must be completed within the ~~[7 day]~~ 4 hours Completion Time ~~[~~or in accordance with the Risk Informed Completion Time Program~~]~~. The ~~[7 day]~~ 4 hours Completion Time is reasonable, considering the time required to isolate the penetration and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4 ~~(References 3 and 4)~~. 2 3 2 3 2

BASES

ACTIONS (continued)

For affected penetration flow paths that cannot be restored to OPERABLE status within the ~~[7 day]~~ 4 hours Completion Time and that have been isolated in accordance with Required Action ~~B~~ A.1, the affected penetration flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that containment penetrations required to be isolated following an accident and no longer capable of being automatically isolated will be in the isolation position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification that those isolation devices outside containment and capable of being mispositioned are in the correct position. The Completion Time of "once per 31 days ~~[~~following isolation~~]~~ for isolation devices outside containment" is appropriate considering the fact that the devices are operated under administrative controls and the probability of their misalignment is low. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility. 3 2 3

Condition ~~B~~ A has been modified by a Note indicating that this Condition is only applicable to those penetration flow paths with two ~~[or more]~~ containment isolation valves. For penetration flow paths with only one containment isolation valve and a closed system, Condition ~~D~~ C provides appropriate actions. 2 3 2

Required Action ~~B~~ A.2 is modified by two Notes. Note 1 applies to isolation devices located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned. Therefore, the probability of misalignment of these devices, once they have been verified to be in the proper position, is small.~~]~~ 2 3

BASES

ACTIONS (continued)

B ~~C~~.1 2

With two ~~[or more]~~ containment isolation valves in one or more penetration flow paths inoperable, ~~[~~except for purge valve leakage and secondary containment ~~shield building~~ bypass leakage not within limit~~]~~, the affected penetration flow path must be isolated within 1 hour. 3 The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. The 1 hour Completion Time is consistent with the ACTIONS of LCO 3.6.1. In the event the affected penetration is isolated in accordance with Required Action B ~~C~~.1, the affected penetration must be verified to be isolated on a periodic basis per Required Action A ~~B~~.2, which remains in effect. 2 This periodic verification is necessary to assure leak tightness of containment and that penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying each affected penetration flow path is isolated is appropriate considering the fact that the valves are operated under administrative controls and the probability of their misalignment is low.

Condition B ~~C~~ is modified by a Note indicating this Condition is only applicable to penetration flow paths with two ~~[or more]~~ containment isolation valves. Condition A ~~B~~ of this LCO addresses the condition of one containment isolation valve inoperable in this type of penetration flow path. 2 3 2

C ~~D~~.1 and ~~D~~.2 2

With one or more penetration flow paths with one containment isolation valve inoperable, the inoperable valve must be restored to OPERABLE status or the affected penetration flow path must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. A check valve may not be used to isolate the affected penetration. Required Action C ~~D~~.1 must be completed within the ~~[~~72~~]~~ hour Completion Time ~~for those penetrations that do not meet the 7 day Completion Time criteria and [7 days] for penetrations that do meet the 7 day Completion Time criteria~~. 2 3 ~~[~~Alternatively, a Completion Time can be determined in accordance with the Risk Informed Completion Time Program.~~]~~ 3 The specified time period is reasonable, considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of supporting containment OPERABILITY during

BASES

ACTIONS (continued)

MODES 1, 2, 3, and 4. In the event the affected penetration is isolated in accordance with Required Action ~~D~~ C.1, the affected penetration flow path must be verified to be isolated on a periodic basis. This is necessary to assure leak tightness of containment and that containment penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days ~~[~~following isolation~~]~~ for verifying that each affected penetration flow path is isolated is appropriate considering the valves are operated under administrative controls and the probability of their misalignment is low. 2 3

Condition ~~D~~ C is modified by a Note indicating that this Condition is only applicable to those penetration flow paths with only one containment isolation valve and a closed system. The closed system must meet the requirements of Reference ~~4~~ 2. This Note is necessary since this Condition is written to specifically address those penetration flow paths in a closed system. 2

Required Action ~~D~~ C.2 is modified by two Notes. Note 1 applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

~~[E~~ D. 1

With the secondary containment bypass leakage rate (SR 3.6.3.~~9~~ 7) ~~[or purge valve leakage rate (SR 3.6.3.8~~ 5)~~]~~ not within limit, the assumptions of the safety analysis are not met. Therefore, the leakage must be restored to within limit. Restoration of the secondary containment bypass leakage can be accomplished by isolating the penetration(s) that caused the limit to be exceeded by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. When ~~a~~ the applicable secondary containment bypass leakage penetration is isolated, the leakage rate for the isolated penetration is assumed to be the actual pathway leakage through the isolation device. If two isolation devices are used to isolate the penetration, the leakage rate is assumed to be the lesser actual pathway leakage of the two devices. The 4 hour Completion Time for secondary 2 3

BASES

ACTIONS (continued)

containment bypass leakage is reasonable considering the time required to restore the leakage by isolating the penetration(s) and the relative importance of secondary containment bypass leakage to the overall containment function. ~~[~~The 24 hour Completion Time ~~for~~ to restore purge valve leakage is acceptable considering the purge valves remain closed so that a gross breach of containment does not exist.~~]~~ 3

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~[The bracketed options provided in ACTION E reflect options in plant design and options in adopting the associated leakage rate Surveillances.~~

~~The options (in both ACTION E and ACTION F for purge valve leakage, are based primarily on the design - if leakage rates can be measured separately for each purge valve, ACTION F is intended to apply. This would be required to be able to implement Required Action F.3. Should the design allow only for leak testing both purge valves simultaneously, then the Completion Time for ACTION E should include the "24 hours for purge valve leakage" and ACTION F should be eliminated.]]~~
~~--~~ 4

~~[F.1, F.2, and F.3~~

~~In the event one or more containment purge valves in one or more penetration flow paths are not within the purge valve leakage limits, purge valve leakage must be restored to within limits, or the affected penetration must be isolated. The method of isolation must be by the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a [closed and de-activated automatic valve with resilient seals, a closed manual valve with resilient seals, or a blind flange]. A purge valve with resilient seals utilized to satisfy Required Action F.1 must have been demonstrated to meet the leakage requirements of SR 3.6.3.6. The specified Completion Time is reasonable, considering that one containment purge valve remains closed so that a gross breach of containment does not exist.~~ 3

~~In accordance with Required Action F.2, this penetration flow path must be verified to be isolated on a periodic basis. The periodic verification is necessary to ensure that containment penetrations required to be isolated following an accident, which are no longer capable of being automatically isolated, will be in the isolation position should an event occur. This Required Action does not require any testing or valve manipulation. Rather, it involves verification that those isolation devices outside~~

1

BASES

ACTIONS (continued)

~~containment capable of being mispositioned are in the correct position. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.~~

~~For the containment purge valve with resilient seal that is isolated in accordance with Required Action F.1, SR 3.6.3.6 must be performed at least once every [92] days. This assures that degradation of the resilient seal is detected and confirms that the leakage rate of the containment purge valve does not increase during the time the penetration is isolated. The normal Frequency for SR 3.6.3.6, 184 days, is based on an NRC initiative, Generic Issue B-20 (Ref. 6). Since more reliance is placed on a single valve while in this Condition, it is prudent to perform the SR more often. Therefore, a Frequency of once per [92] days was chosen and has been shown to be acceptable based on operating experience.~~

~~Required Action F.2 is modified by two Notes. Note 1 applies to isolation devices located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned.]~~

3

E

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

2

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~

~~Adoption of a MODE 4 end state requires the licensee to make the following commitments:~~

~~1. [LICENSEE] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision [4F].~~

4

BASES

ACTIONS (continued)

~~2. [LICENSEE] will follow the guidance established in Revision 2 of WCAP-16364-NP, "Implementation Guidance for Risk Informed Modification to Selected Required Action End States at Combustion Engineering NSSS Plants (TSTF-422)," Westinghouse, May 2010.~~ 4

If the Required Actions and associated Completion Times are not met, the plant must be brought to a MODE in which overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.

Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. ~~7~~ 3). In MODE 4 there are more accident mitigation systems available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state. 2

Required Action ~~G~~ E.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit. 2

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.

SURVEILLANCE REQUIREMENTS

~~[~~ SR 3.6.3.1

This Surveillance is designed to ensure that a gross breach of containment is not caused by an inadvertent or spurious opening of a ~~[42]~~ 48 inch containment purge valve. Detailed analysis of the purge valves failed to conclusively demonstrate their ability to close during a LOCA in time to limit offsite doses. Therefore, these valves are required to be in the sealed closed position during MODES 1, 2, 3, and 4. A containment purge valve that is sealed closed must have motive power to the valve operator removed. This can be accomplished by de-energizing the source of electric power or by removing the air supply to the valve operator. In this application, the term "sealed" has no connotation of leak 3

BASES

SURVEILLANCE REQUIREMENTS (continued)

tightness. ~~[The Frequency of 31 days is a result of an NRC initiative, Generic Issue B-24 (Ref. 8), related to containment purge valve use during unit operations.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~REVIEWER'S NOTE~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~]~~

D

This SR is not required to be met while in Condition ~~E~~ of this LCO. This is reasonable since the penetration flow path would be isolated. ~~]~~ 3

, the time the leakage is not within limits is restricted, and if the purge valve leakage results in exceeding the overall containment leakage rate acceptance criteria, action will be required in accordance with LCO 3.6.1.

~~SR 3.6.3.2~~

~~This SR ensures that the minipurge valves are closed as required or, if open, open for an allowable reason. If a purge valve is open in violation of this SR, the valve is considered inoperable. If the inoperable valve is not otherwise known to have excessive leakage when closed, it is not considered to have leakage outside of limits. The SR is not required to be met when the purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open. The minipurge valves are capable of closing in the environment following a LOCA. Therefore, these valves are allowed to be open for limited periods of time. [The 31 day Frequency is consistent with other containment isolation valve requirements discussed in SR 3.6.3.3.~~ 2

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~REVIEWER'S NOTE~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~]~~

1

BASES

SURVEILLANCE REQUIREMENTS (continued)

2

SR 3.6.3.~~3~~ 2

This SR requires verification that each containment isolation manual valve and blind flange located outside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification that those containment isolation valves outside containment and capable of being mispositioned are in the correct position. ~~[Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day Frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions.~~

~~OR~~

3

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------REVIEWER'S NOTE-----------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~

4

3

Containment isolation valves that are open under administrative controls are not required to meet the SR during the time the valves are open. This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

The Note applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3, and 4 and for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in the proper position, is small. 2

SR 3.6.3.~~4~~ 3 2

This SR requires verification that each containment isolation manual valve and blind flange located inside containment and not locked, sealed,

2

BASES

SURVEILLANCE REQUIREMENTS (continued)

or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the containment boundary is within design limits. For containment isolation valves inside containment, the Frequency of "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is appropriate, since these containment isolation valves are operated under administrative controls and the probability of their misalignment is low. Containment isolation valves that are open under administrative controls are not required to meet the SR during the time that they are open. This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

The Note allows valves and blind flanges located in high radiation areas to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, and 3 for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in their proper position, is small.

4

SR 3.6.3.~~5~~ 2

Verifying that the isolation time of each automatic power operated containment isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analysis.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of [18 months] or the reference to the Surveillance Frequency Control Program should be used.~~
~~---~~ 4

~~[~~ The Frequency of this SR is in accordance with ~~[~~the INSERVICE TESTING PROGRAM~~] [92 days.~~

~~OR~~ 3

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.]]~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~-----]~~ 3

SR 3.6.3.~~6~~ 5 2

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option ~~[A][~~B~~]~~, (Ref. ~~9~~ 4), is required to ensure OPERABILITY. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. Leakage testing of the purge valves in each penetration flow path is performed simultaneously and OPERABILITY is demonstrated by verifying that the measured leakage rate is ≤ 0.05 La when pressurized to Pa. ~~[Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), a Frequency of 184 days was established as part of the NRC resolution of Generic Issue B-20, "Containment Leakage Due to Seal Deterioration" (Ref. 6).~~ 2 2 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~-----]~~ 3

~~Additionally, this SR must be performed within 92 days after opening the valve. The 92 day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (beyond that occurring to a valve that has not been opened). Thus, decreasing the interval is a prudent measure after a valve has been opened.~~ 2

SR 3.6.3.~~7~~ 6 2

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures each automatic containment isolation

BASES

SURVEILLANCE REQUIREMENTS (continued)

valve will actuate to its isolation position on a containment isolation actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. ~~[The [18] month Frequency was developed considering it is prudent that this SR be performed only during a unit outage, since isolation of penetrations would eliminate cooling water flow and disrupt normal operation of many critical components. Operating experience has shown that these components usually pass this SR when performed on the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~---]~~ 3

~~[SR 3.6.3.8~~

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~This SR is only required for those units with resilient seal purge valves allowed to be open during [MODE 1, 2, 3, or 4] and having blocking devices on the valves that are not permanently installed.~~
~~---~~

~~Verifying that each [42] inch containment purge valve is blocked to restrict opening to ≤ [50]% is required to ensure that the valves can close under DBA conditions within the times assumed in the analyses of References 1 and 2. If a LOCA occurs, the purge valves must close to maintain containment leakage within the values assumed in the accident analysis. At other times when purge valves are required to be capable of closing (e.g., during movement of [recently] irradiated fuel assemblies), pressurization concerns are not present, thus the purge valves can be fully open. [The [18] month Frequency is appropriate because the blocking devices are typically removed only during a refueling outage.~~ 3

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~---------------------------------REVIEWER'S NOTE----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~ 3

7

~~[~~ SR 3.6. 3.~~9~~ 2 3

This SR ensures that the combined leakage rate of all secondary containment bypass leakage paths is less than or equal to the specified leakage rate. This provides assurance that the assumptions in the safety analysis are met. The leakage rate of each bypass leakage path is assumed to be the maximum pathway leakage (leakage through the worse of the two isolation valves) unless the penetration is isolated by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. In this case, the leakage rate of the isolated bypass leakage path is assumed to be the actual pathway leakage through the isolation device. If both isolation valves in the penetration are closed, the actual leakage rate is the lesser leakage rate of the two valves. The Frequency is required by the Containment Leakage Rate Testing Program. This SR simply imposes additional acceptance criteria.

~~[~~Bypass leakage is considered part of L_a. unless specifically exempted.~~]~~ 3

REFERENCES

1. U FSAR, Section ~~[ ]~~ 6.2. 3 5

~~2. FSAR, Section [ ].~~

~~3. Combustion Engineering Owners Group (CEOG) Joint Applications Report (JAR) CE-NPSD-1168, Joint Applications Report for Containment Isolation Valve AOT Extension, dated June 1999.~~

~~4. NRC Safety Evaluation for CEOG Joint Applications Report CE-NPSD-1168, "JAR for CIV AOT Extension," dated June 26, 2000.~~

~~5~~ 2. Standard Review Plan 6.2.4.

~~6. Generic Issue B-20.~~

~~7~~ 3. CE NPSD-1186-A, Technical Justification for the Risk Informed Modification to Selected Required Action End States for CEOG PWRs, October, 2001. 2

BASES

REFERENCES (continued)

~~8. Generic Issue B-24.~~ 2

4

~~9~~. 10 CFR 50, Appendix J, Option ~~[A]~~~~[~~B~~]~~. 3

B 3.6 CONTAINMENT SYSTEMS

B 3.6.3 Containment Isolation Valves ~~(Atmospheric and Dual)~~ 1

BASES

BACKGROUND

The containment isolation valves form part of the containment pressure boundary and provide a means for fluid penetrations not serving accident consequence limiting systems to be provided with two isolation barriers that are closed on an automatic isolation signal. These isolation devices are either passive or active (automatic). Manual valves, de-activated automatic valves secured in their closed position (including check valves with flow through the valve secured), blind flanges, and closed systems are considered passive devices. Check valves, or other automatic valves designed to close without operator action following an accident, are considered active devices. Two barriers in series are provided for each penetration so that no single credible failure or malfunction of an active component can result in a loss of isolation or leakage that exceeds limits assumed in the safety analysis. One of these barriers may be a closed system.

Containment isolation occurs upon receipt of a containment high radiation high containment pressure signal, Safety Injection Actuation Signal or a ~~low Reactor Coolant System (RCS) pressure~~ signal. The containment isolation signal closes automatic containment isolation valves in fluid penetrations not required for operation of Engineered Safety Feature systems in order to prevent leakage of radioactive material. Upon actuation of safety injection, automatic containment isolation valves also isolate systems not required for containment or RCS heat removal. Other penetrations are isolated by the use of valves in the closed position or blind flanges. As a result, the containment isolation valves (and blind flanges) help ensure that the containment atmosphere will be isolated in the event of a release of radioactive material to containment atmosphere from the RCS following a Design Basis Accident (DBA). 2

The OPERABILITY requirements for containment isolation valves help ensure that containment is isolated within the time limits assumed in the safety analysis. Therefore, the OPERABILITY requirements provide assurance that the containment function assumed in the accident analysis will be maintained.

The 8 inch purge valves were designed for intermittent operation, providing a means of removing airborne radioactivity caused by minor RCS leakage prior to personnel entry into containment. There are two sets of purge valves: normal (48 inch) purge and exhaust valves and ~~mini~~8 inch supply purge and exhaust valves. The normal and ~~mini~~8 inch purge supply and exhaust lines are each supplied with inside and outside containment isolation valves but share common supply and exhaust penetration lines. 2

BASES

BACKGROUND (continued)

The normal purge valves are designed for purging the containment atmosphere to the unit stack while introducing filtered makeup from the outside to provide adequate ventilation for personnel comfort when the unit is shut down during refueling operations and maintenance. ~~Motor operated isolation valves are provided inside the containment, and air operated isolation valves are provided outside the containment.~~ Air operated isolation valves are provided both inside and outside the containment. The valves are operated manually from the control room. The valves will close automatically upon receipt of a containment ~~purge~~ isolation signal~~.~~ and ~~The air operated valves~~ fail closed upon a loss of air. Because of their large size, the normal purge valves ~~in some units~~ are not qualified for automatic closure from their open position under DBA conditions. Therefore, the normal purge valves are normally maintained closed in MODES 1, 2, 3, and 4 to ensure the containment boundary is maintained. 2

Open normal purge valves, or a failure of the ~~mini~~ 8 inch purge valves to close, following an accident that releases contamination to the containment atmosphere would cause a significant increase in the containment leakage rate. 2

APPLICABLE SAFETY ANALYSES

The containment isolation valve LCO was derived from the assumptions related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during major accidents. As part of the containment boundary, containment isolation valve OPERABILITY supports leak tightness of the containment. Therefore, the safety analysis of any event requiring isolation of containment is applicable to this LCO.

The DBAs that result in a release of radioactive material within containment are a loss of coolant accident (LOCA), a main steam line break, and a control element assembly ejection accident. In the analysis for each of these accidents, it is assumed that containment isolation valves are either closed or function to close within the required isolation time following event initiation. This ensures that potential paths to the environment through containment isolation valves (including containment purge valves) are minimized. The safety analysis assumes that the normal purge valves are closed at event initiation.

The DBA analysis assumes that, within 60 seconds after the accident, isolation of the containment is complete and leakage terminated except for the design leakage rate, L_a. The containment isolation total response time of 60 seconds includes signal delay, diesel generator startup (for loss of offsite power), and containment isolation valve stroke times.

BASES

APPLICABLE SAFETY ANALYSES (continued)

The single failure criterion required to be imposed in the conduct of unit safety analyses was considered in the original design of the containment purge valves. Two valves in series on each purge line provide assurance that both the supply and exhaust lines could be isolated even if a single failure occurred. ~~The inboard and outboard isolation valves on each line are provided with diverse power sources, motor operated and pneumatically operated spring closed, respectively.~~ This arrangement was designed to preclude common mode failures from disabling both valves on a purge line. 2

The purge valves may be unable to close in the environment following a LOCA. Therefore, each of the purge valves is required to remain sealed closed during MODES 1, 2, 3, and 4. In this case, the single failure criterion remains applicable to the containment purge valves due to failure in the control circuit associated with each valve. Again, the purge system valve design precludes a single failure from compromising the containment boundary as long as the system is operated in accordance with the subject LCO. The 8 inch ~~mini~~purge valves are capable of closing under accident conditions. Therefore, they are allowed to be open for limited periods during power operation. 2

The containment isolation valves satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Containment isolation valves form a part of the containment boundary. The containment isolation valve safety function is related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during a DBA.

The automatic power operated isolation valves are required to have isolation times within limits and to actuate on an automatic isolation signal. The purge valves must be maintained sealed closed ~~[or have blocks installed to prevent full opening]~~. ~~[Blocked purge valves also actuate on an automatic signal.]~~ The valves covered by this LCO are listed with their associated stroke times in the UFSAR (Ref. 1). 3 5

The normally closed isolation valves are considered OPERABLE when manual valves are closed, automatic valves are de-activated and secured in their closed position, blind flanges are in place, and closed systems are intact. These passive isolation valves or devices are those listed in Reference ~~2~~ 1. 2

 1

BASES

LCO (continued)

Purge valves with resilient seals ~~[~~and secondary containment bypass valves~~]~~ must meet additional leakage rate requirements. The other containment isolation valve leakage rates are addressed by LCO 3.6.1, "Containment," as Type C testing. 3

This LCO provides assurance that the containment isolation valves and purge valves will perform their designed safety functions to minimize the loss of reactor coolant inventory and establish the containment boundary during accidents.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, the containment isolation valves are not required to be OPERABLE in MODE 5. The requirements for containment isolation valves during MODE 6 are addressed in LCO 3.9.3, "Containment Penetrations."

ACTIONS

The ACTIONS are modified by a Note allowing penetration flow paths, except for ~~[42]~~ 48 inch purge valve penetration flow paths, to be unisolated intermittently under administrative controls. These administrative controls consist of stationing a dedicated operator at the valve controls, who is in continuous communication with the control room. In this way, the penetration can be rapidly isolated when a need for containment isolation is indicated. Due to the size of the containment purge line penetration and the fact that those penetrations exhaust directly from the containment atmosphere to the environment, these valves may not be opened under administrative controls. 3

A second Note has been added to provide clarification that, for this LCO, separate Condition entry is allowed for each penetration flow path. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable containment isolation valve. Complying with the Required Actions may allow for continued operation, and subsequent inoperable containment isolation valves are governed by subsequent Condition entry and application of associated Required Actions.

The ACTIONS are further modified by a third Note, which ensures that appropriate remedial actions are taken, if necessary, if the affected systems are rendered inoperable by an inoperable containment isolation valve.

 2

BASES

ACTIONS (continued)

A fourth Note has been added that requires entry into the applicable Conditions and Required Actions of LCO 3.6.1 when leakage results in exceeding the overall containment leakage limit.

~~------------------------------ REVIEWER'S NOTE ------------------------------~~
~~The bracketed phrase "following isolation" in the Completion Times for Required Actions A.2, B.2, D.2, F.2 and F.3 is only applicable to plants that have adopted a Risk Informed Completion Time Program.~~ 4
~~---~~

~~A.1 and A.2~~

~~In the event one containment isolation valve in one or more penetration flow paths is inoperable, the affected penetration flow path must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic containment isolation valve, a closed manual valve, a blind flange, and a check valve with flow through the valve secured. For penetrations isolated in accordance with Required Action A.1, the device used to isolate the penetration should be the closest available one to containment. Required Action A.1 must be completed within the 4 hour Completion Time [or in accordance with the Risk Informed Completion Time Program]. The 4 hour Completion Time is reasonable, considering the time required to isolate the penetration and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4 (Refs. 4 and 5).~~ 2

~~For affected penetration flow paths that cannot be restored to OPERABLE status within the 4 hour Completion Time and that have been isolated in accordance with Required Action A.1, the affected penetration flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that containment penetrations required to be isolated following an accident and no longer capable of being automatically isolated will be in the isolation position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification that those isolation devices outside containment and capable of being mispositioned are in the correct position. The Completion Time of "once per 31 days [following isolation] for isolation devices outside containment" is appropriate considering the fact that the devices are operated under administrative controls and the probability of their misalignment is low. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the~~

BASES

ACTIONS (continued)

~~previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.~~

~~Condition A has been modified by a Note indicating that this Condition is only applicable to [the containment sump supply valves to the ECCS and containment spray pumps].~~ 2

~~-----REVIEWER'S NOTE-----~~
~~Condition A is only applicable to the containment isolation valves that do not meet the conditions to extend the Completion Time to 7 days.~~ 4
~~-----~~

~~Required Action A.2 is modified by two Notes. Note 1 applies to isolation devices located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned. Therefore, the probability of misalignment of these devices, once they have been verified to be in the proper position, is small.~~ 2

A

~~[B~~A.1 and ~~B~~A.2

~~-----REVIEWER'S NOTE-----~~
~~Adoption of the 7 day Completion Time is contingent on the conditions identified in Reference 4.~~

~~1. Individual licensees requesting CIV Completion Time relaxations should state in their plant-specific application that they have verified that the Joint Applications Report (JAR) results apply to their plant. Licensees should verify that the relaxed Completion Times will only apply to penetrations analyzed to meet the risk guidelines of Regulatory Guide 1.177 and fall within the 14 containment penetration configurations considered in the JAR. Any other containment penetration configurations not analyzed in the JAR must be supported by a plant-specific analysis. Licensee submittals must retain the current Completion Times for the three configurations that~~ 4

BASES

ACTIONS (continued)

~~were not analyzed in the JAR: containment sump supply valves to the ECCS and containment spray systems pumps, valves associated with the main feedwater system, and main steam isolation valves.~~

~~2. Licensees should provide sufficient quantitative or qualitative substantiation to demonstrate that external events will not affect the results of the analysis supporting the extended Completion Times.~~

~~3. Licensees should state that they have verified acceptable PRA quality as described in Regulatory Guide 1.177.~~

~~4. Licensees should require verification of the operability of the remaining CIV(s) in a penetration flow path before entering the extended Completion Time for corrective maintenance. The JAR assumes that the penetrations remain physically intact in MODES in which these valves are to be operable during corrective maintenance. Licensees should describe in their plant specific application how the affected penetration will remain physically intact, or state that the penetration will be isolated so as to not permit a release to the outside environment.~~

~~5. The licensee should consider the additive nature of multiple failed CIVs, and the possibility of entering multiple AOTs and verify that these situations will result in risks consistent with the incremental conditional core damage probability (ICCDP) and incremental large early release probability (ICLERP) guidelines so that defense-in-depth for the safety systems will be maintained.~~ 4

In the event one containment isolation valve in one or more penetration flow paths is inoperable, except for ~~Condition A and for~~ purge valve leakage and ~~shield building~~ secondary containment bypass leakage not within limit~~]~~, the affected penetration flow path must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic containment isolation valve, a closed manual valve, a blind flange, and a check valve with flow through the valve secured. For penetrations isolated in accordance with Required Action ~~B~~A.1, the device used to isolate the penetration should be the closest available one to containment. Required Action ~~B~~A.1 must be completed within the ~~[7 day]~~ 4 hours Completion Time ~~[~~or in accordance with the Risk Informed Completion Time Program~~]~~. The ~~[7 day]~~ 4 hours Completion Time is reasonable, considering the time required to isolate the penetration and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4 ~~(References 3 and 4)~~.

BASES

ACTIONS (continued)

For affected penetration flow paths that cannot be restored to OPERABLE status within the ~~[7 day]~~ 4 hours Completion Time and that have been isolated in accordance with Required Action ~~B~~ A.1, the affected penetration flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that containment penetrations required to be isolated following an accident and no longer capable of being automatically isolated will be in the isolation position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification that those isolation devices outside containment and capable of being mispositioned are in the correct position. The Completion Time of "once per 31 days ~~[~~following isolation~~]~~ for isolation devices outside containment" is appropriate considering the fact that the devices are operated under administrative controls and the probability of their misalignment is low. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility. 3 2 3

Condition ~~B~~ A has been modified by a Note indicating that this Condition is only applicable to those penetration flow paths with two ~~[or more]~~ containment isolation valves. For penetration flow paths with only one containment isolation valve and a closed system, Condition ~~D~~ C provides appropriate actions. 2 3 2

Required Action ~~B~~ A.2 is modified by two Notes. Note 1 applies to isolation devices located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned. Therefore, the probability of misalignment of these devices, once they have been verified to be in the proper position, is small.~~]~~ 2 3

BASES

ACTIONS (continued)

B
~~C~~.1 2

With two ~~[or more]~~ containment isolation valves in one or more penetration flow paths inoperable, ~~[~~except for purge valve leakage and ~~shield building~~ secondary containment bypass leakage not within limit~~]~~, the affected penetration flow path must be isolated within 1 hour. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. The 1 hour Completion Time is consistent with the ACTIONS of LCO 3.6.1. In the event the affected penetration is isolated in accordance with Required Action ~~C~~ B.1, the affected penetration must be verified to be isolated on a periodic basis per Required Action ~~B~~ A.2, which remains in effect. This periodic verification is necessary to assure leak tightness of containment and that penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying each affected penetration flow path is isolated is appropriate considering the fact that the valves are operated under administrative controls and the probability of their misalignment is low. 3 2

Condition ~~C~~ B is modified by a Note indicating this Condition is only applicable to penetration flow paths with two ~~[or more]~~ containment isolation valves. Condition ~~B~~ A of this LCO addresses the condition of one containment isolation valve inoperable in this type of penetration flow path. 2 3 2

~~D~~ C.1 and ~~D~~ C.2 2

With one or more penetration flow paths with one containment isolation valve inoperable, the inoperable valve must be restored to OPERABLE status or the affected penetration flow path must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. A check valve may not be used to isolate the affected penetration. Required Action ~~D~~ C.1 must be completed within the ~~[~~72~~]~~ hour Completion Time ~~for those penetrations that do not meet the 7 day Completion Time criteria and [7 days] for penetrations that do meet the 7 day Completion Time criteria~~. ~~[~~Alternatively, a Completion Time can be determined in accordance with the Risk Informed Completion Time Program.~~]~~ The specified time period is reasonable, considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of supporting containment OPERABILITY during 2 3 3

BASES

ACTIONS (continued)

MODES 1, 2, 3, and 4. In the event the affected penetration is isolated in accordance with Required Action ~~D~~C.1, the affected penetration flow path must be verified to be isolated on a periodic basis. This is necessary to assure leak tightness of containment and that containment penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days [following isolation] for verifying that each affected penetration flow path is isolated is appropriate considering the valves are operated under administrative controls and the probability of their misalignment is low. 2 3

Condition ~~D~~C is modified by a Note indicating that this Condition is only applicable to those penetration flow paths with only one containment isolation valve and a closed system. The closed system must meet the requirements of Reference ~~4~~2. This Note is necessary since this Condition is written to specifically address those penetration flow paths in a closed system. 2

Required Action ~~D~~C.2 is modified by two Notes. Note 1 applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

~~[E~~D. 1

With the secondary containment bypass leakage rate (SR 3.6.3.~~9~~8) ~~[or purge valve leakage rate (SR 3.6.3.6)]~~ not within limit, the assumptions of the safety analysis are not met. Therefore, the leakage must be restored to within limit. Restoration can be accomplished by isolating the penetration(s) that caused the limit to be exceeded by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. When a penetration is isolated, the leakage rate for the isolated penetration is assumed to be the actual pathway leakage through the isolation device. If two isolation devices are used to isolate the penetration, the leakage rate is assumed to be the lesser actual pathway leakage of the two devices. The 4 hour Completion Time for secondary 3 2

1

BASES

ACTIONS (continued)

containment bypass leakage is reasonable considering the time required to restore the leakage by isolating the penetration(s) and the relative importance of secondary containment bypass leakage to the overall containment function. ~~[The 24 hour Completion Time for purge valve leakage is acceptable considering the purge valves remain closed so that a gross breach of containment does not exist.]~~

3

~~REVIEWER'S NOTE~~
~~[The bracketed options provided in ACTION E reflect options in plant design and options in adopting the associated leakage rate Surveillances.~~

~~The options (in both ACTION E and ACTION F for purge valve leakage, are based primarily on the design - if leakage rates can be measured separately for each purge valve, ACTION F is intended to apply. This would be required to be able to implement Required Action F.3. Should the design allow only for leak testing both purge valves simultaneously, then the Completion Time for ACTION E should include the "24 hours for purge valve leakage" and ACTION F should be eliminated.]]~~

4

E

~~[~~ ~~F~~.1, ~~F~~.2, and ~~F~~.3

In the event one or more ~~containment purge valves in one or more~~ penetration flow paths are not within the purge valve leakage limits, purge valve leakage must be restored to within limits, or the affected penetration must be isolated. The method of isolation must be by the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a ~~[~~closed and de-activated automatic valve with resilient seals, a closed manual valve with resilient seals, or a blind flange~~]~~. A ~~purge~~ valve with resilient seals utilized to satisfy Required Action E ~~F~~.1 must have been demonstrated to meet the leakage requirements of SR 3.6.3.6. The specified Completion Time is reasonable, considering that one ~~containment purge~~ valve with a resilient seal remains closed so that a gross breach of containment does not exist.

3

In accordance with Required Action E ~~F~~.2, this penetration flow path must be verified to be isolated on a periodic basis. The periodic verification is necessary to ensure that containment penetrations required to be isolated following an accident, which are no longer capable of being automatically isolated, will be in the isolation position should an event occur. This Required Action does not require any testing or valve manipulation. Rather, it involves verification that those isolation devices outside

2

1

BASES

ACTIONS (continued)

containment capable of being mispositioned are in the correct position. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

For the ~~containment purge~~ valve with a resilient seal that is isolated in accordance with Required Action ~~F~~ E.1, SR 3.6.3.6 must be performed at least once every ~~[~~92~~]~~ days for 8 inch valves and once every 6 months for 48 inch valves. This assures that degradation of the resilient seal is detected and confirms that the leakage rate of the ~~containment purge valve~~ isolation device does not increase during the time the penetration is isolated. ~~The normal Frequency for SR 3.6.3.6, 184 days, is based on an NRC initiative, Generic Issue B-20 (Ref. 6).~~ Since more reliance is placed on a single ~~valve~~ isolation device while in this Condition, it is prudent to perform the SR more often. Therefore, a Frequency of once per ~~[~~92~~]~~ days for 8 inch valves and once every 6 months for 48 inch valves was chosen and has been shown to be acceptable based on operating experience.

Required Action ~~F~~ E.2 is modified by ~~two Notes.~~ a Note that applies to isolation devices located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. ~~Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned.]~~

3

~~G~~ F.1 and ~~G~~ F.2

2

~~REVIEWER'S NOTE~~
~~Adoption of a MODE 4 end state requires the licensee to make the following commitments:~~

~~1. [LICENSEE] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision [4F].~~

4

2

BASES

ACTIONS (continued)

~~2. [LICENSEE] will follow the guidance established in Revision 2 of WCAP-16364-NP, "Implementation Guidance for Risk Informed Modification to Selected Required Action End States at Combustion Engineering NSSS Plants (TSTF-422)," Westinghouse, May 2010.~~ 4

If the Required Actions and associated Completion Times are not met, the plant must be brought to a MODE in which overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.

Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. ~~7~~ 3). In MODE 4 there are more accident mitigation systems available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state. 2

Required Action ~~G~~ F.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit. 2

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.

SURVEILLANCE REQUIREMENTS

~~[~~ SR 3.6.3.1 3

This Surveillance is designed to ensure that a gross breach of containment is not caused by an inadvertent or spurious opening of a 48 ~~[42]~~ inch containment purge valve. Detailed analysis of the purge valves failed to conclusively demonstrate their ability to close during a LOCA in time to limit offsite doses. Therefore, these valves are required to be in the sealed closed position during MODES 1, 2, 3, and 4. A containment purge valve that is sealed closed must have motive power to the valve operator removed. This can be accomplished by de-energizing the source of electric power or by removing the air supply to the valve operator. In this application, the term "sealed" has no connotation of leak

BASES

SURVEILLANCE REQUIREMENTS (continued)

tightness. ~~[The Frequency of 31 days is a result of an NRC initiative, Generic Issue B-24 (Ref. 8), related to containment purge valve use during unit operations.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~-----]~~ 3

This SR is not required to be met while in Condition E of this LCO. This is reasonable since the penetration flow path would be isolated. ~~]~~

SR 3.6.3.2

This SR ensures that the ~~mini~~ 8 inch purge valves are closed as required or, if open, open for an allowable reason. If a purge valve is open in violation of this SR, the valve is considered inoperable. If the inoperable valve is not otherwise known to have excessive leakage when closed, it is not considered to have leakage outside of limits. The SR is not required to be met when the purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open. The ~~mini~~ 8 inch purge valves are capable of closing in the environment following a LOCA. Therefore, these valves are allowed to be open for limited periods of time. ~~[The 31 day Frequency is consistent with other containment isolation valve requirements discussed in SR 3.6.3.3.~~ 2 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~-----]~~ 3

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.3

This SR requires verification that each containment isolation manual valve and blind flange located outside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification that those containment isolation valves outside containment and capable of being mispositioned are in the correct position. ~~[Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day Frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------REVIEWER'S NOTE-----------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~---]~~ 3

Containment isolation valves that are open under administrative controls are not required to meet the SR during the time the valves are open. This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

The Note applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3, and 4 and for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in the proper position, is small. 2

SR 3.6.3.4

This SR requires verification that each containment isolation manual valve and blind flange located inside containment and not locked, sealed,

BASES

SURVEILLANCE REQUIREMENTS (continued)

or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the containment boundary is within design limits. For containment isolation valves inside containment, the Frequency of "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is appropriate, since these containment isolation valves are operated under administrative controls and the probability of their misalignment is low. Containment isolation valves that are open under administrative controls are not required to meet the SR during the time that they are open. This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing.

The Note allows valves and blind flanges located in high radiation areas to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, and 3 for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in their proper position, is small.

SR 3.6.3.5

Verifying that the isolation time of each automatic power operated containment isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analysis.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of [18 months] or the reference to the Surveillance Frequency Control Program should be used.~~
~~--~~ 4

~~[~~ The Frequency of this SR is in accordance with ~~[~~the INSERVICE TESTING PROGRAM~~] [92 days~~.

~~OR~~ 3

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.]]~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-----------------------------REVIEWER'S NOTE-----------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~---]~~ 3

SR 3.6.3.6

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option ~~[A]~~[B~~]~~, (Ref. ~~9~~), is required to ensure OPERABILITY. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types~~. [Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), a Frequency of 184 days was established as part of the NRC resolution of Generic Issue B-20, "Containment Leakage Due to Seal Deterioration" (Ref. 6).~~ 2 2 3

4 Leakage testing of the purge valves in each penetration flow path is performed simultaneously and OPERABILITY IS demonstrated by verifying that the measured leakage rate is ≤ 0.05 La when pressurized to Pa.

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------REVIEWER'S NOTE-----------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~---]~~ 3

~~Additionally, this SR must be performed within 92 days after opening the valve. The 92 day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (beyond that occurring to a valve that has not been opened). Thus, decreasing the interval is a prudent measure after a valve has been opened.~~ 2

SR 3.6.3.7

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures each automatic containment isolation

 1

BASES

SURVEILLANCE REQUIREMENTS (continued)

valve will actuate to its isolation position on a containment isolation actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. ~~[The [18] month Frequency was developed considering it is prudent that this SR be performed only during a unit outage, since isolation of penetrations would eliminate cooling water flow and disrupt normal operation of many critical components. Operating experience has shown that these components usually pass this SR when performed on the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~--]~~ 3

~~[SR 3.6.3.8~~

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~This SR is only required for those units with resilient seal purge valves allowed to be open during [MODE 1, 2, 3, or 4] and having blocking devices on the valves that are not permanently installed.~~
~~--~~

~~Verifying that each [42] inch containment purge valve is blocked to restrict opening to ≤ [50]% is required to ensure that the valves can close under DBA conditions within the times assumed in the analyses of References 1 and 2. If a LOCA occurs, the purge valves must close to maintain containment leakage within the values assumed in the accident analysis. At other times when purge valves are required to be capable of closing (e.g., during movement of [recently] irradiated fuel assemblies), pressurization concerns are not present, thus the purge valves can be fully open. [The [18] month Frequency is appropriate because the blocking devices are typically removed only during a refueling outage.~~ 3

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

 2

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]]~~ 3

8

~~[~~ SR 3.6.3.~~9~~ 2

This SR ensures that the combined leakage rate of all secondary containment bypass leakage paths is less than or equal to the specified leakage rate. This provides assurance that the assumptions in the safety analysis are met. The leakage rate of each bypass leakage path is assumed to be the maximum pathway leakage (leakage through the worse of the two isolation valves) unless the penetration is isolated by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. In this case, the leakage rate of the isolated bypass leakage path is assumed to be the actual pathway leakage through the isolation device. If both isolation valves in the penetration are closed, the actual leakage rate is the lesser leakage rate of the two valves. The Frequency is required by the Containment Leakage Rate Testing Program. This SR simply imposes additional acceptance criteria.

~~[~~Bypass leakage is considered part of L_a. unless specifically exempted.~~]]~~ 3

REFERENCES

1. U FSAR, Section ~~[ ]~~ 6.2. 3 5

~~2. FSAR, Section [ ].~~

~~3. Combustion Engineering Owners Group (CEOG) Joint Applications Report (JAR) CE-NPSD-1168, Joint Applications Report for Containment Isolation Valve AOT Extension, dated June 1999.~~

~~4. NRC Safety Evaluation for CEOG Joint Applications Report CE-NPSD-1168, "JAR for CIV AOT Extension," dated June 26, 2000.~~ 2

2

~~5~~. Standard Review Plan 6.2.4.

~~6. Generic Issue B-20.~~

3

~~7~~. CE NPSD-1186-A, Technical Justification for the Risk Informed Modification to Selected Required Action End States for CEOG PWRs, October, 2001.

BASES

REFERENCES (continued)

~~8. Generic Issue B-24.~~ 2

4

~~9~~. 10 CFR 50, Appendix J, Option ~~[A]~~~~[~~B~~]~~. 3

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.3 BASES, CONTAINMENT ISOLATION VALVES

1. The type of Containment (Atmospheric and Dual) is deleted since it is unnecessary (only one Containment Specification is used in the St. Lucie Plant (PSL)ITS). This information is provided in NUREG-1432, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation.

2. Changes are made (additions, deletions, and/or changes) to the ITS Bases that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS contains bracketed information and/or values that are generic to Combustion Engineering vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.

4. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.

5. The PSL Safety Analysis Report (SAR) is an updated version of the original Final Safety Analysis Report. Therefore, the proper acronym is UFSAR and is changed to reflect the document.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.3, CONTAINMENT ISOLATION VALVES

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 4

ITS 3.6.4, Containment Pressure

Current Technical Specifications (CTS) Markup and Discussion of Changes (DOCs)

CONTAINMENT SYSTEMS

~~INTERNAL~~ CONTAINMENT PRESSURE

A02

LIMITING CONDITION FOR OPERATION

LCO 3.6.4 3.6.1.4 ~~Primary~~ containment ~~internal~~ pressure shall be ~~maintained between -0.490 and +0.5~~ ≥ -0.49 psig and ≤ +0.50 psig.

A02

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

ACTION:

ACTION A

ACTION B

With the containment internal pressure outside of the limits above, restore the internal pressure to within the limits within 1 hour or be in at least ~~HOT STANDBY~~ MODE 3 within the next 6 hours and in ~~HOT SHUTDOWN~~ MODE 4 within the following 6 hours. LCO 3.0.4.a is not applicable when entering ~~HOT SHUTDOWN~~ MODE 4.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1 4.6.1.4 The primary containment internal pressure shall be determined to be within the limits in accordance with the Surveillance Frequency Control Program.

CONTAINMENT SYSTEMS

CONTAINMENT

A02

~~INTERNAL~~ PRESSURE

LIMITING CONDITION FOR OPERATION

A02

LCO 3.6.4 3.6.1.4 ~~Primary~~ containment ~~internal~~ pressure shall be ~~maintained between -0.420 and +0.400~~ psig.

≥ -0.42 psig and ≤ +0.40

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

ACTION:

ACTION A

With the containment internal pressure outside of the limits above, restore the internal pressure to within the limits within 1 hour or be in at least ~~HOT STANDBY~~ within the next 6 hours and in ~~HOT SHUTDOWN~~ within the following 6 hours. LCO 3.0.4.a is not applicable when entering ~~HOT SHUTDOWN~~.

ACTION B

MODE 4

MODE 3

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1 4.6.1.4 The primary containment internal pressure shall be determined to be within the limits in accordance with the Surveillance Frequency Control Program.

DISCUSSION OF CHANGES
ITS 3.6.4, CONTAINMENT PRESSURE

ADMINISTRATIVE CHANGES

A01 In the conversion of the St. Lucie Plant (PSL) Unit 1 and 2 Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1432, Rev. 5.0, "Standard Technical Specifications – Combustion Engineering Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 Unit 1 CTS 3.6.1.4 states, "Primary containment internal pressure shall be maintained between -0.490 and +0.5 psig" and Unit 2 CTS 3.6.1.4 states, in part, "Primary containment internal pressure shall be maintained between -0.420 and +0.400 psig." ITS 3.6.4 states "Containment pressure shall be ≥ -0.49 psig and ≤ +0.50 psig (Unit 1) ≥ -0.42 psig and ≤ +0.40 (Unit 2)." Additionally, the title for CTS 3.6.1.4 is "Internal Pressure." The title for ITS 3.6.4 is "Containment Pressure." This changes the CTS by changing the title and changing the presentation of the LCO statement.

This change is a wording preference that does not change the requirements for Containment Pressure. This change is designated as an administrative change and is acceptable because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.6 CONTAINMENT SYSTEMS

3.6.4 Containment Pressure ~~(Atmospheric and Dual)~~ 1

≥ -0.49 psig and ≤ +0.50 psig

3.6.1.4 LCO 3.6.4 Containment pressure shall be ~~[Dual: > 14.375 psia and < 27 inches water gauge] [or] [Atmospheric: ≥ -0.3 psig and ≤ +1.5 psig]~~. 3

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

ACTIONS

	CONDITION	REQUIRED ACTION		COMPLETION TIME
ACTION	A. Containment pressure not within limits.	A.1	Restore containment pressure to within limits.	1 hour
ACTION	B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours
		AND		
		B.2	--------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------- Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
4.6.1.4	SR 3.6.4.1	Verify containment pressure is within limits.	~~[12 hours~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 3

3.6 CONTAINMENT SYSTEMS

3.6.4 Containment Pressure ~~(Atmospheric and Dual)~~ 1

3.6.1.4 LCO 3.6.4 Containment pressure shall be ≥ -0.42 psig and ≤ +0.40 ~~[Dual: ≥ 14.375 psia and ≤ 27 inches water gauge] [or] [Atmospheric: ≥ -0.3 psig and ≤ +1.5 psig]~~. 3

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
ACTION	A. Containment pressure not within limits.	A.1 Restore containment pressure to within limits.	1 hour
ACTION	B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 --------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------- Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
4.6.1.4	SR 3.6.4.1	Verify containment pressure is within limits.	~~[12 hours~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 3

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.4, CONTAINMENT PRESSURE

1. The type of Containment (Atmospheric and Dual) is deleted since it is unnecessary. This information is provided in NUREG-1432, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation.

2. Changes are made (additions, deletions, and/or changes) to the ITS which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS contains bracketed information and/or values that are generic to Combustion Engineering vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.6 CONTAINMENT SYSTEMS

B 3.6.4~~B~~ Containment Pressure ~~(Dual)~~ 1

BASES

BACKGROUND

The containment pressure is limited, during normal operation, to preserve the initial conditions assumed in the accident analyses for a loss of coolant accident (LOCA) or main steam line break (MSLB). These limits also prevent the containment pressure from exceeding the containment design negative pressure differential, with respect to the ~~outside atmosphere~~ shield building annulus, in the event of inadvertent actuation of the Containment Spray System. 2

Containment pressure is a process variable that is monitored and controlled. The containment pressure limits are derived from the input conditions used in the containment functional analyses and the containment structure external pressure analysis. Should operation occur outside these limits coincident with a Design Basis Accident (DBA), post accident containment pressures could exceed calculated values.

APPLICABLE SAFETY ANALYSES

Containment internal pressure is an initial condition used in the DBA analyses to establish the maximum peak containment internal pressure. The limiting DBAs considered for determining the maximum containment internal pressure (P_a) are the LOCA and MSLB. A~~n MSLB at 75% RTP~~ Double-ended hot leg LOCA results in the highest calculated internal containment pressure of ~~42.3~~ 42.77 psig, which is below the internal design pressure of 44 psig. The postulated DBAs are analyzed assuming degraded containment Engineered Safety Feature (ESF) systems (i.e., assuming the loss of one ESF bus, which is the worst case single active failure, resulting in one train of the Containment Spray System and one train of the Containment Cooling System being rendered inoperable). It is this maximum containment pressure that is used to ensure that the licensing basis dose limitations are met. 2

The initial pressure condition used in the containment analysis was ~~[14.7] psig~~ 15.51 psia. The maximum containment pressure resulting from the limiting DBA, ~~[42.3]~~ 42.77 psig, does not exceed the containment design pressure, ~~[~~44~~]~~ psig. The containment was also designed for an internal pressure equal to ~~[0.65]~~ 1.04 psid below external pressure to withstand the resultant pressure drop from an accidental actuation of the Containment Spray System. The LCO limit of ~~[27] inches of water~~ -0.49 psig ensures that operation within the design limit of ~~[-0.65]~~ -1.04 psid is maintained. The maximum calculated differential pressure that would occur as a result of an inadvertent actuation of the Containment Spray System between the containment and the shield building annulus is ~~[0.49]~~ 0.9996 psid. 3 (Ref. 1) 2

Containment pressure satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

BASES

LCO

Maintaining containment pressure less than or equal to the LCO upper pressure limit ensures that, in the event of a DBA, the resultant peak containment accident pressure will remain below the containment design pressure. Maintaining containment pressure greater than or equal to the LCO lower pressure limit ensures the containment will not exceed the design negative differential pressure following the inadvertent actuation of the Containment Spray System.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. Since maintaining containment pressure within limits is essential to ensure initial conditions assumed in the accident analysis are maintained, the LCO is applicable in MODES 1, 2, 3, and 4. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES.

ACTIONS

A.1

When containment pressure is not within the limits of the LCO, containment pressure must be restored to within these limits within 1 hour. The Required Action is necessary to return operation to within the bounds of the containment analysis. The 1 hour Completion Time is consistent with the ACTIONS of LCO 3.6.1, "Containment," which requires that containment be restored to OPERABLE status within 1 hour.

B.1 and B.2

~~REVIEWER'S NOTE~~

~~Adoption of a MODE 4 end state requires the licensee to make the following commitments:~~

~~1. [LICENSEE] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision [4F]3, July 2000.~~

~~2. [LICENSEE] will follow the guidance established in Revision 2 of WCAP-16364-NP, "Implementation Guidance for Risk Informed Modification to Selected Required Action End States at Combustion Engineering NSSS Plants (TSTF-422)," Westinghouse, May 2010.~~

4

If containment pressure cannot be restored to within limits within the required Completion Time, the plant must be brought to a MODE in which overall plant risk is minimized. To achieve this

BASES

ACTIONS (continued)

status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.

Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. ~~1~~ 2). In MODE 4 there are more accident mitigation systems available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state.

Required Action B.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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.

SURVEILLANCE REQUIREMENTS

SR 3.6.4~~B~~.1

Verifying that containment pressure is within limits ensures that facility operation remains within the limits assumed in the containment analysis. ~~[The 12 hour Frequency of this SR was developed after taking into consideration operating experience related to trending of containment pressure variations during the applicable MODES. Furthermore, the 12 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to an abnormal containment pressure condition.~~

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

1

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-------------------------------REVIEWER'S NOTE-------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~

4

3

REFERENCES

1. UFSAR Section 6.2

~~1~~ 2. CE NPSD-1186-A, Technical Justification for the Risk Informed Modification to Selected Required Action End States for CEOG PWRs, October 2001.

2

2

B 3.6 CONTAINMENT SYSTEMS

B 3.6.4~~B~~ Containment Pressure ~~(Dual)~~ 1

BASES

BACKGROUND

The containment pressure is limited, during normal operation, to preserve the initial conditions assumed in the accident analyses for a loss of coolant accident (LOCA) or main steam line break (MSLB). These limits also prevent the containment pressure from exceeding the containment design negative pressure differential, with respect to the ~~outside atmosphere~~ shield building annulus, in the event of inadvertent actuation of the Containment Spray System. 2

Containment pressure is a process variable that is monitored and controlled. The containment pressure limits are derived from the input conditions used in the containment functional analyses and the containment structure external pressure analysis. Should operation occur outside these limits coincident with a Design Basis Accident (DBA), post accident containment pressures could exceed calculated values.

APPLICABLE SAFETY ANALYSES

Containment internal pressure is an initial condition used in the DBA analyses to establish the maximum peak containment internal pressure. The limiting DBAs considered for determining the maximum containment internal pressure (P_a) are the LOCA and MSLB. A~~n MSLB at 75% RTP~~ Double-ended hot leg LOCA results in the highest calculated internal containment pressure of ~~42.3~~ 43.43 psig, which is below the internal design pressure of 44 psig. The postulated DBAs are analyzed assuming degraded containment Engineered Safety Feature (ESF) systems (i.e., assuming the loss of one ESF bus, which is the worst case single active failure, resulting in one train of the Containment Spray System and one train of the Containment Cooling System being rendered inoperable). It is this maximum containment pressure that is used to ensure that the licensing basis dose limitations are met. 2

The initial pressure condition used in the containment analysis was ~~[14.7] psig~~ 15.41 psia. The maximum containment pressure resulting from the limiting DBA, ~~[42.3]~~ 43.43 psig, does not exceed the containment design pressure, ~~[~~44~~]~~ psig. The containment was also designed for an internal pressure equal to ~~[0.65]~~ 1.05 psid below external pressure to withstand the resultant pressure drop from an accidental actuation of the Containment Spray System. The LCO limit of ~~[27] inches of water~~ -0.42 psig ensures that operation within the design limit of ~~[-0.65]~~ -1.05 psid is maintained. The maximum calculated differential pressure that would occur as a result of an inadvertent actuation of the Containment Spray System is ~~[0.49]~~ 0.9983 psid between the containment and the shield building annulus (Ref. 1). 3 2

Containment pressure satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

BASES

LCO	Maintaining containment pressure less than or equal to the LCO upper pressure limit ensures that, in the event of a DBA, the resultant peak containment accident pressure will remain below the containment design pressure. Maintaining containment pressure greater than or equal to the LCO lower pressure limit ensures the containment will not exceed the design negative differential pressure following the inadvertent actuation of the Containment Spray System.
APPLICABILITY	In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. Since maintaining containment pressure within limits is essential to ensure initial conditions assumed in the accident analysis are maintained, the LCO is applicable in MODES 1, 2, 3, and 4. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES.

ACTIONS

A.1

When containment pressure is not within the limits of the LCO, containment pressure must be restored to within these limits within 1 hour. The Required Action is necessary to return operation to within the bounds of the containment analysis. The 1 hour Completion Time is consistent with the ACTIONS of LCO 3.6.1, "Containment," which requires that containment be restored to OPERABLE status within 1 hour.

B.1 and B.2

~~-----REVIEWER'S NOTE-----~~
~~Adoption of a MODE 4 end state requires the licensee to make the following commitments:~~

~~1. [LICENSEE] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision [4F]3, July 2000.~~

~~2. [LICENSEE] will follow the guidance established in Revision 2 of WCAP-16364-NP, "Implementation Guidance for Risk Informed Modification to Selected Required Action End States at Combustion Engineering NSSS Plants (TSTF-422)," Westinghouse, May 2010.~~
~~----------~~

4

If containment pressure cannot be restored to within limits within the required Completion Time, the plant must be brought to a MODE in which overall plant risk is minimized. To achieve this

BASES

ACTIONS (continued)

status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.

Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. ~~1~~ 2). In MODE 4 there are more accident mitigation systems available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state.

Required Action B.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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.

SURVEILLANCE REQUIREMENTS

SR 3.6.4~~B~~.1

Verifying that containment pressure is within limits ensures that facility operation remains within the limits assumed in the containment analysis. ~~[The 12 hour Frequency of this SR was developed after taking into consideration operating experience related to trending of containment pressure variations during the applicable MODES. Furthermore, the 12 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to an abnormal containment pressure condition.~~

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---~~] 4 3

REFERENCES

1. UFSAR Section 6.2

~~1~~ 2. CE NPSD-1186-A, Technical Justification for the Risk Informed Modification to Selected Required Action End States for CEOG PWRs, October 2001. 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.4 BASES, CONTAINMENT PRESSURE

1. The type of Containment (Dual) and the Specification designator "B" are deleted since they are unnecessary (only one Containment Pressure Specification is used in the St. Lucie Plant (PSL) ITS.) This information is provided in NUREG-1432, Rev. 5.0, to assist in indentifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation. In addition, the Atmospheric Containment Pressure Bases (ISTS 3.6.4B) is not used and is not shown.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS contains bracketed information and/or values that are generic to all Combustion Engineering vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.

4. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.4, CONTAINMENT PRESSURE

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 5

ITS 3.6.5, Containment Air Temperature

Current Technical Specifications (CTS) Markup and Discussion of Changes (DOCs)

CONTAINMENT SYSTEMS

AIR TEMPERATURE

LIMITING CONDITION FOR OPERATION

LCO 3.6.5 3.6.1.5 Primary containment average air temperature shall not exceed 120°F.

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

ACTION:

ACTION A
ACTION B
Required Action B.2 NOTE

With the containment average air temperature > 120°F, reduce the average air temperature to within the limit within 8 hours, or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. LCO 3.0.4.a is not applicable when entering HOT SHUTDOWN.

SURVEILLANCE REQUIREMENTS

SR 3.6.5.1 4.6.1.5 ~~The primary~~ Verify containment average air temperature ~~shall be the arithmetical average of the temperatures at three of the following locations and shall be determined~~ is within limit in accordance with the Surveillance Frequency Control Program:

~~Location~~

~~a. Containment fan cooler No. 1A air intake, elevation 45 feet.~~

~~b. Containment fan cooler No. 1B air intake, elevation 45 feet.~~

~~c. Containment fan cooler No. 1C air intake, elevation 62 feet.~~

~~d. Containment fan cooler No. 1D air intake, elevation 45 feet.~~

LA01

CONTAINMENT SYSTEMS

AIR TEMPERATURE

LIMITING CONDITION FOR OPERATION

LCO 3.6.5 3.6.1.5 Primary containment average air temperature shall not exceed 120°F.

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

ACTION:

ACTION A
ACTION B
Required Action B.2 NOTE

With the containment average air temperature greater than 120°F, reduce the average air temperature to within the limit within 8 hours, or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. LCO 3.0.4.a is not applicable when entering HOT SHUTDOWN.

SURVEILLANCE REQUIREMENTS

SR 3.6.5.1 4.6.1.5 Verify ~~The primary~~ containment average air temperature is within limit ~~shall be the arithmetical average* of the temperatures at the following locations and shall be determined~~ in accordance with the Surveillance Frequency Control Program:

~~Location~~

~~a. TE-07-3A NW RCB Elevation 70'~~

~~b. TE-07-3B SW RCB Elevation 70'~~

LA01

~~* With one temperature detector inoperable, use the air intake temperature detectors of the operating containment fan coolers.~~

DISCUSSION OF CHANGES
ITS 3.6.5, CONTAINMENT AIR TEMPERATURE

ADMINISTRATIVE CHANGES

A01 In the conversion of the St. Lucie Plant (PSL) Unit 1 and 2 Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1432, Rev. 5.0, "Standard Technical Specifications - Combustion Engineering Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* Unit 1 CTS 4.6.1.5.1 requires the primary containment average air temperature to be the arithmetical average of the temperatures at three of four locations identified as containment fan cooler intakes No. 1A (Elevation 45 feet), No. 1B (Elevation 45 feet), No. 1C (Elevation 62 feet), No. 1D (Elevation 45 feet). Unit 2 CTS 4.6.1.5.1 requires the primary containment average air temperature to be the arithmetical average* of two temperature readings at Elevation 70'. Furthermore, Unit 2 CTS 4.6.1.5.2 requires the use of the air intake temperature detectors of the operating containment air coolers if one temperature detector is inoperable.

ITS SR 3.6.5.1 requires verification that the containment average air temperature is within the limit. This changes the CTS by moving the description of how compliance with the Technical Specification LCO is determined to the Bases.

The removal of these details for performing Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to verify containment average air temperatures are within limits. Also, this change is acceptable because these types of procedural details will be adequately controlled in the Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

None

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.6 CONTAINMENT SYSTEMS

3.6.5 Containment Air Temperature ~~(Atmospheric and Dual)~~ 1

3.6.1.5 LCO 3.6.5 Containment average air temperature shall be ≤ ~~[~~120~~]~~°F. 3

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

ACTIONS

	CONDITION	REQUIRED ACTION		COMPLETION TIME
ACTION	A. Containment average air temperature not within limit.	A.1	Restore containment average air temperature to within limit.	8 hours
ACTION	B. Required Action and associated Completion Time not met.	B.1 AND B.2	Be in MODE 3. --------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------- Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
4.6.1.5 SR 3.6.5.1	Verify containment average air temperature is within limit.	~~[24 hours~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 3

3.6 CONTAINMENT SYSTEMS

3.6.5 Containment Air Temperature ~~(Atmospheric and Dual)~~ 1

3.6.1.5 LCO 3.6.5 Containment average air temperature shall be ≤ ~~[~~120~~]~~°F. 3

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
ACTION	A. Containment average air temperature not within limit.	A.1 Restore containment average air temperature to within limit.	8 hours
ACTION	B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. <u>AND</u> B.2 --------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------- Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
4.6.1.5 SR 3.6.5.1	Verify containment average air temperature is within limit.	~~[24 hours~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 3

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.5, CONTAINMENT AIR TEMPERATURE

1. The type of Containment (Atmospheric and Dual) is deleted since it is unnecessary (only one Containment Specification is used in the St. Lucie Plant (PSL) ITS). This information is provided in NUREG-1432, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation.

2. Changes are made (additions, deletions, and/or changes) to the ISTS which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS contains bracketed information and/or values that are generic to all Combustion Engineering vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.6 CONTAINMENT SYSTEMS

B 3.6.5 Containment Air Temperature ~~(Atmospheric and Dual)~~ 1

BASES

BACKGROUND

The containment structure serves to contain radioactive material that may be released from the reactor core following a Design Basis Accident (DBA). The containment average air temperature is limited during normal operation to preserve the initial conditions assumed in the accident analyses for a loss of coolant accident (LOCA) or main steam line break (MSLB).

The containment average air temperature limit is derived from the input conditions used in the containment functional analyses and the containment structure external pressure analyses. This LCO ensures that initial conditions assumed in the analysis of containment response to a DBA are not violated during unit operations. The total amount of energy to be removed from containment by the Containment Spray and Cooling systems during post accident conditions is dependent on the energy released to the containment due to the event, as well as the initial containment temperature and pressure. The higher the initial temperature, the more energy that must be removed, resulting in a higher peak containment pressure and temperature. Exceeding containment design pressure may result in leakage greater than that assumed in the accident analysis (Ref. 1). Operation with containment temperature in excess of the LCO limit violates an initial condition assumed in the accident analysis.

APPLICABLE SAFETY ANALYSES

Containment average air temperature is an initial condition used in the DBA analyses that establishes the containment environmental qualification operating envelope for both pressure and temperature. The limit for containment average air temperature ensures that operation is maintained within the assumptions used in the DBA analysis for containment. The accident analyses and evaluations considered both LOCAs and MSLBs for determining the maximum peak containment pressures and temperatures. The worst case MSLB generates larger mass and energy releases than the worst case LOCA. Thus, the MSLB event bounds the LOCA event from the containment peak ~~pressure and~~ 2 temperature standpoint. The initial pre-accident temperature inside containment was assumed to be ~~[~~120~~]~~°F (Ref. ~~2~~ 1). 3 2

~~[For atmospheric containment, the initial containment average air temperature condition of [120]°F resulted in a maximum vapor temperature in containment of [413]°F. The temperature of the~~ 3

BASES

APPLICABLE SAFETY ANALYSES (continued)

~~containment steel liner and concrete structure reach approximately 230°F and 220°F, respectively. The containment average air temperature limit of [120]°F ensures that, in the event of an accident, the maximum design temperature for containment, [300]°F, is not exceeded. The consequence of exceeding this design temperature may be the potential for degradation of the containment structure under accident loads.~~ 3

~~For dual containment, t~~ T he initial containment condition of ~~[~~120~~]~~°F resulted This results in a peak 2 in a maximum vapor temperature in containment of ~~[413.5]~~ 387 °F. ~~The~~ 3 temperature of the containment steel pressure vessel ~~also reaches~~ of 2 approximately ~~[413.5]~~ 232 °F. The containment average temperature limit of ~~[~~120~~]~~°F ensures that, in the event of an accident, the maximum design steel shell temperature for containment of ~~[269.3]~~ 264 °F during LOCA ~~conditions~~ and ~~[413.5]°F during~~ MSLB conditions is not exceeded. The consequences of exceeding this design temperature may be the potential for degradation of the containment structure under accident loads. ~~]~~ 3 2

Containment average air temperature satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

LCO

During a DBA, with an initial containment average air temperature less than or equal to the LCO temperature limit, the resultant accident temperature profile assures that the containment structural temperature is maintained below its design temperature and that required safety related equipment will continue to perform its function.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, maintaining containment average air temperature within the limit is not required in MODE 5 or 6.

ACTIONS

A.1

When containment average air temperature is not within the limit of the LCO, it must be restored to within limit within 8 hours. This Required Action is necessary to return operation to within the bounds of the containment analysis. The 8 hour Completion Time is acceptable considering the sensitivity of the analysis to variations in this parameter and provides sufficient time to correct minor problems.

 1

BASES

ACTIONS (continued)

B.1 and B.2

~~-------------------------------REVIEWER'S NOTE-------------------------------~~
~~Adoption of a MODE 4 end state requires the licensee to make the following commitments:~~

~~1. [LICENSEE] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision [4F]3, July 2000.~~

~~2. [LICENSEE] will follow the guidance established in Revision 2 of WCAP-16364-NP, "Implementation Guidance for Risk Informed Modification to Selected Required Action End States at Combustion Engineering NSSS Plants (TSTF-422)," Westinghouse, May 2010.~~
~~--~~ 4

If the containment average air temperature cannot be restored to within its limit within the required Completion Time, the plant must be brought to a MODE in which overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.

Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. ~~3~~ 2). In MODE 4 there are more accident mitigation systems available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state. 2

Required Action B.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MOD 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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.

 2

1

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.5.1

Verifying that containment average air temperature is within the LCO limit ensures that containment operation remains within the limit assumed for the containment analyses. In order to determine the containment average air temperature, an arithmetic average is calculated using measurements taken at locations within the containment selected to provide a representative sample of the overall containment atmosphere. Insert 1 ~~[The 24 hour Frequency of this SR is considered acceptable based on the observed slow rates of temperature increase within containment as a result of environmental heat sources (due to the large volume of containment). Furthermore, the 24 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to an abnormal containment temperature condition.~~

~~OR~~

3

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~

4

3 5

REFERENCES

1. U FSAR, Section ~~[~~ 6.2 ~~]~~.
2. ~~FSAR, Section [ ].~~
~~3.~~ CE NPSD-1186-A, Technical Justification for the Risk Informed Modification to Selected Required Action End States for CEOG PWRs, October, 2001.

2

2

2

INSERT 1

The arithmetical average is calculated from three of the following locations:

a. Containment fan cooler No. 1A air intake, elevation 45 feet,
b. Containment fan cooler No. 1B air intake, elevation 45 feet,
c. Containment fan cooler No. 1C air intake, elevation 62 feet, and
d. Containment fan cooler No. 1D air intake, elevation 45 feet.

B 3.6 CONTAINMENT SYSTEMS

B 3.6.5 Containment Air Temperature ~~(Atmospheric and Dual)~~ 1

BASES

BACKGROUND

The containment structure serves to contain radioactive material that may be released from the reactor core following a Design Basis Accident (DBA). The containment average air temperature is limited during normal operation to preserve the initial conditions assumed in the accident analyses for a loss of coolant accident (LOCA) or main steam line break (MSLB).

The containment average air temperature limit is derived from the input conditions used in the containment functional analyses and the containment structure external pressure analyses. This LCO ensures that initial conditions assumed in the analysis of containment response to a DBA are not violated during unit operations. The total amount of energy to be removed from containment by the Containment Spray and Cooling systems during post accident conditions is dependent on the energy released to the containment due to the event, as well as the initial containment temperature and pressure. The higher the initial temperature, the more energy that must be removed, resulting in a higher peak containment pressure and temperature. Exceeding containment design pressure may result in leakage greater than that assumed in the accident analysis (Ref. 1). Operation with containment temperature in excess of the LCO limit violates an initial condition assumed in the accident analysis.

APPLICABLE SAFETY ANALYSES

Containment average air temperature is an initial condition used in the DBA analyses that establishes the containment environmental qualification operating envelope for both pressure and temperature. The limit for containment average air temperature ensures that operation is maintained within the assumptions used in the DBA analysis for containment. The accident analyses and evaluations considered both LOCAs and MSLBs for determining the maximum peak containment pressures and temperatures. The worst case MSLB generates larger mass and energy releases than the worst case LOCA. Thus, the MSLB event bounds the LOCA event from the containment peak ~~pressure and~~ 2
temperature standpoint. The initial pre-accident temperature inside containment was assumed to be ~~[~~120~~]~~°F (Ref. ~~2~~ 1). 3 2

~~[For atmospheric containment, the initial containment average air temperature condition of [120]°F resulted in a maximum vapor temperature in containment of [413]°F. The temperature of the~~ 3

BASES

APPLICABLE SAFETY ANALYSES (continued)

~~containment steel liner and concrete structure reach approximately 230°F and 220°F, respectively. The containment average air temperature limit of [120]°F ensures that, in the event of an accident, the maximum design temperature for containment, [300]°F, is not exceeded. The consequence of exceeding this design temperature may be the potential for degradation of the containment structure under accident loads.~~ 3

T This results in a peak 2

~~For dual containment, t~~he initial containment condition of ~~[~~120~~]~~°F resulted in a maximum vapor temperature in containment of ~~[413.5]~~°F. ~~The~~ 3 377
temperature of the containment steel pressure vessel ~~also reaches~~ 2 of
208 approximately ~~[413.5]~~°F. The containment average temperature limit of ~~[~~120~~]~~°F ensures that, in the event of an accident, the maximum design temperature for containment of ~~[269.3]~~°F during LOCA ~~conditions~~ and 264 ~~[413.5]°F during~~ MSLB conditions is not exceeded. The consequences of exceeding this design temperature may be the potential for degradation of the containment structure under accident loads. ~~]~~ 3

steel shell 2

Containment average air temperature satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

LCO

During a DBA, with an initial containment average air temperature less than or equal to the LCO temperature limit, the resultant accident temperature profile assures that the containment structural temperature is maintained below its design temperature and that required safety related equipment will continue to perform its function.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, maintaining containment average air temperature within the limit is not required in MODE 5 or 6.

ACTIONS

A.1

When containment average air temperature is not within the limit of the LCO, it must be restored to within limit within 8 hours. This Required Action is necessary to return operation to within the bounds of the containment analysis. The 8 hour Completion Time is acceptable considering the sensitivity of the analysis to variations in this parameter and provides sufficient time to correct minor problems.

BASES

ACTIONS (continued)

B.1 and B.2

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Adoption of a MODE 4 end state requires the licensee to make the following commitments:~~

~~1. [LICENSEE] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision [4F]3, July 2000.~~

~~2. [LICENSEE] will follow the guidance established in Revision 2 of WCAP-16364-NP, "Implementation Guidance for Risk Informed Modification to Selected Required Action End States at Combustion Engineering NSSS Plants (TSTF-422)," Westinghouse, May 2010.~~
~~---~~

4

If the containment average air temperature cannot be restored to within its limit within the required Completion Time, the plant must be brought to a MODE in which overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.

Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. ~~3~~ 2). In MODE 4 there are more accident mitigation systems available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state. 2

Required Action B.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MOD 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.5.1

Verifying that containment average air temperature is within the LCO limit ensures that containment operation remains within the limit assumed for the containment analyses. In order to determine the containment average air temperature, an arithmetic average is calculated using measurements taken at locations within the containment selected to provide a representative sample of the overall containment atmosphere. Insert 1 ~~[The 24 hour Frequency of this SR is considered acceptable based on the observed slow rates of temperature increase within containment as a result of environmental heat sources (due to the large volume of containment). Furthermore, the 24 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to an abnormal containment temperature condition.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~--]~~ 3

REFERENCES

1. U FSAR, Section ~~[ ]~~ 6.2. 5
2. ~~FSAR, Section [ ].~~ 2
~~3.~~ CE NPSD-1186-A, Technical Justification for the Risk Informed Modification to Selected Required Action End States for CEOG PWRs, October, 2001.

2

INSERT 1

The arithmetical average is calculated from the following containment temperature detectors:

a. TE-07-3A NW RCB Elevation 70', and
b. TE-07-3B SW RCB Elevation 70'.

When one of the two temperature detectors is not functional, the air intake temperature of the operating containment air coolers may be used.

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.5 BASES, CONTAINMENT AIR TEMPERATURE

1. The type of Containment (Atmospheric and Dual) is deleted since it is unnecessary (only one Containment Specification is used in the St. Lucie Plant (PSL) ITS). This information is provided in NUREG-1432, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation.

2. Changes are made (additions, deletions, and/or changes) to the ITS Bases that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS contains bracketed information and/or values that are generic to Combustion Engineering vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

4. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.

5. The PSL Safety Analysis Report (SAR) is an updated version of the original Final Safety Analysis Report. Therefore, the proper acronym is UFSAR and is changed to reflect the document.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.5, CONTAINMENT AIR TEMPERATURE

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 6

ITS 3.6.6, Containment Spray and Cooling Systems

Current Technical Specifications (CTS) Markup and Discussion of Changes (DOCs)

CONTAINMENT SYSTEMS

3/4.6.2 ~~DEPRESSURIZATION AND COOLING SYSTEMS~~

CONTAINMENT SPRAY AND COOLING SYSTEMS

LIMITING CONDITION FOR OPERATION

LCO 3.6.6 3.6.2.1 Two containment spray trains and two containment cooling trains shall be OPERABLE.

Applicability **APPLICABILITY**: ~~Containment Spray System:~~ MODES 1, and 2, ~~and MODE 3 with Pressurizer Pressure ≥ 1750 psia~~. Insert 1
~~Containment Cooling System: MODES 1, 2, and 3~~.

ACTION:

1. Modes 1, 2, and 3 with Pressurizer Pressure ≥ 1750 psia: L01

ACTION A
a. With one containment spray train inoperable, restore the inoperable spray train to OPERABLE status within ~~72 hours~~ 7 days or in accordance with the Risk Informed Completion Time Program; otherwise be in MODE 3 within ~~the next~~ 12 6 hours and ~~in MODE 4~~ reduce pressurizer pressure to < 1750 psia within ~~the following 54~~ hours. M01 A02

ACTION F

ACTION B
b. With one containment cooling train inoperable, restore the inoperable cooling train to OPERABLE status within 7 days or in accordance with the Risk Informed Completion Time Program; otherwise be in MODE 3 within ~~the next~~ 6 hours and ~~in MODE 4~~ reduce pressurizer pressure to < 1750 psia within ~~the following 6~~ 12 hours. A02

ACTION F

ACTION D
c. Insert 2 ~~With one containment spray train and one containment cooling train inoperable, concurrently implement ACTIONS a. and b. The completion intervals for ACTION a. and ACTION b. shall be tracked separately for each train starting from the time each train was discovered inoperable.~~ L01

ACTION C NOTE

NOTE
Action not applicable when second containment spray train intentionally made inoperable.

ACTION C
d. With two containment spray trains inoperable, within 1 hour verify ~~TS~~ LCO 3.7.~~7~~10, "Control Room Emergency Ventilation System," is met, and restore at least one containment spray train to OPERABLE status within 24 hours; otherwise, be in MODE 3 within ~~the next~~ 6 hours and ~~in MODE 4 within the following 6~~ reduce pressurizer pressure to < 1750 psia within 12 hours. A02

ACTION F

ACTION E
e. With two containment cooling trains inoperable, restore one cooling train to OPERABLE status within 72 hours or in accordance with the Risk Informed Completion Time Program; otherwise be in MODE 3 within ~~the next~~ 6 hours and ~~in MODE 4~~ reduce pressurizer pressure to < 1750 psia within ~~the following 6~~ 12 hours. A02

ACTION F

ACTION I
f. With any combination of three or more trains inoperable, enter LCO 3.0.3 immediately

2. Mode 3 with Pressurizer Pressure < 1750 psia:

ACTION G
a. With one containment cooling train inoperable, restore the inoperable cooling train to OPERABLE status within 72 hours; otherwise be in MODE 4 within ~~the next 6~~ 12 hours. L02

ACTION H

ACTION I
b. With two containment cooling trains inoperable, enter LCO 3.0.3 immediately

INSERT 1

A01

MODE 3, except containment spray trains are not required to be OPERABLE when pressurizer pressure is < 1750.

INSERT 2

L01

D. One containment spray train and one containment cooling train inoperable in MODE 1, 2, or MODE 3 with pressurizer pressure ≥ 1750 psia.	D.1	Restore containment spray train to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program
	OR		
	D.2	Restore containment cooling train to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each containment spray system shall be demonstrated OPERABLE:

SR 3.6.6.1 a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is ~~positioned to take suction from the RWT on a Containment Pressure -- High High test signal~~.* LA01

In the correct position

SR 3.6.6.6 b. By verifying that each spray pump develops the specified discharge pressure when tested pursuant to the INSERVICE TESTING PROGRAM.

SR 3.6.6.5 c. In accordance with the Surveillance Frequency Control Program by verifying containment spray system locations susceptible to gas accumulation are sufficiently filled with water.

SR 3.6.6.1 NOTE * Not required to be met for system vent flow paths opened under administrative control.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

d. In accordance with the Surveillance Frequency Control Program~~, during shutdown,~~ by: L06

SR 3.6.6.7 1. Verifying that each automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to its correct position on ~~a CSAS test~~ an actual or simulated actuation signal. L03

SR 3.6.6.8 2. Verifying that each spray pump starts automatically on ~~a CSAS test~~ an actual or simulated actuation signal. L04

SR 3.6.6.4 3. Verify~~ing that upon a recirculation actuation signal, the containment sump isolation valves open and that a recirculation mode flow path via an OPERABLE shutdown cooling heat exchanger is established~~ Insert 3. LA02 L05

SR 3.6.6.10 e. By verifying each spray nozzle is unobstructed following maintenance which could result in nozzle blockage.

4.6.2.1.1. Each containment cooling train shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by:

SR 3.6.6.2 1. Starting each cooling train fan unit from the control room and verifying that each unit operates for at least 15 minutes, and

SR 3.6.6.3 2. Verifying a cooling water flow rate of greater than or equal to 1200 gpm to each cooling unit.

SR 3.6.6.9 b. In accordance with the Surveillance Frequency Control Program~~, during shutdown,~~ by verifying that each containment cooling train starts automatically on an ~~SIAS test~~ actual or simulated actuation signal. L06 L04

INSERT 3 L05 LA02

each automatic valve in the recirculation mode flow path that is not locked, sealed, or otherwise secured in position actuates to the correct position on an actual or simulated actuation signal.

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY AND COOLING SYSTEMS

LIMITING CONDITION FOR OPERATION

LCO 3.6.6 3.6.2.1 Two containment spray trains and two containment cooling trains shall be OPERABLE.

Applicability **APPLICABILITY**: ~~Containment Spray System:~~ MODES 1~~,~~ and 2, ~~and MODE 3 with Pressurizer Pressure ≥ 1750 psia~~.
Insert 1
~~Containment Cooling System: MODES 1, 2, and 3~~.

ACTION:

1. Modes 1, 2, and 3 with Pressurizer Pressure ≥ 1750 psia:

ACTION A
ACTION F

a. With one containment spray train inoperable, restore the inoperable spray train to OPERABLE status within ~~72 hours~~ 7 days or in accordance with the Risk Informed Completion Time Program; otherwise be in MODE 3 within ~~the next~~ 6 hours and ~~in MODE 4~~ reduce pressurizer pressure to < 1750 psia within ~~the following 54~~ 12 hours. L01 M01 A02

ACTION B
ACTION F

b. With one containment cooling train inoperable, restore the inoperable cooling train to OPERABLE status within 7 days or in accordance with the Risk Informed Completion Time Program; otherwise be in MODE 3 within ~~the next~~ 6 hours and ~~in MODE 4~~ reduce pressurizer pressure to < 1750 psia within ~~the following 6~~ 12 hours. A02

ACTION D

c. Insert 2 ~~With one containment spray train and one containment cooling train inoperable, concurrently implement ACTIONS a. and b. The completion intervals for ACTION a. and ACTION b. shall be tracked separately for each train starting from the time each train was discovered inoperable.~~ L01

ACTION C NOTE

NOTE
Action not applicable when second containment spray train intentionally made inoperable.

ACTION C
ACTION F

d. With two containment spray trains inoperable, within 1 hour verify LCO 3.7.~~7~~10, "~~CREACS~~ Control Room Emergency Ventilation System," is met, and restore at least one containment spray train to OPERABLE status within 24 hours; otherwise, be in MODE 3 within the next 6 hours and ~~in MODE 4~~ reduce pressurizer pressure to < 1750 psia within ~~the following 6~~ 12 hours. A02

ACTION E
ACTION F

e. With two containment cooling trains inoperable, restore one cooling train to OPERABLE status within 72 hours or in accordance with the Risk Informed Completion Time Program; otherwise be in MODE 3 within ~~the next~~ 6 hours and ~~in MODE 4~~ reduce pressurizer pressure to < 1750 psia within ~~the following 6~~ 12 hours. A02

ACTION I

f. With any combination of three or more trains inoperable, enter LCO 3.0.3 immediately.

2. Mode 3 with Pressurizer Pressure < 1750 psia:

ACTION G
ACTION H

a. With one containment cooling train inoperable, restore the inoperable cooling train to OPERABLE status within 72 hours; otherwise be in MODE 4 within ~~the next 6~~ 12 hours. L02

ACTION I

b. With two containment cooling trains inoperable, enter LCO 3.0.3 immediately.

INSERT 1

A01

MODE 3, except containment spray trains are not required to be OPERABLE when pressurizer pressure is < 1750.

INSERT 2

L01

D. One containment spray train and one containment cooling train inoperable in MODE 1, 2, or MODE 3 with pressurizer pressure ≥ 1750 psia.	D.1	Restore containment spray train to OPERABLE status.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
	<u>OR</u>		
	D.2	Restore containment cooling train to OPERABLE status.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each containment spray system shall be demonstrated OPERABLE:

SR 3.6.6.1 a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is ~~positioned to take suction from the RWT on a Containment Pressure – – High-High test signal.~~* In the correct position LA01

SR 3.6.6.6 b. By verifying that each spray pump develops the specified discharge pressure when tested pursuant to the INSERVICE TESTING PROGRAM.

c. In accordance with the Surveillance Frequency Control Program~~, during shutdown,~~ by: L06

that is not locked, sealed, or otherwise secured in position, L03

SR 3.6.6.7 1. Verifying that each automatic valve in the flow path actuates to its correct position on ~~a CSAS test~~ signal.

an actual or simulated actuation L04

SR 3.6.6.4 2. Verify~~ing that upon a Recirculation Actuation Test Signal (RAS), the containment sump isolation valves open and that a recirculation mode flow path via an OPERABLE shutdown cooling heat exchanger is established.~~ LA02

each automatic valve in the recirculation mode flow path that is not locked, sealed, or otherwise secured in position actuates to the correct position on an actual or simulated actuation signal. L05

SR 3.6.6.1 NOTE * Not required to be met for system vent flow paths opened under administrative control

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.6.6.8 3. Verifying that each spray pump starts automatically on ~~a CSAS test~~ an actual or simulated actuation signal. L04

SR 3.6.6.5 d. In accordance with the Surveillance Frequency Control Program by verifying containment spray system locations susceptible to gas accumulation are sufficiently filled with water.

SR 3.6.6.10 e. By verifying each spray nozzle is unobstructed following maintenance which could result in nozzle blockage.

4.6.2.1.1. Each containment cooling train shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by:

SR 3.6.6.2 1. Starting each cooling train fan unit from the control room and verifying that each unit operates for at least 15 minutes, and

SR 3.6.6.3 2. Verifying a cooling water flow rate of greater than or equal to 1200 gpm to each cooling unit.

SR 3.6.6.9 b. In accordance with the Surveillance Frequency Control Program~~, during shutdown,~~ by verifying that each containment cooling train starts automatically on an ~~SIAS test~~ actual or simulated actuation signal. L06 L04

~~DELETED~~

~~DELETED~~

ADMINISTRATIVE CHANGES

A01 In the conversion of the St. Lucie Plant (PSL) Unit 1 and 2 Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1432, Rev. 5.0, "Standard Technical Specifications - Combustion Engineering Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 CTS 3.6.2.1 Actions 1.a, 1.b, 1.d, and 1.e require in part, “otherwise be in… MODE 4...” when containment spray trains or cooling trains cannot be restored to OPERABLE status within the required time. ITS 3.6.6 Required Action F.2 requires, when the Required Actions and associated Completion Times are not met, reducing pressurizer pressure to < 1750 psia. This changes the end states in CTS 3.6.2.1 Action 1 from MODE 4 to MODE 3 with pressurizer pressure < 1750 psia.

The purpose of CTS 3.6.2.1 Action 1 is to place the plant in a condition in which the equipment is no longer required. CTS 3.6.2.1 Action 1 provides appropriate actions to take for the containment spray and containment cooling trains when the unit is in MODE 1, 2, or 3 when pressurizer pressure is ≥ 1750 psia. CTS 3.6.2.1 Action 2 provides appropriate actions to take for the containment cooling trains when the unit is in MODE 3 when pressurizer pressure is < 1750 psia. The Containment Spray System is not required to be OPERABLE when pressurizer pressure is < 1750 psia. Therefore, in accordance with CTS 3.0.2 (ITS LCO 3.0.2), when pressurizer pressure is < 1750 psia, the requirements to be in MODE 4 in CTS 3.6.2.1 Action 1 are no longer required to be completed. For the Containment Spray System, with pressurizer pressure below 1750 psia, the system is no longer required to be OPERABLE. For the Containment Cooling System, CTS 3.6.2.1 Action 2 applies and provides the appropriate actions while in MODE 3 with pressurizer pressure < 1750 psia.

These changes are designated as administrative changes and are acceptable because they maintain the current requirement to place the unit in a condition in which the applicable trains are no longer required consistent with the requirements of CTS 3.0.2 (ITS LCO 3.0.2) and, therefore, do not result in a technical change to the CTS.

MORE RESTRICTIVE CHANGES

M01 CTS 3.6.2.1 Action 1.a states in part, “otherwise be in… MODE 4 within the following 54 hours.” ITS 3.6.6 Required Action F.2, when the Required Actions and associated Completion Times are not met, requires reducing pressurizer pressure to < 1750 psia within 12 hours. This change reduces the time within which the plant must be placed in a condition where the containment spray trains are no longer required from 54 hours to 12 hours.

The purpose of CTS 3.6.2.1 Action 1.a is to place the plant in a condition in which the equipment is no longer required. The containment spray trains are only required to be OPERABLE when pressurizer pressure is $\geq$ 1750 psia. Therefore, in accordance with CTS 3.0.2 (ITS LCO 3.0.2), when pressurizer pressure is < 1750 psia, the requirements to be in MODE 4 in CTS 3.6.2.1 Action 1 are no longer required to be completed. This effectively allows 54 hours following entry into MODE 3 to reduce pressurizer pressure below 1750 psia. A Completion Time of 12 hours is a reasonable time to reach the required condition in an orderly manner without challenging plant systems. In addition, the 12 hour time is consistent with similar ITS Completion Times (e.g., Required Action C.2 of ISTS 3.5.1 and 3.5.2). The change is designated as more restrictive because it reduces a Required Action time to place the unit in a condition where the LCO does not apply.

RELOCATED SPECIFICATIONS

LA01 *(Type 2 – Removing Descriptions of System Operation)* CTS 4.6.2.1.a requires verification that each valve in the containment spray system is "positioned to take suction from the RWT on a Containment Pressure - - High-High test signal." ITS SR 3.6.6.1 requires verification that the valves are "in the correct position." This changes the CTS my moving the specific detail of system operation to the Bases.

The removal of these details, that are related to system operation, from the Technical Specifications is acceptable, because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS retains the requirement for the containment spray system to be demonstrated OPERABLE and the relocated material describes system operation and aspects of OPERABILITY. This change is acceptable because the removed information will be adequately controlled by the Technical Specification Bases Control Program in ITS Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system operation is being removed from the Technical Specification.

LA02 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.6.2.1.d.3 requires "that upon a recirculation actuation signal, the containment sump isolation valves open and that a recirculation mode flow path via an OPERABLE shutdown cooling heat exchanger is established." ITS SR 3.6.6.4 requires verification that each automatic valve in the recirculation mode flow path actuates to the correct position on an actual or simulated actuation signal. This changes the CTS by moving the system detail of the recirculation mode alignment to the Bases.

The removal of these details related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS retains the requirement to verify that an automatic alignment of containment spray to the containment sump occurs on actual or simulated actuation signal. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specifications Bases Control Program in Chapter 5. This program provides for the evaluation of changes to the Bases to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

L01 *(Category 4 – Relaxation of Required Action)* CTS 3.6.2.1 ACTION 1.a for MODE 3 $\geq$ 1750 psia requires the restoration of a single inoperable containment spray train to OPERABLE status within 72 hours or in accordance with the Risk Informed Completion Time Program; otherwise be in MODE 3 within 6 hours and MODE 4 within the following 54 hours. ITS 3.6.6 ACTION A requires restoration of the inoperable containment spray train to OPERABLE status within 7 days or in accordance with the Risk Informed Completion Time Program; otherwise ITS 3.6.6 ACTION F (discussed in DOCs A03 and M01) requires the plant to be in MODE 3 within 6 hours and pressurizer pressure reduced to <1750 psia within 12 hours. This changes the CTS by allowing 7 days or a period determined in accordance with the Risk Informed Completion Time Program to restore the inoperable containment spray train.

This change is acceptable because the proposed time will still ensure the containment cooling safety function for Units 1 and 2 and the iodine removal safety function for Unit 1 are met. Unit 2 accident analyses does not credit containment spray for fission product removal. Each containment spray train is capable of satisfying at least 50% of the accident heat removal requirements and for Unit 1 100% of the post-accident iodine removal spray requirements. A redundant OPERABLE containment spray train in conjunction with two redundant 50% capacity containment cooling trains ensures a heat removal capability of at least 150% and iodine removal capability (Unit 1 only) of 100% for the 7 day duration. The 7 day period is consistent with the restoration time for an inoperable containment cooling train that is also capable of satisfying at least 50% of the accident heat removal requirements.

The 72 hour containment spray train restoration criterion is retained in ITS 3.6.6 ACTION D when the inoperable containment spray train occurs concurrent with an inoperable containment cooling train. In this condition, the capability of 100% accident containment heat and iodine removal (Unit 1 only) requirements are satisfied by the combination of one OPERABLE containment spray and one containment cooling train.

CTS ACTION 1.c. states, "With one containment spray train and one containment cooling train inoperable, concurrently implement ACTIONS a. and b. The completion intervals for ACTION a. and ACTION b. shall be tracked separately for each train starting from the time each train was discovered inoperable." CTS ACTION 1.c. does not provide a specific time period requirement, instead relying on the times specified in CTS ACTION 1.a and CTS ACTION 1.b for the respective train inoperability. Because the inoperability of containment spray is the limiting component in CTS ACTION 1.c, (72 hours from CTS ACTION 1.a) restoration of the inoperable containment cooling train would necessarily have to be restored also within the 72 hours or less from the time the concurrent condition occurred to satisfy the CTS 1.c. ACTION requirement. The 7 days allowed in CTS ACTION 1.b is inconsequential if the available allowed time for restoration of an inoperable containment cooling train in accordance with CTS ACTION 1.b is (i.e., containment cooling train inoperable preceding the concurrent condition) $\geq$ 72 hours. If the available allowed time for restoration of the inoperable containment cooling train is < 72 hours the restoration time is limited by that remaining time. ITS ACTION D requires when one containment spray train and one containment cooling train are inoperable concurrently that one of the inoperable trains be restored to OPERABLE status within 72 hours or in accordance with the Risk Informed Completion Time Program. Therefore, in effect there is no change to the CTS ACTION 1.c. restoration time requirement for an inoperable containment cooling train when the inoperability is concurrent with an inoperable containment spray train.

ITS ACTION F requires the plant be in MODE 3 in 6 hours and pressurizer pressure reduced to < 1750 psia in 12 hours if ITS 3.6.6 ACTIONS A, B, C, D, or E requirements are not met. This is consistent with the change to CTS discussed in DOC A03.

This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L02 *(Category 4 – Relaxation of Required Action)* CTS 3.6.2.1 ACTION 2.a for MODE 3 < 1750 psia requires, "With one containment cooling train inoperable, restore the inoperable cooling train to OPERABLE status within 72 hours; otherwise be in MODE 4 within the next 6 hours." ITS 3.6.6 ACTION H requires the plant to be in MODE 4 in 12 hours if an inoperable containment cooling train cannot be restored to OPERABLE status within 72 hours. This changes the CTS by allowing 12 hours to be in MODE 4.

This change is acceptable because based on operating experience a period of 12 hours to reach MODE 4 in an orderly manner and without challenging plant systems is reasonable and is consistent with similar Required Action Completion Times throughout the ITS (e.g., Required Action B.2 of ITS 3.6.4 and 3.6.5).

L03 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* Unit 1 CTS 4.6.2.1.d.1 and Unit 2 CTS 4.6.2.1.a.1 require verification that each automatic valve in the flow path actuates to its correct position on a CSAS test signal. ITS SR 3.6.6.7 requires verification that each automatic valve in the flow path actuates to the correct position except for valves that are locked, sealed, or otherwise secured in the actuated position. This changes the CTS by excluding those valves that are locked, sealed, or otherwise secured in the actuated position from verification.

The purpose of Unit 1 CTS 4.6.2.1.d.1 and Unit 2 CTS 4.6.2.1.a.1 is to provide assurance that if an event occurred requiring actuation of the containment spray system, then those valves requiring automatic actuation would actuate to their correct position. Those automatic valves that are locked, sealed, or otherwise secured in position are not required to actuate on a containment spray actuation signal in order to perform their safety function because they are already in the required position. Testing such valves would not provide any additional assurance of OPERABILITY. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L04 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* Unit 1 CTS 4.6.2.1.d.1, CTS 4.6.2.1.d.2 and CTS 4.6.2.1.1.b and Unit 2 CTS 4.6.2.1.c.1, 4.6.2.1.c.3 and 4.6.2.1.1.b require verification that the containment spray system and containment cooling trains start automatically on a Containment Spray Actuation Signal (CSAS) test signal or Safety Injection Actuation Signal (SIAS), as applicable. ITS SR 3.6.6.7, ITS SR 3.6.6.8 ITS and 3.6.6.9 require verification that systems or components actuate on an actual or simulated actuation signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal for the tests.

The purpose of Unit 1 CTS 4.6.2.1.d.1, CTS 4.6.2.1.d.2 and CTS 4.6.2.1.1.b and Unit 2 CTS 4.6.2.1.c.1, 4.6.2.1.c.3 and 4.6.2.1.1.b is to ensure the containment spray system and containment cooling trains start automatically on a Containment Spray Actuation Signal (CSAS) test signal or Safety Injection Actuation Signal (SIAS), as applicable. This change is acceptable because it has been determined that the current Surveillance Requirement acceptance criteria are not the only method that can be used for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual" or "simulated" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L05 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* Unit 1 CTS 4.6.2.1.d.3 and Unit 2 CTS 4.6.2.1.c.2 require verification that the containment spray system automatically aligns to the containment sump upon receipt of an RAS actuation signal. ITS SR 3.6.6.4 requires verification that each automatic valve in the recirculation mode flow path that is not locked, sealed, or otherwise secured in position actuates to the correct position on an actual or simulated actuation signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal for the tests.

The purpose of Unit 1 CTS 4.6.2.1.d.3 and Unit 2 CTS 4.6.2.1.c.2 is to ensure the containment spray system actuates to align the containment spray system to the containment sump upon receipt of an RAS signal. This change is acceptable because it has been determined that the current Surveillance Requirement acceptance criteria are not the only method that can be used for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual" or "simulated" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L06 *(Category 8 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* Unit 1 CTS 4.6.2.1.d, Unit 1 CTS 4.6.2.1.1.b, Unit 2 CTS 4.6.2.1.c and Unit 2 CTS 4.6.2.1.1.b state, in part, "In accordance with the Surveillance Frequency Control Program, during shutdown." ITS surveillances state "In accordance with the Surveillance Frequency Control Program". This changes the CTS by deleting the SR requirement to perform the Surveillances during shutdown.

This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The proposed Surveillance does not include the restriction on unit conditions. The Surveillance Requirements could be performed in other than shutdown conditions, without jeopardizing safe plant operations. The control of the unit conditions appropriate to perform the test is an issue for procedures and scheduling and has been determined by the NRC Staff to be unnecessary as a Technical Specification restriction. As indicated in Generic Letter 91-04, allowing this control is consistent with the vast majority of other Technical Specification Surveillances that do not dictate unit conditions for the Surveillance. This change is designated as less restrictive because the Surveillance may be performed at plant conditions other than shutdown.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.6 CONTAINMENT SYSTEMS

3.6.6~~A~~ Containment Spray and Cooling Systems ~~(Atmospheric and Dual)~~ ~~(Credit taken for iodine removal by the Containment Spray System)~~ 1

3.6.2.1 LCO 3.6.6~~A~~ Two containment spray trains and two containment cooling trains shall be OPERABLE.

Applicability APPLICABILITY: MODES 1, and 2~~, 3, and [4]~~. MODE 3, except containment spray trains are not required to be OPERABLE when pressurizer pressure is < 1750 psia. 6

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
ACTION 1.a. DOC L01	A. One containment spray train inoperable.	A.1 Restore containment spray train to OPERABLE status.	~~[~~7~~]~~ days ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~	3
ACTION 1.b.	B. One containment cooling train inoperable in MODE 1, 2, or MODE 3 with pressurizer pressure ≥ 1750 psia.	B.1 Restore containment cooling train to OPERABLE status.	7 days ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~	6 3
ACTION 1.d. NOTE ACTION 1.d.	C.-------------- NOTE --------- Not applicable when second containment spray train intentionally made inoperable. -------------------------------- Two containment spray trains inoperable.	C.1 Verify LCO 3.7.1~~1~~0, "~~CREACS~~ Control Room Emergency Ventilation System (CREVS)," is met. AND C.2 Restore at least one containment spray train to OPERABLE status.	1 hour 24 hours	5

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
ACTION 1.c. DOC L01 — D. One containment spray train and one containment cooling train inoperable in MODE 1, 2, or MODE 3 with pressurizer pressure ≥ 1750 psia.	D.1 Restore containment spray train to OPERABLE status. OR D.2 Restore containment cooling train to OPERABLE status.	72 hours ~~[~~OR 6 3 In accordance with the Risk Informed Completion Time Program~~]~~ 72 hours ~~[~~OR 3 In accordance with the Risk Informed Completion Time Program~~]~~
ACTION 1.e. — E. Two containment cooling trains inoperable in MODE 1, 2, or MODE 3 with pressurizer pressure ≥ 1750 psia.	E.1 Restore one containment cooling train to OPERABLE status.	72 hours ~~[~~OR 6 3 In accordance with the Risk Informed Completion Time Program~~]~~
ACTION 1.a ACTION 1.b. ACTION 1.c. ACTION 1.d ACTION 1.e DOC A02 DOC M01 — F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met.	F.1 Be in MODE 3. AND F.2 ~~NOTE~~ ~~LCO 3.0.4.a is not applicable when entering MODE 4.~~ 6 4 ~~Be in MODE 4~~ Reduce pressurizer pressure to < 1750 psia. 6	6 hours 12 hours

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
Insert 1 ACTION 1.f. ~~G~~ I. Any combination of three or more trains inoperable in MODE 1, 2, or MODE 3 with pressurizer pressure ≥ 1750 psia. Insert 2	~~G~~ I.1 Enter LCO 3.0.3.	Immediately 6

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6~~A~~.1	----------NOTE---------- 4.6.2.1.a footnote Not required to be met for system vent flow paths opened under administrative control. -------------------- 4.6.2.1.a Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program~~]~~ 1 3
4.6.2.1.1.a.1 SR 3.6.6~~A~~.2	Operate each containment cooling train fan unit for ≥ 15 minutes.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program~~]~~ 1 3

CTS

6

INSERT 1

ACTION 2.a.	G. One containment cooling train inoperable in MODE 3 with pressurizer pressure < 1750 psia.	G.1	Restore containment cooling train to OPERABLE status.	72 hours
ACTION 2.a DOC L02	H. Required Action and associated Completion Time of Condition G not met.	H.1	Be in MODE 4.	12 hours

INSERT 2 2

OR

ACTION 2.b.

Two containment cooling trains inoperable in MODE 3 with pressurizer pressure < 1750 psia.

 1

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY	
4.6.2.1.1.a.2	SR 3.6.6~~A~~.3 Verify each containment cooling train cooling water flow rate is ≥ ~~[2000]~~ 1200 gpm to each fan cooler.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	1 3
4.6.2.1.d.3 DOC L05	SR 3.6.6~~A~~.4 ~~[Verify the containment spray piping is full of water to the [100] ft level in the containment spray header.~~ Verify each automatic valve in the recirculation mode flow path that is not locked, sealed, or otherwise secured in position actuates to the correct position on an actual or simulated actuation signal.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]]~~	1 3
4.6.2.1.c	SR 3.6.6~~A~~.5 Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	1 3
4.6.2.1.b	SR 3.6.6~~A~~.6 Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the INSERVICE TESTING PROGRAM	1

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
4.6.2.1.d.1 DOC L03 DOC L04	SR 3.6.6A.7 Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 1 3
4.6.2.1.d.2 DOC L04	SR 3.6.6A.8 Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 1 3
4.6.2.1.1.b DOC L04	SR 3.6.6A.9 Verify each containment cooling train starts automatically on an actual or simulated actuation signal.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 1 3

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
4.6.2.1.d	SR 3.6.6~~A~~.10 Verify each spray nozzle is unobstructed.	~~[At first refueling]~~ Following maintenance which could result in nozzle blockage ~~AND~~ ~~[10 years~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~ 1 3

CTS

3.6 CONTAINMENT SYSTEMS

3.6.6~~A~~ Containment Spray and Cooling Systems ~~(Atmospheric and Dual)~~ ~~(Credit taken for iodine removal by the Containment Spray System)~~ 1

3.6.2.1 LCO 3.6.6~~A~~ Two containment spray trains and two containment cooling trains shall be OPERABLE.

Applicability APPLICABILITY: MODES 1, and 2~~, 3, and [4].~~ MODE 3, except containment spray trains are not required to be OPERABLE when pressurizer pressure is < 1750 psia. 6

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
ACTION 1.a. DOC L01	A. One containment spray train inoperable.	A.1 Restore containment spray train to OPERABLE status.	~~[~~7~~]~~ days ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~	3
ACTION 1.b.	B. One containment cooling train inoperable in MODE 1, 2, or MODE 3 with pressurizer pressure ≥ 1750 psia.	B.1 Restore containment cooling train to OPERABLE status.	7 days ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~	6 3
ACTION 1.d. NOTE ACTION 1.d.	C. -------------- NOTE --------- Not applicable when second containment spray train intentionally made inoperable. -------------------------------- Two containment spray trains inoperable.	C.1 Verify LCO 3.7.1~~1~~0, "~~CREACS~~ Control Room Emergency Ventilation System (CREVS)," is met. AND C.2 Restore at least one containment spray train to OPERABLE status.	1 hour 24 hours	5

CTS

ACTIONS (continued)

ACTION 1.c. DOC L01 ACTION 1.e. ACTION 1.a ACTION 1.b. ACTION 1.c. ACTION 1.d ACTION 1.e DOC A02 DOC M01	CONDITION	REQUIRED ACTION	COMPLETION TIME	
ACTION 1.c. DOC L01	D. One containment spray train and one containment cooling train inoperable in MODE 1, 2, or MODE 3 with pressurizer pressure ≥ 1750 psia.	D.1 Restore containment spray train to OPERABLE status.	72 hours ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~	6 3
		OR D.2 Restore containment cooling train to OPERABLE status.	72 hours ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~	3
ACTION 1.e.	E. Two containment cooling trains inoperable in MODE 1, 2, or MODE 3 with pressurizer pressure ≥ 1750 psia.	E.1 Restore one containment cooling train to OPERABLE status.	72 hours ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~	6 3
ACTION 1.a ACTION 1.b. ACTION 1.c. ACTION 1.d ACTION 1.e DOC A02 DOC M01	F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met.	F.1 Be in MODE 3. AND F.2 ~~-------------NOTE-------------~~ ~~LCO 3.0.4.a is not applicable when entering MODE 4.~~ ~~-------------------------------~~ Reduce pressurizer pressure to < 1750 psia ~~Be in MODE 4~~.	6 hours 12 hours	6 4 6

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
Insert 1 ACTION 1.f. ~~G~~ I. Any combination of three or more trains inoperable in MODE 1, 2, or MODE 3 with pressurizer pressure ≥ 1750 psia. Insert 2	~~G~~ I.1 Enter LCO 3.0.3.	Immediately 6

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6~~A~~.1	4.6.2.1.a footnote -------------------------------NOTE--------------------------- Not required to be met for system vent flow paths opened under administrative control. -- 4.6.2.1.a Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	1 ~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program~~]~~ 3
SR 3.6.6~~A~~.2	4.6.2.1.1.a.1 Operate each containment cooling train fan unit for ≥ 15 minutes.	1 ~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program~~]~~ 3

CTS

6

INSERT 1

ACTION 2.a.	G. One containment cooling train inoperable in MODE 3 with pressurizer pressure < 1750 psia.	G.1	Restore containment cooling train to OPERABLE status.	72 hours
ACTION 2.a DOC L02	H. Required Action and associated Completion Time of Condition G not met.	H.1	Be in MODE 4.	12 hours

INSERT 2

2

OR

ACTION 2.b.

Two containment cooling trains inoperable in MODE 3 with pressurizer pressure < 1750 psia.

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
4.6.2.1.1.a.2	SR 3.6.6~~A~~.3	Verify each containment cooling train cooling water flow rate is ≥ ~~[2000]~~ 1200 gpm to each fan cooler.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	1 3
4.6.2.1.c.2 DOC L05	SR 3.6.6~~A~~.4	~~[Verify the containment spray piping is full of water to the [100] ft level in the containment spray header.~~ Verify each automatic valve in the recirculation mode flow path that is not locked, sealed, or otherwise secured in position actuates to the correct position on an actual or simulated actuation signal.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]]~~	1 3
4.6.2.1.d	SR 3.6.6~~A~~.5	Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	1 3
4.6.2.1.b	SR 3.6.6~~A~~.6	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the INSERVICE TESTING PROGRAM	1

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
4.6.2.1.c.1 DOC L03 DOC L04	SR 3.6.6A.7 Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 1 3
4.6.2.1.c.3 DOC L04	SR 3.6.6A.8 Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 1 3
4.6.2.1.1.b DOC L04	SR 3.6.6A.9 Verify each containment cooling train starts automatically on an actual or simulated actuation signal.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 1 3

CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
4.6.2.1.e SR 3.6.6~~A~~.10	Verify each spray nozzle is unobstructed.	Following maintenance which could result in nozzle blockage ~~[At first refueling]~~ ~~AND~~ ~~[10 years~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~ 1 3

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.6, CONTAINMENT SPRAY AND COOLING SYSTEMS

1. The type of Containment (Atmospheric and Dual), Specification designator "A" and the descriptor (credit taken for iodine removal by the Containment Spray System) are deleted since they are unnecessary (only one Containment Specification type is used in the St. Lucie Plant (PSL) Unit 1 and 2 ITS). ISTS 3.6.6A is used for PSL Unit 1 and Unit 2. This information is provided in NUREG-1432, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation.

2. Changes are made (additions, deletions, and/or changes) to the ITS which reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS contains bracketed information and/or values that are generic to Combustion Engineering vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

4. The LCO 3.0.4.a Note to ISTS 3.6.6 Required Action F.2 is not applicable to the PSL ITS because the ITS 3.6.6 Applicability does not include MODE 4 rendering the Note unnecessary. Therefore, the Note has been removed.

5. The Control Room Emergency Air Cleanup System (ISTS 3.7.11) is renumbered and relabeled as ITS 3.7.10, "Control Room Emergency Ventilation System (CREVS)," because the PSL ITS does not include ISTS 3.7.10, "Essential Chilled Water (ECW) System.

6. PSL Current Technical Specifications only require the Containment Spray System to be OPERABLE in MODES 1, 2 and 3 when pressurizer pressure is ≥ 1750 psia. The Applicability of ISTS 3.6.6 reflects this current licensing basis. In addition, the actions associated with containment cooling trains are different based on pressurizer pressure above or below 1750 psia. The Condition qualifiers added to ISTS 3.6.6, Conditions B, D, E, F, and G (ITS Condition I) reflect Conditions that apply when pressurizer pressure is ≥ 1750 psia and the new ACTIONS provided in Insert 1 reflect Conditions that apply when pressurizer pressure is < 1750 psia.

   The change made to Required Action F.2 reflects the end state for Conditions that apply when in MODE 1, 2, or MODE 3 with pressurizer pressure is ≥ 1750 psia. The new ITS 3.6.6 Condition I reflects the end state for Conditions that apply when in MODE 3 with pressurizer pressure is < 1750 psia. Conditions and Required Actions are renumerated to reflect the added ITS ACTIONS.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.6 CONTAINMENT SYSTEMS

B 3.6.6~~A~~ Containment Spray and Cooling Systems ~~(Atmospheric and Dual)~~ ~~(Credit taken for iodine removal by the Containment Spray System)~~ 1

BASES

BACKGROUND

The Containment Spray and Containment Cooling systems provide containment atmosphere cooling to limit post accident pressure and temperature in containment to less than the design values. Reduction of containment pressure and the iodine removal capability of the spray reduce the release of fission product radioactivity from containment to the environment, in the event of a Design Basis Accident (DBA), to within limits. The Containment Spray and Containment Cooling systems are designed to the requirements of 10 CFR 50, Appendix A, GDC 38, "Containment Heat Removal," GDC 39, "Inspection of Containment Heat Removal Systems," GDC 40, "Testing of Containment Heat Removal Systems," GDC 41, "Containment Atmosphere Cleanup," GDC 42, "Inspection of Containment Atmosphere Cleanup Systems," and GDC 43, "Testing of Containment Atmosphere Cleanup Systems" (Ref. 1), or other documents that were appropriate at the time of licensing (identified on a unit specific basis).

The Containment Cooling System and Containment Spray System are Engineered Safety Feature (ESF) systems. They are designed to ensure that the heat removal capability required during the post accident period can be attained. The Containment Spray System and the Containment Cooling System provide redundant methods to limit and maintain post accident conditions to less than the containment design values.

Containment Spray System

The Containment Spray System consists of two separate trains of equal capacity, each capable of meeting the design bases. Each train includes a containment spray pump, spray header~~s~~, shutdown heat exchanger, nozzles, valves, and piping. Each train is powered from a separate ESF bus. The refueling water tank (RWT) supplies borated water to the containment spray during the injection phase of operation. In the recirculation mode of operation, containment spray pump suction is transferred from the RWT to the containment sump(s). 2

The Containment Spray System provides a spray of cold borated water mixed with sodium hydroxide from the spray additive tank into the upper regions of containment to reduce containment pressure and temperature and to reduce the concentration of fission products in the containment atmosphere during a DBA. The RWT solution temperature is an

BASES

BACKGROUND (continued)

important factor in determining the heat removal capability of the Containment Spray System during the injection phase. In the recirculation mode of operation, heat is removed from the containment sump water by the shutdown cooling heat exchangers. Each train of the Containment Spray System provides adequate spray coverage to meet 50% of the system design requirements for containment heat removal and 100% of the iodine removal design bases.

sodium hydroxide (NaOH)

The Spray Additive System injects a ~~hydrazine (N_2H_4)~~ solution into the spray. The resulting alkaline pH of the spray enhances its ability to scavenge fission products from the containment atmosphere. The ~~N_2H_4~~ NaOH added to the spray also ensures an alkaline pH for the solution recirculated in the containment sump. The alkaline pH of the containment sump water minimizes the evolution of iodine and minimizes the occurrence of chloride and caustic stress corrosion on mechanical systems and components exposed to the fluid.

The Containment Spray System is actuated either automatically by a containment High-High pressure signal coincident with a safety injection actuation signal (SIAS) or manually. An automatic actuation opens the containment spray pump discharge valves, starts the two Containment Spray System pumps, and begins the injection phase. The containment spray header isolation valves open upon a containment spray actuation signal. A manual actuation of the Containment Spray System is available on the main control board to begin the same sequence. The injection phase continues until an RWT level Low signal is received. The Low level for the RWT generates a recirculation actuation signal that aligns valves from the containment spray pump suction to the containment sump. The Containment Spray System in recirculation mode maintains an equilibrium temperature between the containment atmosphere and the recirculated sump water. Operation of the Containment Spray System in the recirculation mode is controlled by the operator in accordance with the emergency operating procedures.

<u>Containment Cooling System</u>

redundant essential cooling headers through normally open valves

Two trains of containment cooling, each of sufficient capacity to supply 50% of the design cooling requirement, are provided. Two trains with two fan units each are supplied with component cooling water from ~~a separate train of service water cooling~~. All four fans are required to furnish the design cooling capacity. ~~Air is drawn into the coolers through the fans and discharged to the steam generator compartments and pressurizer compartment.~~

BASES

BACKGROUND (continued)

During normal operation, all four containment fan coolers are in operation. If a fan were to be idle, it would automatically be started on receipt of an SIAS.

~~In post accident operation following a containment cooling actuation signal (CCAS), all four Containment Cooling System fans are designed to start automatically in slow speed. Cooling is shifted from the chilled water cooled coils to the service water cooled coils.~~ The temperature of the ~~service~~ component cooling water and intake cooling water ~~is~~ are an important factor in the heat removal capability of the fan units. 2

APPLICABLE SAFETY ANALYSES

The Containment Spray System and Containment Cooling System limit the temperature and pressure that could be experienced following a DBA. The limiting DBAs considered relative to containment temperature and pressure are the loss of coolant accident (LOCA) and the main steam line break (MSLB). The DBA LOCA and MSLB are analyzed using computer codes designed to predict the resultant containment pressure and temperature transients. No DBAs are assumed to occur simultaneously or consecutively. The postulated DBAs are analyzed with regard to containment ESF systems, assuming the loss of one ESF bus, which is the worst case single active failure, resulting in one train of the Containment Spray System and one train of the Containment Cooling System being rendered inoperable.

The analysis and evaluation show that under the worst case scenario, the highest peak containment pressure is ~~[55.7]~~ 42.77 psig (experienced during a~~n~~ ~~MSLB~~ LOCA). The analysis shows that the peak containment vapor temperature is ~~[413]~~ 387 °F (experienced during an MSLB). Both results are within the design. (See the Bases for Specifications 3.6.4~~A and 3.6.4B~~, "Containment Pressure," and 3.6.5, "Containment Air Temperature," for a detailed discussion.) The analyses and evaluations assume a power level of ~~[102]~~ 100.3% RTP, one containment spray train and one containment cooling train operating, and initial (pre-accident) conditions of ~~[~~120~~]~~°F and ~~[14.7]~~ 15.51 psia. The analyses also assume a response time delayed initiation in order to provide a conservative calculation of peak containment pressure and temperature responses. 3 2 3 2 3

The effect of an inadvertent containment spray actuation has been analyzed. An inadvertent spray actuation ~~reduces the~~ results in an annulus to containment differential pressure ~~to [-2.8] psig~~ of 0.9996 psid due to the sudden cooling effect in the interior of the air tight containment. Additional discussion is provided in the Bases for Specifications 3.6.4~~A, 3.6.4B~~, and 3.6.~~12~~ 8, "Vacuum Relief Valves." 2 3 2 1

The modeled Containment Spray System actuation from the containment analysis is based upon a response time associated with exceeding the containment High-High pressure setpoint coincident with an SIAS to achieve full flow through the containment spray nozzles. The

BASES

APPLICABLE SAFETY ANALYSES (continued)

Containment Spray System total response time of ~~[60]~~ 80.4 seconds includes diesel generator startup (for loss of offsite power), block loading of equipment, containment spray pump startup, and spray line filling (Ref. 2). 3

The performance of the containment cooling train for post accident conditions is given in Reference ~~3~~ 2. The result of the analysis is that each train can provide 50% of the required peak cooling capacity during the post accident condition. The train post accident cooling capacity under varying containment ambient conditions, required to perform the accident analyses, is also shown in Reference ~~4~~ 2. 2

The modeled Containment Cooling System actuation from the containment analysis is based upon the unit specific response time associated with exceeding the ~~CCAS~~ SIAS to achieve full Containment Cooling System air and safety grade cooling water flow. 2

The Containment Spray System and the Containment Cooling System satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

During a DBA, a minimum of two containment cooling trains or two containment spray trains, or one of each, is required to maintain the containment peak pressure and temperature below the design limits (Ref. ~~5~~ 2). Additionally, one containment spray train is also required to remove iodine from the containment atmosphere and maintain concentrations below those assumed in the safety analysis. To ensure that these requirements are met, two containment spray trains and two containment cooling units must be OPERABLE. Therefore, in the event of an accident, the minimum requirements are met, assuming that the worst case single active failure occurs. 2

Each Containment Spray System includes a spray pump, spray header~~s~~, shutdown heat exchanger, nozzles, valves, piping, instruments, and controls to ensure an OPERABLE flow path capable of taking suction from the RWT upon an ESF actuation signal and automatically transferring suction to the containment sump. Management of gas voids is important to Containment Spray System OPERABILITY. 2

Each Containment Cooling System includes ~~demisters,~~ cooling coils, ~~dampers,~~ fans, instruments, and controls to ensure an OPERABLE flow path. 2

APPLICABILITY

In MODES 1, 2, ~~3,~~ and ~~4~~ 3, a DBA could cause a release of radioactive material to containment and an increase in containment pressure and temperature, requiring the operation of the containment spray trains and containment cooling trains. Containment spray trains are not required to be OPERABLE when pressurizer pressure is < 1750 psia. 2

BASES

APPLICABILITY (continued)

4, 5,

In MODES ~~5~~ and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Thus, the ~~Containment Spray and~~ Containment Cooling ~~systems are~~ not required to be OPERABLE in MODES ~~5~~ and 6. 2

System is 4, 5,

ACTIONS

A.1

~~-----REVIEWER'S NOTE-----~~
~~Utilization of the 7 day Completion Time for Required Action A.1 is dependent on the licensee adopting CE NPSD-1045-A (Ref. 6) and meeting the requirements of the Topical Report and the associated Safety Evaluation including the following commitment: "[LICENSEE] has enhanced its Configuration Risk Management Program, as implemented under 10 CFR 50.65(a)(4), the Maintenance Rule, to include a Large Early Release Fraction assessment to support this application." Otherwise, a 72 hour Completion Time applies.~~ 4
~~----------~~

and pressurizer pressure ≥ 1750 psia 7

With one containment spray train inoperable, the inoperable containment spray train must be restored to OPERABLE status within ~~[~~7~~]~~ days ~~[~~or in accordance with the Risk Informed Completion Time Program~~]~~. In this Condition, the remaining OPERABLE spray and cooling trains are adequate to perform the iodine removal and containment cooling functions. The ~~[~~7~~]~~ day Completion Time takes into account the redundant heat removal capability afforded by the Containment Spray System, reasonable time for repairs~~, and the findings of Ref. 6~~. 3 2

Containment Cooling System and

B.1

and pressurizer pressure ≥ 1750 psia 7

With one required containment cooling train inoperable, the inoperable containment cooling train must be restored to OPERABLE status within 7 days ~~[~~or in accordance with the Risk Informed Completion Time Program~~]~~. The components in this degraded condition are capable of providing greater than 100% of the heat removal needs (for the condition of one containment cooling train inoperable) after an accident. The 7 day Completion Time was developed based on the same reasons as those for Required Action A.1. 3

BASES

ACTIONS (continued)

C.1

and pressurizer pressure ≥ 1750 psia

With two required containment spray trains inoperable, at least one of the required containment spray trains must be restored to OPERABLE status within 24 hours. Both trains of containment cooling must be OPERABLE or Condition I ~~G~~ is also entered. The Condition is modified by a Note stating it is not applicable if the second containment spray train is intentionally declared inoperable. The Condition does not apply to voluntary removal of redundant systems or components from service. The Condition is only applicable if one train is inoperable for any reason and the second train is discovered to be inoperable, or if both trains are discovered to be inoperable at the same time. In addition, LCO 3.7.10 ~~11~~, "Control Room Emergency Ventilation System (CREVS) ~~CREACS~~," must be verified to be met within 1 hour. The components in this degraded condition are capable of providing greater than 100% of the heat removal needs after an accident. The Completion Time is based on Reference 3 ~~7~~ which demonstrated that the 24 hour Completion Time is acceptable based on the redundant heat removal capabilities afforded by the Containment Cooling System, the iodine removal capability of CREVS ~~the Control Room Emergency Air Cleanup System~~, the infrequent use of the Required Action, and the small incremental effect on plant risk. 7 5 2

D.1 and D.2

with pressurizer pressure ≥ 1750 psia

With one containment spray train and one containment cooling train inoperable, one of the required containment spray or containment cooling trains must be restored to OPERABLE status within 72 hours ~~[~~or in accordance with the Risk Informed Completion Time Program~~]~~. The components in this degraded condition provide iodine removal capabilities and are capable of providing at least 100% of the heat removal needs after an accident. The 72 hour Completion Time was developed taking into account the redundant heat removal capabilities afforded by combinations of the Containment Spray System and Containment Cooling System, the iodine removal function of the Containment Spray System, and the low probability of a DBA occurring during this period. 7 3

E.1

and pressurizer pressure ≥ 1750 psia

With two required containment cooling trains inoperable, one of the required containment cooling trains must be restored to OPERABLE status within 72 hours ~~[~~or in accordance with the Risk Informed Completion Time Program~~]~~. The components in this degraded condition provide iodine removal capabilities and are capable of providing at least 100% of the heat removal needs after an accident. The 72 hour 7 3

BASES

ACTIONS (continued)

Completion Time was developed taking into account the redundant heat removal capabilities afforded by ~~combinations of~~ the Containment Spray System ~~and Containment Cooling System~~, the iodine removal function of the Containment Spray System, and the low probability of a DBA occurring during this period. 2

F.1 and F.2

~~REVIEWER'S NOTE~~
~~Adoption of a MODE 4 end state requires the licensee to make the following commitments:~~

~~1. [LICENSEE] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision [4F].~~ 4

~~2. [LICENSEE] will follow the guidance established in Revision 2 of WCAP-16364-NP, "Implementation Guidance for Risk Informed Modification to Selected Required Action End States at Combustion Engineering NSSS Plants (TSTF-422)," Westinghouse, May 2010.~~

of Condition A, B, C, D, or E

If the Required Actions and associated Completion Times are not met, the plant must be brought to a ~~MODE in which overall plant risk is minimized~~. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and ~~to MODE 4~~ within 12 hours. 7

condition where the requirements do not apply. Containment spray trains are not required to be OPERABLE when pressurizer pressure is below 1750 psia and other Conditions apply when containment cooling trains are inoperable with pressurizer pressure below 1750 psia.

reduce pressurizer pressure to < 1750 psia

If one or more containment cooling trains remain inoperable once pressurizer pressure is < 1750 psia, the Conditions (i.e., Conditions G and I) must be entered, as applicable, and Required Actions performed within the associated Completion Times.

~~Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 8). In MODE 4 there are more accident mitigation systems available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state.~~ 2

~~Required Action F.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the~~ 6

BASES

ACTIONS (continued)

~~results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.~~ 6

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.

Insert 1 7

I ~~G~~.1 2

with pressurizer pressure ≥ 1750 psia

With any combination of three or more Containment Spray System and Containment Cooling System trains inoperable, the unit is in a condition outside the accident analysis. Therefore, LCO 3.0.3 must be entered immediately. 7

Insert 2

SURVEILLANCE REQUIREMENTS

SR 3.6.6~~A~~.1 1

Verifying the correct alignment for manual, power operated, and automatic valves in the containment spray flow path provides assurance that the proper flow paths will exist for Containment Spray System operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these were verified to be in the correct position prior to being secured. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves.

This SR does not require any testing or valve manipulation. Rather, it involves verifying that those valves outside containment and capable of potentially being mispositioned are in the correct position.

~~[The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

7

INSERT 1

G.1

With one required containment cooling train inoperable in MODE 3 with pressurizer pressure < 1750 psia, the inoperable containment cooling train must be restored to OPERABLE status within 72 hours. The remaining OPERABLE containment cooling train can provide sufficient heat removal needs after an accident when in MODE 3 and pressurizer pressure < 1750 psia. The 72 hours Completion Time was developed considering the reduced heat removal needs and the low probability of a DBA occurring during this period.

H.1

If the Required Action and associated Completion Time of Condition G are not met, 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 4 within 12 hours. The allowed Completion Time is reasonable, based on operating experience, to reach the required plant condition in an orderly manner.

7

INSERT 2

Additionally, with two containment cooling trains inoperable with pressurizer pressure < 1750 psia the containment cooling function may be lost since the Containment Spray System is not required to be OPERABLE below 1750 psia.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~--]~~ 3

The Surveillance is modified by a Note which exempts system vent flow paths opened under administrative control. The administrative control should be proceduralized and include stationing a dedicated individual at the system vent flow path who is in continuous communication with the operators in the control room. This individual will have a method to rapidly close the system vent flow path if directed.

SR 3.6.6~~A~~.2 1

Operating each containment cooling train fan unit for ≥ 15 minutes ensures that all trains are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected and corrective action taken. ~~[The 31 day Frequency of this SR was developed considering the known reliability of the fan units and controls, the two train redundancy available, and the low probability of a significant degradation of the containment cooling train occurring between surveillances and has been shown to be acceptable through operating experience.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~--]~~ 3

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.6~~A~~.3

cooling 1200

Verifying a ~~service~~ water flow rate of ≥ ~~[2000]~~ gpm to each cooling unit provides assurance that the design flow rate assumed in the safety analyses will be achieved (Ref. 2). ~~[Also considered in selecting the Frequency of 31 days were the known reliability of the Cooling Water System, the two train redundancy, and the low probability of a significant degradation of flow occurring between surveillances.~~

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~

~~[~~ SR 3.6.6~~A~~.4

~~Verifying that the containment spray header piping is full of water to the [100] ft level minimizes the time required to fill the header. This ensures that spray flow will be admitted to the containment atmosphere within the time frame assumed in the containment analysis. [The 31 day Frequency is based on the static nature of the fill header and the low probability of a significant degradation of water level in the piping occurring between surveillances.~~

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]]~~

This surveillance verifies that each automatic valve in the recirculation mode flow path actuates to the correct position on an actual or simulated actuation signal. The surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls.

1 2 3 1 4 3 1 3 4 3

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.6~~A~~.5

Containment Spray System piping and components have the potential to develop voids and pockets of entrained gases. Preventing and managing gas intrusion and accumulation is necessary for proper operation of the required containment spray trains and may also prevent water hammer and pump cavitation.

Selection of Containment Spray System locations susceptible to gas accumulation is based on a review of system design information, including piping and instrumentation drawings, isometric drawings, plan and elevation drawings, and calculations. The design review is supplemented by system walk downs to validate the system high points and to confirm the location and orientation of important components that can become sources of gas or could otherwise cause gas to be trapped or difficult to remove during system maintenance or restoration. Susceptible locations depend on plant and system configuration, such as stand-by versus operating conditions.

The Containment Spray System is OPERABLE when it is sufficiently filled with water. Acceptance criteria are established for the volume of accumulated gas at susceptible locations. If accumulated gas is discovered that exceeds the acceptance criteria for the susceptible location (or the volume of accumulated gas at one or more susceptible locations exceeds an acceptance criteria for gas volume at the suction or discharge of a pump), the Surveillance is not met. If the accumulated gas is eliminated or brought within the acceptable criteria limits during performance of the Surveillance, the Surveillance is met and past system OPERABILITY is evaluated under the Corrective Action Program. If it is determined by subsequent evaluation that the Containment Spray System is not rendered inoperable by the accumulated gas (i.e., the system is sufficiently filled with water), the Surveillance may be declared met. Accumulated gas should be eliminated or brought within the acceptance criteria limits.

Containment Spray System locations susceptible to gas accumulation are monitored and, if gas is found, the gas volume is compared to the acceptance criteria for the location. Susceptible locations in the same system flow path which are subject to the same gas intrusion mechanisms may be verified by monitoring a representative sub-set of susceptible locations. Monitoring may not be practical for locations that are inaccessible due to radiological or environmental conditions, the plant configuration, or personnel safety. For these locations alternative methods (e.g., operating parameters, remote monitoring) may be used to monitor the susceptible location. Monitoring is not required for susceptible locations where the maximum potential accumulated gas void

BASES

SURVEILLANCE REQUIREMENTS (continued)

volume has been evaluated and determined to not challenge system OPERABILITY. The accuracy of the method used for monitoring the susceptible locations and trending of the results should be sufficient to assure system OPERABILITY during the Surveillance interval.

~~[The 31 day Frequency takes into consideration the gradual nature of gas accumulation in the Containment Spray System piping and the procedural controls governing system operation.~~

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Surveillance Frequency may vary by location susceptible to gas accumulation.

~~-----------------------------REVIEWER'S NOTE-----------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~

SR 3.6.6~~A~~.6

Verifying that each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head ensures that spray pump performance has not degraded during the cycle. Flow and differential pressure are normal tests of centrifugal pump performance required by the ASME Code (Ref. ~~9~~). Since the containment spray pumps cannot be tested with flow through the spray headers, they are tested on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. The Frequency of this SR is in accordance with the INSERVICE TESTING PROGRAM.

SR 3.6.6~~A~~.7 and SR 3.6.6~~A~~.8

These SRs verify that each automatic containment spray valve actuates to its correct position and that each containment spray pump starts upon receipt of an actual or simulated actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. ~~[The [18] month~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillances when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~-----]~~ 3

The surveillance of containment sump isolation valves is also required by 6 SR 3.5.2.~~5~~. A single surveillance may be used to satisfy both requirements. 2

SR 3.6.6~~A~~.9 1

This SR verifies that each containment cooling train actuates upon receipt of an actual or simulated actuation signal. ~~[The [18] month Frequency is based on engineering judgment and has been shown to be acceptable through operating experience. See SR 3.6.6A.7 and SR 3.6.6A.8, above, for further discussion of the basis for the [18] month Frequency.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~-----]~~ 3

1

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.6~~A~~.10

1

With the containment spray inlet valves closed and the spray header drained of any solution, low pressure air or smoke can be blown through test connections. Performance of this SR demonstrates that each spray nozzle is unobstructed and provides assurance that spray coverage of the containment during an accident is not degraded. ~~[~~ Due to the passive design of the nozzle, a test ~~at [the first refueling and at] 10 year intervals~~ following maintenance that could result in nozzle blockage is considered adequate to detect obstruction of the spray nozzles.

~~OR~~

Foreign material introduced as a result of maintenance, although unlikely, is the most likely potential cause for future spray nozzle obstruction. Therefore, verification conducted to confirm that potentially affected nozzles are free of blockage following maintenance activities that could result in nozzle blockage, is sufficient to confirm that the nozzles are free of obstruction.

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

3 2

~~REVIEWER'S NOTE~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~]~~

4

3

REFERENCES

1. 10 CFR 50, Appendix A, GDC 38, GDC 39, GDC 40, GDC 41, GDC 42, and GDC 43.

2. U FSAR, Section ~~[~~ 6.2 ~~]~~.

~~3. FSAR, Section [ ].~~

~~4. FSAR, Section [ ].~~

~~5. FSAR, Section [ ].~~

~~6. CE NPSD-1045-A, "CEOG Joint Application Report for Modification to the Containment Spray System Technical Specifications," March 2000.~~

3 ~~7~~. WCAP-16125-NP-A, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 2, August 2010.

~~8. CE NPSD-1186-A, Technical Justification for the Risk Informed Modification to Selected Required Action End States for CEOG PWRs, October, 2001.~~

4 ~~9~~. ASME Code for Operation and Maintenance of Nuclear Power Plants.

2 3

2

B 3.6 CONTAINMENT SYSTEMS

B 3.6.6~~A~~ Containment Spray and Cooling Systems ~~(Atmospheric and Dual)~~ ~~(Credit taken for iodine removal by the Containment Spray System)~~ 1

BASES

BACKGROUND

The Containment Spray and Containment Cooling systems provide containment atmosphere cooling to limit post accident pressure and temperature in containment to less than the design values. Reduction of containment pressure and the iodine removal capability of the spray reduce the release of fission product radioactivity from containment to the environment, in the event of a Design Basis Accident (DBA), to within limits. The Containment Spray and Containment Cooling systems are designed to the requirements of 10 CFR 50, Appendix A, GDC 38, "Containment Heat Removal," GDC 39, "Inspection of Containment Heat Removal Systems," GDC 40, "Testing of Containment Heat Removal Systems," GDC 41, "Containment Atmosphere Cleanup," GDC 42, "Inspection of Containment Atmosphere Cleanup Systems," and GDC 43, "Testing of Containment Atmosphere Cleanup Systems" (Ref. 1), or other documents that were appropriate at the time of licensing (identified on a unit specific basis).

The Containment Cooling System and Containment Spray System are Engineered Safety Feature (ESF) systems. They are designed to ensure that the heat removal capability required during the post accident period can be attained. The Containment Spray System and the Containment Cooling System provide redundant methods to limit and maintain post accident conditions to less than the containment design values.

Containment Spray System

The Containment Spray System consists of two separate trains of equal capacity, each capable of meeting the design bases. Each train includes a containment spray pump, spray header~~s~~, shutdown heat exchanger, nozzles, valves, and piping. 2
Each train is powered from a separate ESF bus. The refueling water tank (RWT) supplies borated water to the containment spray during the injection phase of operation. In the recirculation mode of operation, containment spray pump suction is transferred from the RWT to the containment sump(s).

The Containment Spray System provides a spray of cold borated water ~~mixed with sodium hydroxide from the spray additive tank~~ into the upper 8
regions of containment to reduce containment pressure and temperature and to reduce the concentration of fission products in the containment atmosphere during a DBA. The RWT solution temperature is an

BASES

BACKGROUND (continued)

important factor in determining the heat removal capability of the Containment Spray System during the injection phase. In the recirculation mode of operation, heat is removed from the containment sump water by the shutdown cooling heat exchangers. Each train of the Containment Spray System provides adequate spray coverage to meet 50% of the system design requirements for containment heat removal ~~and 100% of the iodine removal design bases~~.

~~The Spray Additive System injects a hydrazine (N_2H_4) solution into the spray. The resulting alkaline pH of the spray enhances its ability to scavenge fission products from the containment atmosphere. The N_2H_4 added to the spray also ensures an alkaline pH for the solution recirculated in the containment sump. The alkaline pH of the containment sump water minimizes the evolution of iodine and minimizes the occurrence of chloride and caustic stress corrosion on mechanical systems and components exposed to the fluid.~~ 8

The Containment Spray System is actuated either automatically by a containment High-High pressure signal coincident with a safety injection actuation signal (SIAS) or manually. An automatic actuation opens the containment spray ~~pump discharge~~ isolation valves, starts the two Containment Spray System pumps, and begins the injection phase. The containment spray header isolation valves open upon a containment spray actuation signal. A manual actuation of the Containment Spray System is available on the main control board to begin the same sequence. The injection phase continues until an RWT level Low signal is received. The Low level for the RWT generates a recirculation actuation signal that aligns valves from the containment spray pump suction to the containment sump. The Containment Spray System in recirculation mode maintains an equilibrium temperature between the containment atmosphere and the recirculated sump water. Operation of the Containment Spray System in the recirculation mode is controlled by the operator in accordance with the emergency operating procedures. 2

<u>Containment Cooling System</u>

Two trains of containment cooling, each of sufficient capacity to supply 50% of the design cooling requirement, are provided. Two trains with two fan units each are supplied with component cooling water from ~~a separate train of service water cooling~~ redundant essential cooling headers through normally open valves. All four fans are required to furnish the design cooling capacity. ~~Air is drawn into the coolers through the fans and discharged to the steam generator compartments and pressurizer compartment.~~ 2

BASES

BACKGROUND (continued)

Each train is supplied with component cooling water from redundant essential cooling headers through normally open valves.

SIAS

In post accident operation following a ~~containment cooling~~ actuation ~~signal (CCAS),~~ all four Containment Cooling System fans are designed to start automatically in slow speed. ~~Cooling is shifted from the chilled water cooled coils to the service water cooled coils.~~ The temperature of the ~~service~~ component cooling water and intake cooling water is an important factor in the heat removal capability of the fan units. 2

APPLICABLE SAFETY ANALYSES

The Containment Spray System and Containment Cooling System limit the temperature and pressure that could be experienced following a DBA. The limiting DBAs considered relative to containment temperature and pressure are the loss of coolant accident (LOCA) and the main steam line break (MSLB). The DBA LOCA and MSLB are analyzed using computer codes designed to predict the resultant containment pressure and temperature transients. No DBAs are assumed to occur simultaneously or consecutively. The postulated DBAs are analyzed with regard to containment ESF systems, assuming the loss of one ESF bus, which is the worst case single active failure, resulting in one train of the Containment Spray System and one train of the Containment Cooling System being rendered inoperable.

The analysis and evaluation show that under the worst case scenario, the highest peak containment pressure is ~~[55.7]~~ 43.43 psig (experienced during a~~n~~ ~~MSLB~~ LOCA). The analysis shows that the peak containment vapor temperature is ~~[413]~~ 377 °F (experienced during an MSLB). Both results are within the design. (See the Bases for Specifications 3.6.4~~A~~ ~~and 3.6.4B~~, "Containment Pressure," and 3.6.5, "Containment Air Temperature," for a detailed discussion.) The analyses and evaluations assume a power level of ~~[102]~~ 100.3% RTP, one containment spray train and one containment cooling train operating, and initial (pre-accident) conditions of ~~[~~120~~]~~°F and ~~[14.7]~~ 15.41 psia. The analyses also assume a response time delayed initiation in order to provide a conservative calculation of peak containment pressure and temperature responses. 3 2 3 2 3

The effect of an inadvertent containment spray actuation has been analyzed. An inadvertent spray actuation ~~reduces the~~ results in an annulus to containment differential pressure ~~to [-2.8] psig~~ of 0.9983 psid due to the sudden cooling effect in the interior of the air tight containment. Additional discussion is provided in the Bases for Specifications 3.6.4~~A, 3.6.4B~~, and 3.6.~~12~~ 8, "Vacuum Relief Valves." 2 3 2 1

The modeled Containment Spray System actuation from the containment analysis is based upon a response time associated with exceeding the containment High-High pressure setpoint coincident with an SIAS to achieve full flow through the containment spray nozzles. The

BASES

APPLICABLE SAFETY ANALYSES (continued)

58.5

Containment Spray System total response time of ~~[60]~~ seconds includes diesel generator startup (for loss of offsite power), block loading of equipment, containment spray pump startup, and spray line filling (Ref. 2). 3

2 The performance of the containment cooling train for post accident conditions is given in Reference ~~3~~. The result of the analysis is that each train can provide 50% of the required peak cooling capacity during the post accident condition. The train post accident cooling capacity under varying containment ambient conditions, required to perform the accident analyses, is also shown in Reference ~~4~~. 2 2

The modeled Containment Cooling System actuation from the containment analysis is based upon the unit specific response time associated with exceeding the ~~CCAS~~ SIAS to achieve full Containment Cooling System air and safety grade cooling water flow. 2

The Containment Spray System and the Containment Cooling System satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

During a DBA, a minimum of two containment cooling trains or two containment spray trains, or one of each, is required to maintain the containment peak pressure and temperature below the design limits 2 (Ref. ~~5~~). Additionally, one containment spray train is also required to remove iodine from the containment atmosphere and maintain concentrations below those assumed in the safety analysis. To ensure that these requirements are met, two containment spray trains and two containment cooling units must be OPERABLE. Therefore, in the event of an accident, the minimum requirements are met, assuming that the worst case single active failure occurs. 2

shutdown heat exchanger,

Each Containment Spray System includes a spray pump, spray header~~s~~, nozzles, valves, piping, instruments, and controls to ensure an OPERABLE flow path capable of taking suction from the RWT upon an ESF actuation signal and automatically transferring suction to the containment sump. Management of gas voids is important to Containment Spray System OPERABILITY. 2

Each Containment Cooling System includes ~~demisters,~~ cooling coils, ~~dampers,~~ fans, instruments, and controls to ensure an OPERABLE flow path. 2

APPLICABILITY

3

In MODES 1, 2, ~~3,~~ and ~~4~~, a DBA could cause a release of radioactive material to containment and an increase in containment pressure and temperature, requiring the operation of the containment spray trains and containment cooling trains. 2

Containment spray trains are not required to be OPERABLE when pressurizer pressure is < 1750 psia.

1

BASES

APPLICABILITY (continued)

4, 5,

In MODES ~~5~~ and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Thus, the ~~Containment Spray and~~ Containment Cooling ~~systems are~~ not required to be OPERABLE in MODES ~~5~~ and 6.

System is

4, 5,

2

ACTIONS

A.1

~~REVIEWER'S NOTE~~
~~Utilization of the 7 day Completion Time for Required Action A.1 is dependent on the licensee adopting CE NPSD-1045-A (Ref. 6) and meeting the requirements of the Topical Report and the associated Safety Evaluation including the following commitment: "[LICENSEE] has enhanced its Configuration Risk Management Program, as implemented under 10 CFR 50.65(a)(4), the Maintenance Rule, to include a Large Early Release Fraction assessment to support this application." Otherwise, a 72 hour Completion Time applies.~~

4

and pressurizer pressure ≥ 1750 psia

7

With one containment spray train inoperable, the inoperable containment spray train must be restored to OPERABLE status within ~~[~~7~~]~~ days ~~[~~or in accordance with the Risk Informed Completion Time Program~~]~~. In this Condition, the remaining OPERABLE spray and cooling trains are adequate to perform the iodine removal and containment cooling functions. The ~~[~~7~~]~~ day Completion Time takes into account the redundant heat removal capability afforded by the Containment Spray System, reasonable time for repairs~~, and the findings of Ref. 6~~.

3

Containment Cooling System and

2

B.1

and pressurizer pressure ≥ 1750 psia

7

With one required containment cooling train inoperable, the inoperable containment cooling train must be restored to OPERABLE status within 7 days ~~[~~or in accordance with the Risk Informed Completion Time Program~~]~~. The components in this degraded condition are capable of providing greater than 100% of the heat removal needs (for the condition of one containment cooling train inoperable) after an accident. The 7 day Completion Time was developed based on the same reasons as those for Required Action A.1.

3

1 2

BASES

ACTIONS (continued)

C.1

With two required containment spray trains inoperable and pressurizer pressure ≥ 1750 psia, at least one of the required containment spray trains must be restored to OPERABLE status within 24 hours. Both trains of containment cooling must be OPERABLE or Condition I ~~G~~ is also entered. The Condition is modified by a Note stating it is not applicable if the second containment spray train is intentionally declared inoperable. The Condition does not apply to voluntary removal of redundant systems or components from service. The Condition is only applicable if one train is inoperable for any reason and the second train is discovered to be inoperable, or if both trains are discovered to be inoperable at the same time. In addition, LCO 3.7.10 ~~11~~, "Control Room Emergency Ventilation System (CREVS) ~~CREACS~~," must be verified to be met within 1 hour. The components in this degraded condition are capable of providing greater than 100% of the heat removal needs after an accident. The Completion Time is based on Reference 3 ~~7~~ which demonstrated that the 24 hour Completion Time is acceptable based on the redundant heat removal capabilities afforded by the Containment Cooling System, the iodine removal capability of CREVS ~~the Control Room Emergency Air Cleanup System~~, the infrequent use of the Required Action, and the small incremental effect on plant risk. 7 5 2

D.1 and D.2

With one containment spray train and one containment cooling train inoperable with pressurizer pressure ≥ 1750 psia, one of the required containment spray or containment cooling trains must be restored to OPERABLE status within 72 hours ~~[~~or in accordance with the Risk Informed Completion Time Program~~]~~. The components in this degraded condition provide iodine removal capabilities and are capable of providing at least 100% of the heat removal needs after an accident. The 72 hour Completion Time was developed taking into account the redundant heat removal capabilities afforded by combinations of the Containment Spray System and Containment Cooling System, the iodine removal function of the Containment Spray System, and the low probability of a DBA occurring during this period. 7 3

E.1

With two required containment cooling trains inoperable and pressurizer pressure ≥ 1750 psia, one of the required containment cooling trains must be restored to OPERABLE status within 72 hours ~~[~~or in accordance with the Risk Informed Completion Time Program~~]~~. The components in this degraded condition provide iodine removal capabilities and are capable of providing at least 100% of the heat removal needs after an accident. The 72 hour 7 3

BASES

ACTIONS (continued)

Completion Time was developed taking into account the redundant heat removal capabilities afforded by ~~combinations of~~ the Containment Spray System ~~and Containment Cooling System~~, the iodine removal function of the Containment Spray System, and the low probability of a DBA occurring during this period. 2

F.1 and F.2

~~-----REVIEWER'S NOTE-----~~
~~Adoption of a MODE 4 end state requires the licensee to make the following commitments:~~

~~1. [LICENSEE] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision [4F].~~ 4

~~2. [LICENSEE] will follow the guidance established in Revision 2 of WCAP-16364-NP, "Implementation Guidance for Risk Informed Modification to Selected Required Action End States at Combustion Engineering NSSS Plants (TSTF-422)," Westinghouse, May 2010.~~
~~-----~~

If the Required Actions and associated Completion Times of Condition A, B, C, D, or E are not met, the plant must be brought to a condition where the requirements do not apply. Containment spray trains are not required to be OPERABLE when pressurizer pressure is below 1750 psia and other Conditions apply when containment cooling trains are inoperable with pressurizer pressure below 1750 psia. ~~MODE in which overall plant risk is minimized~~. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and reduce pressurizer pressure to < 1750 psia ~~to MODE 4~~ within 12 hours. If one or more containment cooling trains remain inoperable once pressurizer pressure is < 1750 psia, the Conditions (i.e., Conditions G and I) must be entered, as applicable, and Required Actions performed within the associated Completion Times. 7

~~Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 8). In MODE 4 there are more accident mitigation systems available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state.~~ 2

~~Required Action F.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the~~ 6

BASES

ACTIONS (continued)

~~results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.~~ 6

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.

Insert 1 7

I ~~G~~.1 2

with pressurizer pressure ≥ 1750 psia

With any combination of three or more Containment Spray System and Containment Cooling System trains inoperable, the unit is in a condition outside the accident analysis. Therefore, LCO 3.0.3 must be entered immediately. 7

Insert 2

SURVEILLANCE REQUIREMENTS

SR 3.6.6~~A~~.1 1

Verifying the correct alignment for manual, power operated, and automatic valves in the containment spray flow path provides assurance that the proper flow paths will exist for Containment Spray System operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these were verified to be in the correct position prior to being secured. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves.

This SR does not require any testing or valve manipulation. Rather, it involves verifying that those valves outside containment and capable of potentially being mispositioned are in the correct position.

~~[The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

7

INSERT 1

G.1

With one required containment cooling train inoperable in MODE 3 with pressurizer pressure < 1750 psia, the inoperable containment cooling train must be restored to OPERABLE status within 72 hours. The remaining OPERABLE containment cooling train can provide sufficient heat removal needs after an accident when in MODE 3 and pressurizer pressure < 1750 psia. The 72 hours Completion Time was developed considering the reduced heat removal needs and the low probability of a DBA occurring during this period.

H.1

If the Required Action and associated Completion Time of Condition G are not met, 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 4 within 12 hours. The allowed Completion Time is reasonable, based on operating experience, to reach the required plant condition in an orderly manner.

7

INSERT 2

Additionally, with two containment cooling trains inoperable with pressurizer pressure < 1750 psia the containment cooling function may be lost since the Containment Spray System is not required to be OPERABLE below 1750 psia.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-------------------------------REVIEWER'S NOTE-------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~---]~~ 3

The Surveillance is modified by a Note which exempts system vent flow paths opened under administrative control. The administrative control should be proceduralized and include stationing a dedicated individual at the system vent flow path who is in continuous communication with the operators in the control room. This individual will have a method to rapidly close the system vent flow path if directed.

SR 3.6.6~~A~~.2 1

Operating each containment cooling train fan unit for ≥ 15 minutes ensures that all trains are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected and corrective action taken. ~~[The 31 day Frequency of this SR was developed considering the known reliability of the fan units and controls, the two train redundancy available, and the low probability of a significant degradation of the containment cooling train occurring between surveillances and has been shown to be acceptable through operating experience.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-------------------------------REVIEWER'S NOTE-------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~---]~~ 3

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.6~~A~~.3 1

cooling 1200

Verifying a ~~service~~ water flow rate of ≥ ~~[2000]~~ gpm to each cooling unit provides assurance that the design flow rate assumed in the safety analyses will be achieved (Ref. 2). ~~[Also considered in selecting the Frequency of 31 days were the known reliability of the Cooling Water System, the two train redundancy, and the low probability of a significant degradation of flow occurring between surveillances.~~ 2 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~-----]~~ 3

~~[~~ SR 3.6.6~~A~~.4 1

~~Verifying that the containment spray header piping is full of water to the [100] ft level minimizes the time required to fill the header. This ensures that spray flow will be admitted to the containment atmosphere within the time frame assumed in the containment analysis. [The 31 day Frequency is based on the static nature of the fill header and the low probability of a significant degradation of water level in the piping occurring between surveillances.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~-----]]~~ 3

This surveillance verifies that each automatic valve in the recirculation mode flow path actuates to the correct position on an actual or simulated actuation signal. The surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.6~~A~~.5 1

Containment Spray System piping and components have the potential to develop voids and pockets of entrained gases. Preventing and managing gas intrusion and accumulation is necessary for proper operation of the required containment spray trains and may also prevent water hammer and pump cavitation.

Selection of Containment Spray System locations susceptible to gas accumulation is based on a review of system design information, including piping and instrumentation drawings, isometric drawings, plan and elevation drawings, and calculations. The design review is supplemented by system walk downs to validate the system high points and to confirm the location and orientation of important components that can become sources of gas or could otherwise cause gas to be trapped or difficult to remove during system maintenance or restoration. Susceptible locations depend on plant and system configuration, such as stand-by versus operating conditions.

The Containment Spray System is OPERABLE when it is sufficiently filled with water. Acceptance criteria are established for the volume of accumulated gas at susceptible locations. If accumulated gas is discovered that exceeds the acceptance criteria for the susceptible location (or the volume of accumulated gas at one or more susceptible locations exceeds an acceptance criteria for gas volume at the suction or discharge of a pump), the Surveillance is not met. If the accumulated gas is eliminated or brought within the acceptable criteria limits during performance of the Surveillance, the Surveillance is met and past system OPERABILITY is evaluated under the Corrective Action Program. If it is determined by subsequent evaluation that the Containment Spray System is not rendered inoperable by the accumulated gas (i.e., the system is sufficiently filled with water), the Surveillance may be declared met. Accumulated gas should be eliminated or brought within the acceptance criteria limits.

Containment Spray System locations susceptible to gas accumulation are monitored and, if gas is found, the gas volume is compared to the acceptance criteria for the location. Susceptible locations in the same system flow path which are subject to the same gas intrusion mechanisms may be verified by monitoring a representative sub-set of susceptible locations. Monitoring may not be practical for locations that are inaccessible due to radiological or environmental conditions, the plant configuration, or personnel safety. For these locations alternative methods (e.g., operating parameters, remote monitoring) may be used to monitor the susceptible location. Monitoring is not required for susceptible locations where the maximum potential accumulated gas void

BASES

SURVEILLANCE REQUIREMENTS (continued)

volume has been evaluated and determined to not challenge system OPERABILITY. The accuracy of the method used for monitoring the susceptible locations and trending of the results should be sufficient to assure system OPERABILITY during the Surveillance interval.

~~[The 31 day Frequency takes into consideration the gradual nature of gas accumulation in the Containment Spray System piping and the procedural controls governing system operation.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Surveillance Frequency may vary by location susceptible to gas accumulation.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~--]~~ 3

SR 3.6.6~~A~~.6 1

Verifying that each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head ensures that spray pump performance has not degraded during the cycle. Flow and differential pressure are normal tests of centrifugal pump performance required by the ASME Code (Ref. ~~9~~ 4). Since the containment spray pumps cannot be tested with flow through the spray headers, they are tested on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. The Frequency of this SR is in accordance with the INSERVICE TESTING PROGRAM. 2

SR 3.6.6~~A~~.7 and SR 3.6.6~~A~~.8 1

These SRs verify that each automatic containment spray valve actuates to its correct position and that each containment spray pump starts upon receipt of an actual or simulated actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. ~~[The [18] month~~ 3

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillances when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------REVIEWER'S NOTE-----------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~---]~~ 3

The surveillance of containment sump isolation valves is also required by 6 SR 3.5.2.~~5~~. A single surveillance may be used to satisfy both requirements. 2

SR 3.6.6~~A~~.9 1

This SR verifies that each containment cooling train actuates upon receipt of an actual or simulated actuation signal. ~~[The [18] month Frequency is based on engineering judgment and has been shown to be acceptable through operating experience. See SR 3.6.6A.7 and SR 3.6.6A.8, above, for further discussion of the basis for the [18] month Frequency.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------REVIEWER'S NOTE-----------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~---]~~ 3

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.6~~A~~.10 1

With the containment spray inlet valves closed and the spray header drained of any solution, low pressure air or smoke can be blown through test connections. Performance of this SR demonstrates that each spray nozzle is unobstructed and provides assurance that spray coverage of the containment during an accident is not degraded. ~~[~~ Due to the passive design of the nozzle, a test ~~at [the first refueling and at] 10 year intervals~~ following maintenance that could result in nozzle blockage is considered adequate to detect obstruction of the spray nozzles. 3 2
~~OR~~

Foreign material introduced as a result of maintenance, although unlikely, is the most likely potential cause for future spray nozzle obstruction. Therefore, verification conducted to confirm that potentially affected nozzles are free of blockage following maintenance activities that could result in nozzle blockage, is sufficient to confirm that the nozzles are free of obstruction.

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~-----]~~ 3

REFERENCES

1. 10 CFR 50, Appendix A, GDC 38, GDC 39, GDC 40, GDC 41, GDC 42, and GDC 43.
2. U FSAR, Section ~~[ ]~~ 6.2. 2 3
~~3. FSAR, Section [ ].~~
~~4. FSAR, Section [ ].~~
~~5. FSAR, Section [ ].~~
~~6. CE NPSD-1045-A, "CEOG Joint Application Report for Modification to the Containment Spray System Technical Specifications," March 2000.~~
~~7~~ 3. WCAP-16125-NP-A, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 2, August 2010. 2
~~8. CE NPSD-1186-A, Technical Justification for the Risk Informed Modification to Selected Required Action End States for CEOG PWRs, October, 2001.~~
~~9~~ 4. ASME Code for Operation and Maintenance of Nuclear Power Plants.

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.6 BASES, CONTAINMENT SPRAY AND COOLING SYSTEMS

1. The type of Containment (Atmospheric and Dual), Specification designator “A” and the descriptor (credit taken for iodine removal by the Containment Spray System) are deleted since they are unnecessary (only one Containment Specification type is used in the St. Lucie (PSL) Plant ITS). ISTS 3.6.6A is used for PSL Unit 1 and Unit 2. This information is provided in NUREG-1432, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation.

2. Changes are made (additions, deletions, and/or changes) to the ITS Bases that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS contains bracketed information and/or values that are generic to Combustion Engineering vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

4. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.

5. The PSL design does not include Essential Chilled Water (ECW). Therefore, ISTS 3.7.10 is not included in the PSL ITS. The Control Room Emergency Air Cleanup System (ISTS 3.7.11) is renumbered as ITS 3.7.10.

6. The LCO 3.0.4.a NOTE is not applicable for the PSL Unit 1 and 2 and has been removed.

7. Concomitant Bases changes made to reflect changes to the ISTS Specification regarding change to Applicability and ACTIONS to include different Containment Spray and Containment Cooling System requirements in MODE 3 based on pressurizer pressure.

8. **Unit 2 only:** “St. Lucie Plant, Unit No. 2 – Issuance of Amendment No. 201 Regarding Technical Specification Changes to Eliminate the Requirements of the Iodine Removal System,” dated November 20, 2019 (ADAMS Accession No. ML19248C238) approved the elimination of Iodine Removal System requirements for the Technical Specifications. Hydrazine is not credited for maintaining post-LOCA sump pH, nor is it credited in managing post-accident iodine in the radiological consequences of design-basis accidents. Reference to the iodine removal system and hydrazine are removed.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.6, CONTAINMENT SPRAY AND COOLING SYSTEMS

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 7

ITS 3.6.7, Shield Building

Current Technical Specifications (CTS) Markup
and Discussion of Changes (DOCs)

CONTAINMENT SYSTEMS

SHIELD BUILDING ~~INTEGRITY~~

LIMITING CONDITION FOR OPERATION

LCO 3.6.7 3.6.6.2 SHIELD BUILDING ~~INTEGRITY~~ shall be ~~maintained~~ OPERABLE.

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

ACTION:

ACTION A
ACTION B
Required Action B.2 NOTE

Without SHIELD BUILDING INTEGRITY, restore SHIELD BUILDING INTEGRITY within 24 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. LCO 3.0.4.a is not applicable when entering HOT SHUTDOWN.

SURVEILLANCE REQUIREMENTS

SR 3.6.7.1 4.6.6.2 SHIELD BUILDING INTEGRITY shall be demonstrated in accordance with the Surveillance Frequency Control Program by verifying that the door in each access opening is closed except when the access opening is being used for normal transit entry and exit.

LCO 3.6.7 NOTE

CONTAINMENT SYSTEMS

SHIELD BUILDING ~~STRUCTURAL~~ INTEGRITY

LIMITING CONDITION FOR OPERATION

A02

LCO 3.6.7 3.6.6.3 ~~The structural integrity of the shield building shall be maintained at a level consistent with the acceptance criteria in Specification 4.6.6.3.~~

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

ACTION:

A03

~~With the structural integrity of the shield building not conforming to the above requirements, restore the structural integrity to within the limits prior to increasing the Reactor Coolant System temperature above 200°F.~~

SURVEILLANCE REQUIREMENTS

SR 3.6.7.2 4.6.6.3 The structural integrity of the shield building shall be determined, in accordance with the Containment Leakage Rate Testing Program, by a visual inspection of the accessible interior and exterior surfaces of the shield building ~~and verifying no apparent changes in appearance of the concrete surfaces or other abnormal degradation~~.

LA01

CONTAINMENT SYSTEMS

3/4.6.6 SECONDARY CONTAINMENT

SHIELD BUILDING VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.6.1 Two independent shield building ventilation systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With one shield building ventilation system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

See ITS 3.6.9

NOTE

Action not applicable when second shield building ventilation system intentionally made inoperable.

b. With two shield building ventilation systems inoperable, within 1 hour verify at least one train of containment spray is OPERABLE, and restore at least one shield building ventilation system to OPERABLE status within 24 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.6.1 Each shield building ventilation system shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by initiating, from the control room, flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 continuous minutes with the heaters on.

See ITS 3.6.9

b. By performing required shield building ventilation system filter testing in accordance with the Ventilation Filter Testing Program.

SR 3.6.7.3 c. In accordance with the Surveillance Frequency Control Program by:

1. Verifying that the air flow distribution is uniform within 20% across HEPA filters and charcoal adsorbers when tested in accordance with ASME N510-1989.

See ITS 5.5.8

2. Verifying that the filtration system starts automatically on a Containment Isolation Signal (CIS).

3. Verifying that the filter cooling makeup air and cross connection valves can be manually opened.

See ITS 3.6.9

SR 3.6.7.3 4. Verifying that each system produces a negative pressure of $\geq$ 2.0 inches W.G. in the annulus within 2 minutes after a Containment Isolation Signal (CIS).

DEFINITIONS

RATED THERMAL POWER

1.25 RATED THERMAL POWER shall be a total reactor core heat transfer rate to the reactor coolant of 3020 MWt.

REACTOR TRIP SYSTEM RESPONSE TIME

1.26 The REACTOR TRIP SYSTEM RESPONSE TIME shall be the time interval from when the monitored parameter exceeds its trip setpoint at the channel sensor until electrical power to the CEA drive mechanism is interrupted. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC. See ITS Chapter 1.0

REPORTABLE EVENT

1.27 A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

~~SHIELD BUILDING INTEGRITY~~

1.28 SHIELD BUILDING INTEGRITY shall exist when:

SR 3.6.7.1 a. Each door is closed except when the access opening is being used for normal transit entry and exit;

b. The shield building ventilation system is in compliance with Specification 3.6.6.1, and See ITS

~~c. The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.~~ LA02

SHUTDOWN MARGIN

1.29 SHUTDOWN MARGIN shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming all full-length control element assemblies (shutdown and regulating) are fully inserted except for the single assembly of highest reactivity worth which is assumed to be fully withdrawn.

SITE BOUNDARY

1.30 SITE BOUNDARY means that line beyond which the land or property is not owned, leased, or otherwise controlled by the licensee. See ITS Chapter 1.0

SOURCE CHECK

1.31 A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a radioactive source.

CONTAINMENT SYSTEMS

SHIELD BUILDING ~~INTEGRITY~~

LIMITING CONDITION FOR OPERATION

LCO 3.6.7 3.6.6.2 SHIELD BUILDING ~~INTEGRITY~~ shall be ~~maintained~~ OPERABLE.

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

ACTION:

ACTION A
ACTION B
Required Action B.2 NOTE

Without SHIELD BUILDING INTEGRITY, restore SHIELD BUILDING INTEGRITY within 24 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. LCO 3.0.4.a is not applicable when entering HOT SHUTDOWN.

SURVEILLANCE REQUIREMENTS

SR 3.6.7.1 4.6.6.2 SHIELD BUILDING INTEGRITY shall be demonstrated in accordance with the Surveillance Frequency Control Program by verifying that the door in each access opening is closed except when the access opening is being used for normal transit entry and exit.

LCO 3.6.7 NOTE

CONTAINMENT SYSTEMS

SHIELD BUILDING ~~STRUCTURAL~~ INTEGRITY

LIMITING CONDITION FOR OPERATION

LCO 3.6.7 3.6.6.3 ~~The structural integrity of the shield building shall be maintained at a level consistent with the acceptance criteria in Specification 4.6.6.3.~~ A02

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

ACTION:

ACTION A With the structural integrity of the shield building not conforming to the above requirements, restore the structural integrity to within the limits within 24 hours or be in at least HOT STANDBY within the next 6 hours ~~and in COLD SHUTDOWN within the following 30 hours.~~ L01

SURVEILLANCE REQUIREMENTS

SR 3.6.7.2 4.6.6.3 The structural integrity of the shield building shall be determined, in accordance with the Containment Leakage Rate Testing Program, by a visual inspection of the exposed accessible interior and exterior surfaces of the shield building ~~and verifying no apparent changes in appearance of the concrete surfaces or other abnormal degradation~~. LA01

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (continued)

2. Performing airflow distribution to HEPA filters and charcoal adsorbers in accordance with ASME N510-1989. The distribution shall be ± 20% of the average flow per unit.

See ITS 5.5.8

c. By performing required shield building ventilation system filter testing in accordance with the Ventilation Filter Testing Program.

d. In accordance with the Surveillance Frequency Control Program by:

See ITS 3.6.9

1. Verifying that the system starts on a Unit 2 containment isolation signal and on a fuel pool high radiation signal.

2. Verifying that the filter cooling makeup and cross connection valves can be manually opened.

SR 3.6.7.3

3. Verifying that each system produces a negative pressure of greater than or equal to 2.0 inches WG in the annulus within 99 seconds after a start signal.

4. Verifying that each system achieves a negative pressure of greater than 0.125 inch WG in the fuel storage building after actuation of a fuel storage building high radiation test signal.

See ITS 3.6.9

PRESSURE BOUNDARY LEAKAGE

1.22 PRESSURE BOUNDARY LEAKAGE shall be leakage (except primary-to-secondary leakage) through a non-isolable fault in a Reactor Coolant System component body, pipe wall or vessel wall.

PROCESS CONTROL PROGRAM (PCP)

1.23 The PROCESS CONTROL PROGRAM (PCP) shall contain the current formulas, sampling, analyses, test, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

PURGE – PURGING

1.24 PURGE or PURGING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is required to purify the confinement.

See ITS Chapter 1.0

RATED THERMAL POWER

1.25 RATED THERMAL POWER shall be a total reactor core heat transfer rate to the reactor coolant of 3020 MWt.

REACTOR TRIP SYSTEM RESPONSE TIME

1.26 The REACTOR TRIP SYSTEM RESPONSE TIME shall be the time interval from when the monitored parameter exceeds its trip setpoint at the channel sensor until electrical power to the CEA drive mechanism is interrupted. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.

REPORTABLE EVENT

1.27 A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

~~SHIELD BUILDING INTEGRITY~~ See ITS Chapter 1.0

1.28 SHIELD BUILDING INTEGRITY shall exist when: See ITS 3.6.7

SR 3.6.7.1 a. Each door is closed except when the access opening is being used for normal transit entry and exit;

b. The shield building ventilation system is in compliance with Specification 3.6.6.1, and See ITS 3.6.9

~~c. The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.~~ LA02

DISCUSSION OF CHANGES
ITS 3.6.7, SHIELD BUILDING

ADMINISTRATIVE CHANGES

A01 In the conversion of the St. Lucie Plant (PSL) Unit 1 and 2 Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1432, Rev. 5.0, "Standard Technical Specifications – Combustion Engineering Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 CTS 3.6.6.2 states "SHIELD BUILDING INTEGRITY shall be maintained." CTS 3.6.6.3 requires the structural integrity of the shield building to be maintained as determined by a visual inspection in accordance with the Containment Leakage Rate Testing Program.

ITS 3.6.7 is the shield building specification. ITS LCO 3.6.7 requires the shield building to be OPERABLE. ITS 3.6.7 ACTION A requires when the shield building is inoperable to restore the shield building to OPERABLE status with 24 hours. ITS SR 3.6.7.2 requires performance of a visual inspection of the interior and exterior surfaces of the shield building. This changes the CTS by replacing the specific SHIELD BUILDING INTEGRITY definition and all references to it with the requirement for Shield Building OPERABILITY. Additionally, it changes the CTS by combining CTS 3.6.6.2 and CTS 3.6.6.3 into one specification.

The purpose of CTS 3.6.6.2 and CTS 3.6.6.3 is to provide requirements pertaining to shield building OPERABILITY. This portion of the change (combining CTS 3.6.6.2 and CTS 3.6.6.3) is acceptable because moving these requirements into one LCO, ITS 3.6.7 centralizes the requirements. The CTS 3.6.6.2 references to SHIELD BUILDING INTEGRITY have been deleted because the CTS definition of SHIELD BUILDING INTEGRITY in CTS 1.28 is incorporated into ITS 3.6.7 and ITS 3.6.9 and is no longer maintained as a separate definition in the ITS. ITS 3.6.7 requires that the shield building shall be OPERABLE. The definition of OPERABLE and the subsequent ITS 3.6.7 LCO, ACTIONS, and Surveillance Requirements are sufficient to encompass the applicable requirements of the CTS definition. This change removes any confusion that may exist between the definition and the specific requirements of the LCO and is a presentation preference consistent with NUREG-1432, Rev. 5.0. Because the aspects of SHIELD BUILDING INTEGRITY definition requirements are maintained within the Specifications of ITS, this change is considered acceptable.

This change is designated as administrative, because it does not result in technical changes to the CTS.

A03 Unit 1 CTS 3.6.6.3 does not provide an ACTION to take if the shield building is inoperable while in MODE 1, 2, 3, or 4; it only includes a requirement that the shield building be restored to OPERABLE status prior to increasing Reactor Coolant System temperature above 200°F (i.e., MODE 4). Although not explicitly stated, if these requirements are not met the shield building integrity requirements are not met and the CTS 3.6.2.2 actions would apply. When the shield building is inoperable and not restored to an OPERABLE status within the specified Completion Time ITS 3.6.7 ACTION B requires the unit be in MODE 3 within 6 hours and MODE 4 within 12 hours. This changes the CTS by stating the ACTIONS within the Specification rather than deferring to CTS 3.6.2.2 and deletes the Action to restore the LCO prior to entering MODE 4. In addition, it combines CTS 3.6.6.2 and CTS 3.6.6.3 into one specification.

This change is acceptable because the ACTIONS specified in ITS 3.6.7 adopt ISTS structure for placing the unit outside the MODE of Applicability without changing the time specified to enter MODE 3 and MODE 4. In addition, deletion of the current Action of CTS 3.6.6.3 is acceptable because CTS 3.0.4 (ITS LCO 3.0.4) already precludes entering the MODE of Applicability when the LCO is not met. Therefore, it is not necessary to include these requirements as specific actions in ITS 3.6.7. This change is designated as administrative, because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 4 – Removal of LCO, SR, or other TS Requirements to the TRM, UFSAR, ODCM, NQAP, CLRT Program, IST Program, or ISI Program)* CTS 4.6.6.3 requires the structural integrity of the shield building to be determined by a visual inspection of the accessible shield building interior and exterior surfaces and verifying no apparent changes in concrete surface appearance or other abnormal degradation. ITS SR 3.6.7.2 includes the shield building structural integrity visual inspection verification of exposed interior and exterior surfaces, but does not include the details of what the inspection entails. This changes the CTS by moving the details of the shield building inspection to the TS Bases.

The removal of these details, which are related to methods of surveillance test performance, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS retains the requirements for verifying integrity of the shield building. Also, this changes is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specifications Bases Control Program in Chapter 5. This program provides for the evaluation of changes to the Bases to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to methods of surveillance test performance is being removed from the Technical Specifications.

LA02 *(Type 2 – Removing Descriptions of System Operation)* CTS 1.28 states, in part, "SHIELD BUILDING INTEGRITY shall exist when: c. The sealing mechanism associated with each penetration (e.g., welds, bellows, or 0-rings) is OPERABLE. ITS 3.6.7 states "The shield building shall be OPERABLE." This changes the CTS by moving the reference to penetration sealing mechanism requirements to the Bases.

The removal of these details, which are related to system operation, from the Technical Specifications is acceptable, because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS retains the requirement for the shield building to be OPERABLE and the relocated material describes aspects of OPERABILITY. In addition, the ITS retains the requirement to perform a shield building annulus drawdown test, which would provide verification that the penetration sealing mechanisms are OPERABLE. Also, this change is acceptable, because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system operation is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 **Unit 2 Only** *(Category 4 – Relaxation of Required Action)* Unit 2 CTS 3.6.6.3, ACTION, states, "With the structural integrity of the shield building not conforming to the above requirements, restore the structural integrity to within the limits within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ITS 3.6.7 ACTION A requires that if the shield building is inoperable, it must be restored to OPERABLE status within 24 hours. ITS 3.6.7 is the shield building specification. ITS 3.6.7 combines CTS 3.6.6.2 and CTS 3.6.6.3 to address shield building OPERABILITY (see DOC A02). The end state of ITS 3.6.7 is MODE 4. ITS 3.6.7 ACTION B requires that if the Required Action and associated Completion Time are not met (i.e., the shield building is not restored to OPERABLE status in 24 hours), the unit must be in MODE 3 within 6 hours and MODE 4 within 12 hours. In addition, ITS ACTION B includes a NOTE modifying Required Action B.2 that states, “LCO 3.0.4.a is not applicable when entering MODE 4.” This changes CTS by modifying the end state of CTS 3.6.6.3.

This change is acceptable because the modification of the end state from MODE 5 to MODE 4, with respect to shield building OPERABILITY, is consistent with CE NPSD-1186-A, Revision 00, “Technical Justification for the Risk-Informed Modification to Selected Required Action End States for CEOG Member PWRs,” dated October 2001 (ADAMS Accession No. 110410539) and Technical Specifications Task Force (TSTF) traveler TSTF- 422, Revision 2, “Change in Technical Specifications End States, (CE NPSD-1186),“ dated December 22, 2009 (ADAMS Accession No. ML103270197) allowances.

This change is designated as less restrictive because instead of requiring the plant to achieve COLD SHUTDOWN (MODE 5) the ITS end state is HOT SHUTDOWN (MODE 4) with LCO 3.0.4.a allowances applicable.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.6 CONTAINMENT SYSTEMS

3.6.~~11~~ 7 Shield Building ~~(Dual)~~ 1

3.6.6.2 LCO 3.6.~~11~~ 7 Shield building shall be OPERABLE.

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
ACTION	A. Shield building inoperable.	A.1 Restore shield building to OPERABLE status.	24 hours
ACTION	B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. <u>AND</u> B.2 --------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------- Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
~~SR 3.6.11.1 Verify annulus negative pressure is > [5] inches water gauge.~~	~~[12 hours~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

3

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
1.28.a	SR 3.6.~~11.2~~ 7.1	Verify ~~one~~ the shield building access door in each access opening is closed, except when the access door is open for normal transit entry and exit.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	1 4 5
4.6.6.3	SR 3.6.~~11.3~~ 7.2	Verify shield building structural integrity by performing a visual inspection of the accessible exposed interior and exterior surfaces of the shield building.	During shutdown for SR 3.6.1.1 Type A tests	1 2
4.6.6.1.c.4	SR 3. 6.~~11.4~~ 7.3	Verify the shield building can be maintained at a pressure equal to or more negative than ~~[-0.25]~~ -2.0 inches water gauge in the annulus by one Shield Building ~~Exhaust Air Cleanup~~ Ventilation System train with a ~~final~~ flow rate ~~≤ [ ]~~ ≥ 5400 and ≤ 6600 cfm within ~~[1]~~ 2 minutes after a start signal.	~~[[18] months on a STAGGERED TEST BASIS for each Shield Building Exhaust Air Cleanup System~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	1 2 5

3.6 CONTAINMENT SYSTEMS

3.6.~~11~~ Shield Building ~~(Dual)~~

7 1

3.6.6.2 LCO 3.6.~~11~~ Shield building shall be OPERABLE.

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
ACTION	A. Shield building inoperable.	A.1 Restore shield building to OPERABLE status.	24 hours
ACTION	B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 --------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------- Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
~~SR 3.6.11.1 Verify annulus negative pressure is > [5] inches water gauge.~~	~~[12 hours~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

3

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY	
1.28.a	SR 3.6.~~11.2~~ 7.1 Verify ~~one~~ the shield building access door in each access opening is closed, except when the access door is open for normal transit entry and exit	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	1 4 5
4.6.6.3	SR 3.6.~~11.3~~ 7.2 Verify shield building structural integrity by performing a visual inspection of the accessible exposed interior and exterior surfaces of the shield building.	During shutdown for SR 3.6.1.1 Type A tests	1 2
4.6.6.1.d.3	SR 3. 6.~~11.4~~ 7.3 Verify the shield building can be maintained at a -2.0 pressure equal to or more negative than ~~[-0.25]~~ inches water gauge in the annulus by one Shield Building Ventilation ~~Exhaust Air Cleanup~~ System train with a ~~final~~ flow rate ~~≤ [ ]~~ ≥ 5400 and ≤ 6600 cfm within ~~[1] minute~~ 99 seconds after a start signal.	~~[[18] months on a STAGGERED TEST BASIS for each Shield Building Exhaust Air Cleanup System~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	1 2 5

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.7, SHIELD BUILDING

1. The heading and title for ISTS 3.6.11 include the parenthetical expression (Dual). This identifying information is not included in the St. Lucie Plant (PSL) ITS. This information is provided in the NUREG to assist in identifying the appropriate Specifications to be used as a model for a plant-specific ITS conversion but serves no purpose in a plant-specific implementation. Therefore, necessary editorial changes were made. In addition, PSL design does not include the Hydrogen Mixing System (ISTS 3.6.9) and the Iodine Cleanup System (ISTS 3.6.10); the PSL Unit 2 design does not include the Spray Additive System (ISTS 3.6.7). Therefore, ISTS 3.6.9 and ISTS 3.6.10 are not included in the PSL ITS. The Spray Additive System (ISTS 3.6.7) is renumbered as ITS 3.6.10, the Shield Building Exhaust Air Cleanup System (ISTS 3.6.8) is renumbered as ITS 3.6.9 and the Shield Building (ISTS 3.6.11) is renumbered as ITS 3.6.7.

2. Changes are made (additions, deletions, and/or changes) to the ITS which reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. ISTS SR 3.6.11.1 requires a verification of annulus negative pressure is > [5] inches water gauge every 12 hours or in accordance with the Surveillance Frequency Control Program. PSL does not require a routine verification of static shield building annulus pressure. However, the ITS continues to require periodic verification that the shield building can be maintained at a pressure equal to or more negative than -2.0 inches water gauge in the annulus by one Shield Building Ventilation System (SBVS) train within the required time after a start signal consistent with current technical specifications. The Frequency specified for the shield building drawdown test continues to be in accordance with the Surveillance Frequency Control Program (i.e., at least every 18 months). Operational experience has shown that the frequency of the shield building drawdown test is adequate to detect degradation of shield building integrity such that the proper vacuum cannot be met and maintained within the required time. The current surveillance testing associated with the shield building is considered adequate to assure, pursuant to the requirements of 10 CFR 50.36(c)(3), that the necessary quality of the shield building is maintained, that facility operation will be within safety limits, and that the shield building limiting condition for operation will be met. As a result, ISTS SR 3.6.11.1 is not included in the ITS consistent with the PSL current licensing basis.

4. ISTS SR 3.6.11.2 requires verification that "one" access door in each shield building access opening is closed. However, PSL design consists of one door for each shield building access opening. Therefore, the Surveillance is changed to verify "the" shield building access door in each access opening closed, thereby reflecting the plant-specific design. There is no allowance in ISTS 3.6.11 for when a shield building access door is open for normal transit entry and exit. Therefore, an exception to the requirement that the access opening doors be closed is made to allow for normal transit entry and exit. Shield building entry may be required to perform Technical Specification (TS) Surveillances, as well as other activities on equipment inside the shield building that are required by TS or activities on equipment that support TS-required equipment. Normal transient entry and exit is not intended to preclude performing other activities (i.e., non TS-required activities) if the shield building is entered to perform an allowed activity. The basis of this exception is the assumption that the number of entries into the shield building is small while the unit is operating in MODES 1, 2, 3, and 4 and that the transit time during which a door is open will be

short. This allowance is acceptable due to the low probability of an event that could pressurize the shield building during the short time that the access door is expected to be open in MODES 1, 2, 3, and 4. This change from the ISTS is consistent with the current licensing basis as defined in CTS 1.28, definition of SHIELD BUILDING INTEGRITY, which provides this exception to the requirement for the door in each access opening to be closed.

5. The ISTS contains bracketed information and/or values that are generic to Combustion Engineering vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.6 CONTAINMENT SYSTEMS

B 3.6.~~11~~ Shield Building ~~(Dual)~~

BASES

BACKGROUND	The shield building is a concrete structure that surrounds the steel containment vessel. Between the containment vessel and the shield building inner wall is an annular space that collects any containment leakage that may occur following a loss of coolant accident (LOCA). This space also allows for periodic inspection of the outer surface of the steel containment vessel. Ventilation Following a LOCA, the Shield Building ~~Exhaust Air Cleanup~~ System (SB~~EAC~~S) establishes a negative pressure in the annulus between the shield building and the steel containment vessel. Filters in the system then control the release of radioactive contaminants to the environment. A description of the SB~~EAC~~S is provided in the Bases for Specification 3.6.~~8~~, "Shield Building ~~Exhaust Air Cleanup~~ System (SB~~EAC~~S)." Shield building OPERABILITY is required to ensure retention of primary containment leakage and proper operation of the SB~~EAC~~S. Insert 1
APPLICABLE SAFETY ANALYSES	The design basis for shield building OPERABILITY is a large break LOCA. Maintaining shield building OPERABILITY ensures that the release of radioactive material from the primary containment atmosphere is restricted to those leakage paths and associated leakage rates assumed in the accident analysis. The shield building satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).
LCO	Shield building OPERABILITY must be maintained to ensure proper operation of the SB~~EAC~~S and to limit radioactive leakage from the containment to those paths and leakage rates assumed in the accident analysis.
APPLICABILITY	Maintaining shield building OPERABILITY prevents leakage of radioactive material from the shield building. Radioactive material may enter the shield building from the primary containment following a LOCA. Therefore, shield building OPERABILITY is required in MODES 1, 2, 3, and 4 when a main steam line break, LOCA, or control element assembly ejection accident could release radioactive material to the primary containment atmosphere. In MODES 5 and 6, the probability and consequences of these events are low due to the Reactor Coolant System temperature and pressure limitations in these MODES. Therefore, shield building OPERABILITY is not required in MODE 5 or 6.

2 **INSERT 1**

The isolation devices for the penetrations in the shield building boundary are a part of the shield building leak tight barrier. To maintain the shield building boundary leak tight, the sealing mechanism associated with each penetration (e.g., welds, bellows, or O-rings) are required to be OPERABLE.

BASES

ACTIONS

A.1

In the event shield building OPERABILITY is not maintained, shield building OPERABILITY must be restored within 24 hours.

Twenty-four hours is a reasonable Completion Time considering the limited leakage design of the containment and the low probability of a DBA occurring during this time period.

B.1 and B.2

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Adoption of a MODE 4 end state requires the licensee to make the following commitments:~~

~~1. [LICENSEE] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision [4F].~~

~~2. [LICENSEE] will follow the guidance established in Revision 2 of WCAP-16364-NP, "Implementation Guidance for Risk Informed Modification to Selected Required Action End States at Combustion Engineering NSSS Plants (TSTF-422)," Westinghouse, May 2010.~~
~~--~~

4

If the shield building cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.

Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 1). In MODE 4 there are more accident mitigation systems available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state.

Required Action B.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and

BASES

ACTIONS (continued)

establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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.

SURVEILLANCE REQUIREMENTS

~~SR 3.6.11.1~~

~~Verifying that shield building annulus pressure is within limit ensures that operation remains within the limit assumed in the containment analysis. [The 12 hour Frequency of this SR was developed considering operating experience related to shield building annulus pressure variations and pressure instrument drift during the applicable MODES.~~
~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-----------------------------REVIEWER'S NOTE-----------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~ 3

SR 3.6.~~11.2~~ 1 3
7.1

the 3
Each
Maintaining shield building OPERABILITY requires verifying ~~one~~ door in the access opening closed. ~~[An~~ access opening ~~may~~ contain one ~~inner and one outer~~ door~~, or in some cases, shield building access openings are shared such that a shield building barrier may have multiple inner or multiple outer doors. The intent is to not breach the shield building boundary at any time when the shield building boundary is required. This is achieved by maintaining the inner or outer portion of the barrier closed at all times.]~~ ~~However,~~ all shield building access doors are normally kept closed, except when the access opening is being used for entry and exit ~~or when maintenance is being performed on an access opening~~. ~~[The Frequency of 31 days is based on engineering judgment and is considered adequate in view of other indications of door status available to the operator.~~ s 4
and
normal
6
4
Insert 2
for conveyance through the access opening.

~~OR~~

3 **INSERT 2**

Shield building entry may be required to perform Technical Specification (TS) Surveillances, as well as other activities on equipment inside the shield building that are required by TS or activities on equipment that support TS-required equipment. Normal transient entry and exit is not intended to preclude performing other activities (i.e., non-TS-required activities) if the shield building is entered to perform an allowed activity. This allowance is acceptable due to the low probability of an event that could pressurize the shield building during the short time that the access door is expected to be open.

BASES

SURVEILLANCE REQUIREMENTS (continued)

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~ 5
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~ 4

SR 3.6.~~11.3~~ 7.2 1 3

A visual inspection of the exposed accessible shield building interior and exterior surfaces and verification that no apparent changes in the appearance of concrete surfaces or other abnormal degradation will 7 ~~This Surveillance would~~ give advance indication of gross deterioration of the concrete structural integrity of the shield building. The Frequency of this SR is the same as that of SR 3.6.1.1. The verification is done during shutdown and as part of Type A leakage tests associated with SR 3.6.1.1.

SR 3.6.~~11.4~~ 7.3 1 3

The SB~~EAC~~VS produces a negative pressure to prevent leakage from the building. SR 3.6.~~11~~7.4 verifies that the shield building can be rapidly drawn down to ~~≥ [0.25]~~ equal to or more negative than -2.0 inches water. This test is used to ensure shield building boundary integrity. Establishment of this pressure is confirmed by SR 3.6.~~11~~7.4, which demonstrates that the shield building can be drawn down to ~~≥ [0.25]~~ equal to or more negative than -2.0 inches of water ~~≤ 1~~ in ≤ 2 minutes using one SB~~EAC~~VS train. The time limit ensures that no significant quantity of radioactive material leaks from the shield building prior to developing the negative pressure. Since this SR is a shield building boundary integrity test, it does not need to be performed with each SB~~EAC~~VS train. ~~[The SBEACS train used for this Surveillance is staggered to ensure that in addition to the requirements of LCO 3.6.11.4, either train will perform this test.]~~ The primary purpose of this SR is to ensure shield building integrity. The secondary purpose of this SR is to ensure that the SB~~EAC~~VS being tested functions as designed. The inoperability of the SB~~EAC~~VS train does not necessarily constitute a failure of this Surveillance relative to the shield building OPERABILITY. ~~[The 18 month Frequency is consistent with Regulatory Guide 1.52 (Ref. 2) guidance for functional testing of the ability of the SBEACS.~~ 2 1 4 2 4

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~

REFERENCES

1. CE NPSD-1186-A, Technical Justification for the Risk Informed Modification to Selected Required Action End States for CEOG PWRs, October, 2001.

~~2. Regulatory Guide 1.52, Revision [2].~~

B 3.6 CONTAINMENT SYSTEMS

7

B 3.6.~~11~~ Shield Building ~~(Dual)~~ 1

BASES

BACKGROUND

The shield building is a concrete structure that surrounds the steel containment vessel. Between the containment vessel and the shield building inner wall is an annular space that collects any containment leakage that may occur following a loss of coolant accident (LOCA). This space also allows for periodic inspection of the outer surface of the steel containment vessel.

Ventilation

Following a LOCA, the Shield Building ~~Exhaust Air Cleanup~~ System (SB~~EAC~~S) establishes a negative pressure in the annulus between the shield building and the steel containment vessel. Filters in the system then control the release of radioactive contaminants to the environment. A description of the SB~~EAC~~S is provided in the Bases for Specification 3.6.~~8~~, "Shield Building ~~Exhaust Air Cleanup~~ System (SB~~EAC~~S)." Shield building OPERABILITY is required to ensure retention of primary containment leakage and proper operation of the SB~~EAC~~S. 2

V 9 Ventilation V Insert 1

APPLICABLE SAFETY ANALYSES

The design basis for shield building OPERABILITY is a large break LOCA. Maintaining shield building OPERABILITY ensures that the release of radioactive material from the primary containment atmosphere is restricted to those leakage paths and associated leakage rates assumed in the accident analysis.

The shield building satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Shield building OPERABILITY must be maintained to ensure proper operation of the SB~~EAC~~S and to limit radioactive leakage from the containment to those paths and leakage rates assumed in the accident analysis. 2

V

APPLICABILITY

Maintaining shield building OPERABILITY prevents leakage of radioactive material from the shield building. Radioactive material may enter the shield building from the primary containment following a LOCA. Therefore, shield building OPERABILITY is required in MODES 1, 2, 3, and 4 when a main steam line break, LOCA, or control element assembly ejection accident could release radioactive material to the primary containment atmosphere.

In MODES 5 and 6, the probability and consequences of these events are low due to the Reactor Coolant System temperature and pressure limitations in these MODES. Therefore, shield building OPERABILITY is not required in MODE 5 or 6.

2

INSERT 1

The isolation devices for the penetrations in the shield building boundary are a part of the shield building leak tight barrier. To maintain the shield building boundary leak tight, the sealing mechanism associated with each penetration (e.g., welds, bellows, or O-rings) are required to be OPERABLE.

BASES

ACTIONS

A.1

In the event shield building OPERABILITY is not maintained, shield building OPERABILITY must be restored within 24 hours.

Twenty-four hours is a reasonable Completion Time considering the limited leakage design of the containment and the low probability of a DBA occurring during this time period.

B.1 and B.2

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Adoption of a MODE 4 end state requires the licensee to make the following commitments:~~

~~1. [LICENSEE] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision [4F].~~

~~2. [LICENSEE] will follow the guidance established in Revision 2 of WCAP-16364-NP, "Implementation Guidance for Risk Informed Modification to Selected Required Action End States at Combustion Engineering NSSS Plants (TSTF-422)," Westinghouse, May 2010.~~
~~---~~

4

If the shield building cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.

Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 1). In MODE 4 there are more accident mitigation systems available and there is more redundancy and diversity in core heat removal mechanisms than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state.

Required Action B.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and

BASES

ACTIONS (continued)

establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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.

SURVEILLANCE REQUIREMENTS

~~SR 3.6.11.1~~

~~Verifying that shield building annulus pressure is within limit ensures that operation remains within the limit assumed in the containment analysis. [The 12 hour Frequency of this SR was developed considering operating experience related to shield building annulus pressure variations and pressure instrument drift during the applicable MODES.~~
~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~----------]~~

SR 3.6.~~11.2~~ 7.1

Maintaining shield building OPERABILITY requires verifying ~~one~~ the door in the access opening closed. ~~[An~~ Each access opening ~~may~~ contains one ~~inner and one outer~~ door~~, or in some cases, shield building access openings are shared such that a shield building barrier may have multiple inner or multiple outer doors. The intent is to not breach the shield building boundary at any time when the shield building boundary is required. This is achieved by maintaining the inner or outer portion of the barrier closed at all times.]~~ ~~However,~~ and all shield building access doors are normally kept closed, except when the access opening is being used for normal entry and exit for conveyance through the access opening. ~~or when maintenance is being performed on an access opening~~. ~~[The Frequency of 31 days is based on engineering judgment and is considered adequate in view of other indications of door status available to the operator.~~ Insert 2

~~OR~~

3 **INSERT 2**

Shield building entry may be required to perform Technical Specification (TS) Surveillances, as well as other activities on equipment inside the shield building that are required by TS or activities on equipment that support TS-required equipment. Normal transient entry and exit is not intended to preclude performing other activities (i.e., non-TS-required activities) if the shield building is entered to perform an allowed activity. This allowance is acceptable due to the low probability of an event that could pressurize the shield building during the short time that the access door is expected to be open.

BASES

SURVEILLANCE REQUIREMENTS (continued)

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~

SR 3.6.~~11.3~~ 7.2

A visual inspection of the exposed accessible shield building interior and exterior surfaces and verification that no apparent changes in the appearance of concrete surfaces or other abnormal degradation will ~~This Surveillance would~~ give advance indication of gross deterioration of the concrete structural integrity of the shield building. The Frequency of this SR is the same as that of SR 3.6.1.1. The verification is done during shutdown and as part of Type A leakage tests associated with SR 3.6.1.1.

SR 3.6.~~11.4~~ 7.3

The SB~~EAC~~S V produces a negative pressure to prevent leakage from the building. SR 3.6.~~11~~ 7.4 verifies that the shield building can be rapidly drawn down to ~~≥ [0.25]~~ equal to or more negative than -2.0 inch es water. This test is used to ensure shield building boundary integrity. Establishment of this pressure is confirmed by SR 3.6.~~11~~ 7.4, which demonstrates that the shield building can be drawn down to ~~≥ [0.25]~~ equal to or more negative than -2.0 inches of water ~~≤ 1~~ in ≤ 2 minute s using one SB~~EAC~~S V train. The time limit ensures that no significant quantity of radioactive material leaks from the shield building prior to developing the negative pressure. Since this SR is a shield building boundary integrity test, it does not need to be performed with each SB~~EAC~~S V train. ~~[The SBEACS train used for this Surveillance is staggered to ensure that in addition to the requirements of LCO 3.6.11.4, either train will perform this test.]~~ The primary purpose of this SR is to ensure shield building integrity. The secondary purpose of this SR is to ensure that the SB~~EAC~~S V being tested functions as designed. The inoperability of the SB~~EAC~~S V train does not necessarily constitute a failure of this Surveillance relative to the shield building OPERABILITY. ~~[The 18 month Frequency is consistent with Regulatory Guide 1.52 (Ref. 2) guidance for functional testing of the ability of the SBEACS.~~

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 5
~~---]~~ 4

REFERENCES

1. CE NPSD-1186-A, Technical Justification for the Risk Informed Modification to Selected Required Action End States for CEOG PWRs, October, 2001.

~~2. Regulatory Guide 1.52, Revision [2].~~ 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.7 BASES, SHIELD BUILDING

1. The heading and title for ISTS 3.6.11 include the parenthetical expression (Dual). This identifying information is not included in the St. Lucie Plant (PSL) ITS. This information is provided in the NUREG to assist in identifying the appropriate Specifications to be used as a model for a plant-specific ITS conversion, but serves no purpose in a plant-specific implementation. Therefore, necessary editorial changes were made. In addition, PSL design does not include the Hydrogen Mixing System (ISTS 3.6.9) and the Iodine Cleanup System (ISTS 3.6.10); the PSL Unit 2 design does not include the Spray Additive System (ISTS 3.6.7). Therefore, ISTS 3.6.9 and ISTS 3.6.10 are not included in the PSL ITS. The Spray Additive System (ISTS 3.6.7) is renumbered as ITS 3.6.10, the Shield Building Exhaust Air Cleanup System (ISTS 3.6.8) is renumbered as ITS 3.6.9 and the Shield Building (ISTS 3.6.11) is renumbered as ITS 3.6.7.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. Changes have been made to be consistent with changes made to the Specification.

4. The ISTS contains bracketed information and/or values that are generic to all Combustion Engineering vintage plants. The brackets are removed, and the proper plant specific information/value is changed to reflect the current licensing basis.

5. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.

6. There are no allowances in the LCO for a shield building access opening door to be open when maintenance is being performed on an access opening.

7. Changes are made to include details moved from the Current Technical Specifications to the Bases.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.7, SHIELD BUILDING

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 8

ITS 3.6.8, Vacuum Relief Valves

Current Technical Specifications (CTS) Markup and Discussion of Changes (DOCs)

CONTAINMENT SYSTEMS

3/4.6.5 VACUUM RELIEF VALVES

LIMITING CONDITION FOR OPERATION

LCO 3.6.8 3.6.5.1 Two vacuum relief lines shall be OPERABLE.

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

ACTION:

ACTION A With one vacuum relief line inoperable, restore the vacuum relief line to OPERABLE status within 72 hours or be in at least HOT STANDBY within the

ACTION B next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

SR 3.6.8.1 4.6.5.1 Verify each vacuum relief line OPERABLE in accordance with the INSERVICE TESTING PROGRAM.

CONTAINMENT SYSTEMS

3/4.6.5 VACUUM RELIEF VALVES

LIMITING CONDITION FOR OPERATION

LCO 3.6.8 3.6.5 Two vacuum relief lines shall be OPERABLE.

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

ACTION:

ACTION A With one vacuum relief line inoperable, restore the vacuum relief line to OPERABLE status within 72 hours or be in at least HOT STANDBY within the
ACTION B next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

SR 3.6.8.1 4.6.5 Verify each vacuum relief line OPERABLE in accordance with the INSERVICE TESTING PROGRAM.

DISCUSSION OF CHANGES
ITS 3.6.8, VACUUM RELIEF VALVES

ADMINISTRATIVE CHANGES

A01 In the conversion of the St. Lucie Plant (PSL) Unit 1 and 2 Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1432, Rev. 5.0, "Standard Technical Specifications – Combustion Engineering Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.6 CONTAINMENT SYSTEMS

3.6.~~12~~ Vacuum Relief Valves ~~(Dual)~~

8 1

3.6.5.1 LCO 3.6.~~12~~ Two vacuum relief lines shall be OPERABLE.

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
ACTION	A. One vacuum relief line inoperable.	A.1 Restore vacuum relief line to OPERABLE status.	72 hours
ACTION	B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY	
4.6.5.1	SR 3.6.~~12~~.1 (8) Verify each vacuum relief line OPERABLE in accordance with the INSERVICE TESTING PROGRAM.	In accordance with the INSERVICE TESTING PROGRAM	1

CTS

3.6 CONTAINMENT SYSTEMS

3.6.~~1~~2 Vacuum Relief Valves ~~(Dual)~~

8

3.6.5.1 LCO 3.6.~~1~~2 Two vacuum relief lines shall be OPERABLE.

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
ACTION	A. One vacuum relief line inoperable.	A.1 Restore vacuum relief line to OPERABLE status.	72 hours
ACTION	B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
4.6.5	SR 3.6.~~1~~2.1	Verify each vacuum relief line OPERABLE in accordance with the INSERVICE TESTING PROGRAM.	In accordance with the INSERVICE TESTING PROGRAM

8

1 1 1

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.8, VACUUM RELIEF VALVES

1. The parenthetical expression (Dual) in ISTS 3.6.12 is deleted since it is unnecessary. This identifying information is not included in the St. Lucie Plant (PSL) Unit 1 and 2 ITS. This information is provided in NUREG-1432, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation. In addition, the PSL design does not include the Hydrogen Mixing System (ISTS 3.6.9) and the Iodine Cleanup System (ISTS 3.6.10); the PSL Unit 2 design does not include the Spray Additive System (ISTS 3.6.7). Therefore, ISTS 3.6.9 and ISTS 3.6.10 are not included in the PSL ITS. The Spray Additive System (ISTS 3.6.7) is renumbered as ITS 3.6.10, the Shield Building Exhaust Air Cleanup System (ISTS 3.6.8) is renumbered as ITS 3.6.9, the Shield Building (ISTS 3.6.11) is renumbered as ITS 3.6.7 and ISTS 3.6.12 is renumbered as ITS 3.6.8.

2. Changes are made (additions, deletions, and/or changes) to the ITS that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

 1

B 3.6 CONTAINMENT SYSTEMS

B 3.6.~~12~~ 8 Vacuum Relief Valves ~~(Dual)~~ 1

BASES

BACKGROUND

The vacuum relief valves protect the containment vessel against negative pressure (i.e., a lower pressure inside than outside). Excessive negative pressure inside containment can occur if there is an inadvertent actuation of ~~the Containment Cooling System or~~ the Containment Spray System. Multiple equipment failures or human errors are necessary to have inadvertent actuation. 2

The containment pressure vessel contains two 100% vacuum relief lines installed in parallel that protect the containment from excessive external loading. The vacuum relief lines are 24 inch penetrations that connect the shield building annulus to the containment. Each vacuum relief line is isolated by a pneumatically operated butterfly valve in series with a check valve located on the containment side of the penetration.

Each butterfly valve is actuated by a separate pressure controller that senses the differential pressure between the containment and the annulus. Each butterfly valve is provided with an air accumulator that allows the valve to open following a loss of instrument air.

The combined pressure drop at rated flow through either vacuum relief line will not exceed the containment pressure vessel design external pressure differential of ~~[0.65]~~ 1.04 psig with any prevailing atmospheric pressure. 3

APPLICABLE SAFETY ANALYSES

Design of the vacuum relief lines involves calculating the effect of an inadvertent containment spray actuation that can reduce the atmospheric temperature (and hence pressure) inside containment (Ref. 1). Conservative assumptions are used for all the pertinent parameters in the calculation. For example, the minimum spray water temperature is assumed, as well as maximum initial containment temperature, maximum spray flow, all trains of spray operating, etc. The resulting containment pressure versus time is calculated, including the effect of the vacuum relief valves opening when their negative pressure setpoint is reached. It is also assumed that one vacuum relief line fails to open.

The containment was ~~designed~~ re-rated for an external pressure load equivalent to ~~[0.65]~~ 1.04 psig. Insert 1 2 The inadvertent actuation of the Containment Spray System was analyzed to determine the resulting reduction in containment pressure. The initial pressure condition used in this analysis was ~~[-0.368] psig~~ 14.21 psia. This resulted in a ~~minimum pressure inside~~ maximum annulus to containment differential pressure of ~~[0.49] psig~~ 0.9996 psid, which is less than the design load. 3 2

---

2 **INSERT 1**

in accordance with paragraph NE-3133.3 of Section III of the ASME Boiler and Pressure Vessel Code (Ref. 2).

BASES

APPLICABLE SAFETY ANALYSES (continued)

The vacuum relief valves must also perform the containment isolation function in a containment high pressure event. For this reason, the system is designed to take the full containment positive design pressure and the containment design basis accident (DBA) environmental conditions (temperature, pressure, humidity, radiation, chemical attack, etc.) associated with the containment DBA.

The vacuum relief valves satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The LCO establishes the minimum equipment required to accomplish the vacuum relief function following the inadvertent actuation of the Containment Spray System. Two vacuum relief lines are required to be OPERABLE to ensure that at least one is available, assuming one or both valves in the other line fail to open.

APPLICABILITY

In MODES 1, 2, 3, and 4, the containment cooling features, such as the Containment Spray System, are required to be OPERABLE to mitigate the effects of a DBA. Excessive negative pressure inside containment could occur whenever these systems are required to be OPERABLE due to inadvertent actuation of these systems. Therefore, the vacuum relief lines are required to be OPERABLE in MODES 1, 2, 3, and 4 to mitigate the effects of inadvertent actuation of the Containment Spray System or Containment Cooling System.

In MODES 5 and 6, the probability and consequences of a DBA are reduced due to the pressure and temperature limitations of these MODES. The Containment Spray System and Containment Cooling System are not required to be OPERABLE in MODES 5 and 6. Therefore, maintaining OPERABLE vacuum relief lines is not required in MODE 5 or 6.

ACTIONS

A.1

With one of the required vacuum relief lines inoperable, the inoperable line must be restored to OPERABLE status within 72 hours. The specified time period is consistent with other LCOs for the loss of one train of a system required to mitigate the consequences of a LOCA or other DBA.

BASES

ACTIONS (continued)

B.1 and B.2

If the vacuum relief line cannot be restored to OPERABLE status within the required 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 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.

SURVEILLANCE REQUIREMENTS

SR 3.6.~~12~~ 8.1

This SR references the INSERVICE TESTING PROGRAM, which establishes the requirement that inservice testing of the ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with the ASME Boiler and Pressure Vessel Code and applicable Addenda (Ref. ~~2~~ 3). Therefore, SR Frequency is governed by the INSERVICE TESTING PROGRAM.

REFERENCES

1. U FSAR, Section ~~[~~6.2~~]~~.

2. ASME Boiler and Pressure Vessel Code, 1971 and applicable Addenda through Summer 1972, Section III, Division 1, Subsection NE.

~~2~~ 3. ASME Code for Operation and Maintenance of Nuclear Power Plants.

B 3.6 CONTAINMENT SYSTEMS

B 3.6.~~12~~ 8 Vacuum Relief Valves ~~(Dual)~~ 1

BASES

BACKGROUND

The vacuum relief valves protect the containment vessel against negative pressure (i.e., a lower pressure inside than outside). Excessive negative pressure inside containment can occur if there is an inadvertent actuation of ~~the Containment Cooling System or~~ the Containment Spray System. Multiple equipment failures or human errors are necessary to have inadvertent actuation. 2

The containment pressure vessel contains two 100% vacuum relief lines installed in parallel that protect the containment from excessive external loading. The vacuum relief lines are 24 inch penetrations that connect the shield building annulus to the containment. Each vacuum relief line is isolated by a pneumatically operated butterfly valve in series with a check valve located on the containment side of the penetration.

Each butterfly valve is actuated by a separate pressure controller that senses the differential pressure between the containment and the annulus. Each butterfly valve is provided with an air accumulator that allows the valve to open following a loss of instrument air.

The combined pressure drop at rated flow through either vacuum relief line will not exceed the containment pressure vessel design external pressure differential of ~~[0.65]~~ 1.05 psig with any prevailing atmospheric pressure. 3

APPLICABLE SAFETY ANALYSES

Design of the vacuum relief lines involves calculating the effect of an inadvertent containment spray actuation that can reduce the atmospheric temperature (and hence pressure) inside containment (Ref. 1). Conservative assumptions are used for all the pertinent parameters in the calculation. For example, the minimum spray water temperature is assumed, as well as maximum initial containment temperature, maximum spray flow, all trains of spray operating, etc. The resulting containment pressure versus time is calculated, including the effect of the vacuum relief valves opening when their negative pressure setpoint is reached. It is also assumed that one vacuum relief line fails to open.

The containment was ~~designed~~ re-rated for an external pressure load equivalent to ~~[0.65]~~ 1.05 psig. Insert 1 2 The inadvertent actuation of the Containment Spray System was analyzed to determine the resulting reduction in containment pressure. The initial pressure condition used in this analysis was ~~[-0.368] psig~~ 14.28 psia. This resulted in a ~~minimum pressure inside~~ maximum annulus to containment differential pressure of ~~[0.49] psig~~ 1.0 psid, which is less than the design load. 3 2

---

2 **INSERT 1**

in accordance with paragraph IWA-4331 of Section XI of the ASME Boiler and Pressure Vessel Code (Ref. 2).

BASES

APPLICABLE SAFETY ANALYSES (continued)

The vacuum relief valves must also perform the containment isolation function in a containment high pressure event. For this reason, the system is designed to take the full containment positive design pressure and the containment design basis accident (DBA) environmental conditions (temperature, pressure, humidity, radiation, chemical attack, etc.) associated with the containment DBA.

The vacuum relief valves satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The LCO establishes the minimum equipment required to accomplish the vacuum relief function following the inadvertent actuation of the Containment Spray System. Two vacuum relief lines are required to be OPERABLE to ensure that at least one is available, assuming one or both valves in the other line fail to open.

APPLICABILITY

In MODES 1, 2, 3, and 4, the containment cooling features, such as the Containment Spray System, are required to be OPERABLE to mitigate the effects of a DBA. Excessive negative pressure inside containment could occur whenever these systems are required to be OPERABLE due to inadvertent actuation of these systems. Therefore, the vacuum relief lines are required to be OPERABLE in MODES 1, 2, 3, and 4 to mitigate the effects of inadvertent actuation of the Containment Spray System or Containment Cooling System.

In MODES 5 and 6, the probability and consequences of a DBA are reduced due to the pressure and temperature limitations of these MODES. The Containment Spray System and Containment Cooling System are not required to be OPERABLE in MODES 5 and 6. Therefore, maintaining OPERABLE vacuum relief lines is not required in MODE 5 or 6.

ACTIONS

A.1

With one of the required vacuum relief lines inoperable, the inoperable line must be restored to OPERABLE status within 72 hours. The specified time period is consistent with other LCOs for the loss of one train of a system required to mitigate the consequences of a LOCA or other DBA.

BASES

ACTIONS (continued)

B.1 and B.2

If the vacuum relief line cannot be restored to OPERABLE status within the required 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 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.

SURVEILLANCE REQUIREMENTS

SR 3.6.~~12~~ 8.1

This SR references the INSERVICE TESTING PROGRAM, which establishes the requirement that inservice testing of the ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with the ASME Boiler and Pressure Vessel Code and applicable Addenda (Ref. ~~2~~). Therefore, SR Frequency is governed by the INSERVICE TESTING PROGRAM.

REFERENCES

U 1. FSAR, Section ~~[~~6.2~~]~~.

~~2~~ 3. ASME Code for Operation and Maintenance of Nuclear Power Plants.

2. ASME Boiler and Pressure Vessel Code, 2001 and applicable Addenda through 2003, Section XI.

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.8 BASES, VACUUM RELIEF VALVES

1. The parenthetical expression (Dual) in ISTS 3.6.12 is deleted since it is unnecessary. This identifying information is not included in the St. Lucie Plant (PSL) Unit 1 and 2 ITS. This information is provided in NUREG-1432, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation. In addition, the PSL design does not include the Hydrogen Mixing System (ISTS 3.6.9) and the Iodine Cleanup System (ISTS 3.6.10). The PSL Unit 2 design does not include the Spray Additive System (ISTS 3.6.7). Therefore, ISTS 3.6.9 and ISTS 3.6.10 are not included in the PSL ITS. The Spray Additive System (ISTS 3.6.7) is renumbered as ITS 3.6.10, the Shield Building Exhaust Air Cleanup System (ISTS 3.6.8) is renumbered as ITS 3.6.9, the Shield Building (ISTS 3.6.11) is renumbered as ITS 3.6.7 and ISTS 3.6.12 is renumbered as ITS 3.6.8.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS contains bracketed information and/or values that are generic to all Combustion Engineering vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.8, VACUUM RELIEF VALVES

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 9

ITS 3.6.9, SHIELD BUILDING VENTILATION SYSTEM

Current Technical Specifications (CTS) Markup and Discussion of Changes (DOCs)

CONTAINMENT SYSTEMS

3/4.6.6 SECONDARY CONTAINMENT

SHIELD BUILDING VENTILATION SYSTEM (SBVS)

LIMITING CONDITION FOR OPERATION

LCO 3.6.9 3.6.6.1 Two ~~independent shield building ventilation systems~~ SBVS trains shall be OPERABLE. LA01

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

ACTION:

ACTION A
ACTION C
a. With one shield building ventilation ~~system~~ train inoperable, restore the inoperable ~~system~~ train to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION B NOTE

NOTE
Action not applicable when second shield building ventilation ~~system~~ train intentionally made inoperable.

ACTION B
ACTION C
b. With two shield building ventilation ~~systems~~ trains inoperable, within 1 hour verify at least one train of containment spray is OPERABLE, and restore at least one shield building ventilation ~~system~~ train to OPERABLE status within 24 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.6.1 Each shield building ventilation ~~system~~ train shall be demonstrated OPERABLE:

SR 3.6.9.1 a. In accordance with the Surveillance Frequency Control Program by ~~initiating, from the control room, flow through the HEPA filter and charcoal adsorber train and~~ verifying that the train operates for at least 15 continuous minutes with the heaters on. LA02

SR 3.6.9.2 b. By performing required shield building ventilation system filter testing in accordance with the Ventilation Filter Testing Program.

c. In accordance with the Surveillance Frequency Control Program by:

1. Verifying that the air flow distribution is uniform within 20% across HEPA filters and charcoal adsorbers when tested in accordance with ASME N510-1989. See ITS 5.5.8

SR 3.6.9.3 2. Verify~~ing that the filtration system starts automatically on a Containment Isolation Signal (CIS)~~. Insert 1 L01 L03

~~3. Verifying that the filter cooling makeup air and cross connection valves can be manually opened.~~ L02

4. Verifying that each system produces a negative pressure of $\geq$ 2.0 inches W.G. in the annulus within 2 minutes after a Containment Isolation Signal (CIS). See ITS 3.6.7

INSERT 1 L01 L03

each SBVS train actuates on an actual or simulated containment isolation signal, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.

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DEFINITIONS

RATED THERMAL POWER

1.25 RATED THERMAL POWER shall be a total reactor core heat transfer rate to the reactor coolant of 3020 MWt.

REACTOR TRIP SYSTEM RESPONSE TIME

1.26 The REACTOR TRIP SYSTEM RESPONSE TIME shall be the time interval from when the monitored parameter exceeds its trip setpoint at the channel sensor until electrical power to the CEA drive mechanism is interrupted. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.

See ITS Chapter 1.0

REPORTABLE EVENT

1.27 A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

~~**SHIELD BUILDING INTEGRITY**~~

1.28 SHIELD BUILDING INTEGRITY shall exist when:

a. Each door is closed except when the access opening is being used for normal transit entry and exit;

See ITS 3.6.7

LCO 3.6.9 b. The shield building ventilation system is in compliance with Specification 3.6.6.1, and

c. The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.

See ITS 3.6.7

SHUTDOWN MARGIN

1.29 SHUTDOWN MARGIN shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming all full-length control element assemblies (shutdown and regulating) are fully inserted except for the single assembly of highest reactivity worth which is assumed to be fully withdrawn.

SITE BOUNDARY

1.30 SITE BOUNDARY means that line beyond which the land or property is not owned, leased, or otherwise controlled by the licensee.

See ITS Chapter 1.0

SOURCE CHECK

1.31 A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a radioactive source.

CONTAINMENT SYSTEMS

3/4.6.6 SECONDARY CONTAINMENT

SHIELD BUILDING VENTILATION SYSTEM (SBVS)

LIMITING CONDITION FOR OPERATION

LCO 3.6.9 3.6.6.1 Two ~~independent Shield Building Ventilation Systems~~ SBVS trains shall be OPERABLE. LA01

Applicability **APPLICABILITY:** ~~At all times in~~ MODES 1, 2, 3, and 4.
~~In addition,~~ during movement of recently irradiated fuel assemblies ~~or during crane operations with loads over recently irradiated fuel assemblies in the Spent Fuel Storage Pool in MODES 5 and 6~~. L04 A02

ACTION:

~~a. With the SBVS inoperable solely due to loss of the SBVS capability to provide design basis filtered air evacuation from the Spent Fuel Pool area, only ACTION c is required. If the SBVS is inoperable for any other reason, concurrently implement ACTION b and ACTION c.~~

ACTION A, ACTION D: b. (1) With one SBVS train inoperable in MODE 1, 2, 3, or 4, restore the inoperable ~~system~~ to OPERABLE status within 7 days; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. A02

ACTION B NOTE

NOTE
Action not applicable when second SBVS intentionally made inoperable.

ACTION B, ACTION C: (2) With both SBVSs inoperable, within 1 hour verify at least one train of containment spray is OPERABLE, and restore at least one SBVS to OPERABLE status within 24 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours. A02

ACTION A, ACTION D: c. (1) With one SBVS inoperable ~~in any MODE~~, restore the inoperable system to OPERABLE status within 7 days; otherwise, suspend movement of recently irradiated fuel assemblies within the Spent Fuel Storage Pool ~~and crane operations with loads over recently irradiated fuel in the Spent Fuel Storage Pool~~. L04

ACTION D: (2) With both SBVS inoperable ~~in any MODE~~ during movement of recently irradiated fuel assemblies, immediately suspend movement of recently irradiated fuel assemblies within the Spent Fuel Storage Pool ~~and crane operations with loads over recently irradiated fuel in the Spent Fuel Storage Pool~~. A02 L04

SURVEILLANCE REQUIREMENTS

4.6.6.1 Each Shield Building Ventilation ~~System~~ train shall be demonstrated OPERABLE:

SR 3.6.9.1 a. In accordance with the Surveillance Frequency Control Program by ~~initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and~~ verifying that the system operates for at least 15 continuous minutes with the heaters on. LA02

See ITS

b. In accordance with the Surveillance Frequency Control Program or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

1. Performing a visual examination of SBVS in accordance with ASME N510-1989.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (continued)

2. Performing airflow distribution to HEPA filters and charcoal adsorbers in accordance with ASME N510-1989. The distribution shall be ± 20% of the average flow per unit.

See ITS 5.5.8

SR 3.6.9.2

c. By performing required shield building ventilation system filter testing in accordance with the Ventilation Filter Testing Program.

d. In accordance with the Surveillance Frequency Control Program by:

Insert 1

SR 3.6.9.3

SR 3.6.9.4

1. Verify~~ing that the system starts on a Unit 2 containment isolation signal and on a fuel pool high radiation signal.~~

L01

L03

Insert 2

~~2. Verifying that the filter cooling makeup and cross connection valves can be manually opened.~~

L02

Insert 3

3. Verifying that each system produces a negative pressure of greater than or equal to 2.0 inches WG in the annulus within 99 seconds after a start signal.

See ITS 3.6.7

Insert 4

SR 3.6.9.5

4. Verifying that each system achieves a negative pressure of greater than 0.125 inch WG in the fuel storage building after actuation of a fuel storage building high radiation test signal.

INSERT 1

A02

SR 3.6.9.3 Note

---NOTE---------------------------------------
Only required to be met in MODE 1, 2, 3, and 4.

INSERT 2

L01 L03

SR 3.6.9.3

each SBVS train actuates on an actual or simulated containment isolation signal, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.

INSERT 3

L01 L03

SR 3.6.9.4 Note

---NOTE---
Only required to be met during movement of recently irradiated fuel assemblies.

SR 3.6.9.4

Verify each SBVS train actuates in the fuel pool area ventilation mode on an actual or simulated fuel pool area high radiation signal, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.

INSERT 4

A02

SR 3.6.9.5 Note

---NOTE---
Only required to be met during movement of recently irradiated fuel assemblies.

~~Page Deleted~~

DEFINITIONS

PRESSURE BOUNDARY LEAKAGE

1.22 PRESSURE BOUNDARY LEAKAGE shall be leakage (except primary-to-secondary leakage) through a non-isolable fault in a Reactor Coolant System component body, pipe wall or vessel wall.

PROCESS CONTROL PROGRAM (PCP)

1.23 The PROCESS CONTROL PROGRAM (PCP) shall contain the current formulas, sampling, analyses, test, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

PURGE – PURGING

1.24 PURGE or PURGING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is required to purify the confinement.

See ITS Chapter 1.0

RATED THERMAL POWER

1.25 RATED THERMAL POWER shall be a total reactor core heat transfer rate to the reactor coolant of 3020 MWt.

REACTOR TRIP SYSTEM RESPONSE TIME

1.26 The REACTOR TRIP SYSTEM RESPONSE TIME shall be the time interval from when the monitored parameter exceeds its trip setpoint at the channel sensor until electrical power to the CEA drive mechanism is interrupted. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.

REPORTABLE EVENT

1.27 A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

~~**SHIELD BUILDING INTEGRITY**~~

1.28 SHIELD BUILDING INTEGRITY shall exist when:

a. Each door is closed except when the access opening is being used for normal transit entry and exit;

See ITS 3.6.7

LCO 3.6.9

b. The shield building ventilation system is in compliance with Specification 3.6.6.1, and

c. The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.

See ITS 3.6.7

DISCUSSION OF CHANGES
ITS 3.6.9, SHIELD BUILDING VENTILATION SYSTEM (SBVS)

ADMINISTRATIVE CHANGES

A01 In the conversion of the Plant (PSL) Unit 1 and 2 Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1432, Rev. 5.0, "Standard Technical Specifications – Combustion Engineering Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 **Unit 2 only** - CTS 3.6.6.1 Applicability requires the SBVS to be OPERABLE at all times in MODES, 1, 2, 3, and 4 and in addition, during movement of recently irradiated fuel assemblies or during crane operations with loads over recently irradiated fuel assemblies in the Spent Fuel Storage Pool in MODES 5 and 6. CTS 3.6.6.1 Action a clarifies that, “With the SBVS inoperable solely due to loss of the SBVS capability to provide design basis filtered air evacuation from the Spent Fuel Pool area, only ACTION-c is required. If the SBVS is inoperable for any other reason, concurrently implement ACTION-b and ACTION-c. ITS 3.6.9 Applicability requires the SBVS to be OPERABLE in MODES, 1, 2, 3, and 4, and during movement of recently irradiated fuel assemblies and does not include the information provided in CTS 3.6.6.1 Action a. This changes the CTS by eliminating certain wording (e.g., “at all times” and in MODES 5 and 6) because the information is unnecessary to comply with the Technical Specification requirements.

CTS 4.6.6.1.d.1 requires verifying that the SBVS starts on a Unit 2 containment isolation signal and on a fuel pool high radiation signal. CTS 4.6.6.1.d.4 requires, in effect, verifying each SBVS system (i.e., train) achieves the proper negative pressure in the fuel storage building following a high radiation actuation signal. ITS SRs 3.6.9.3, 3.6.9.4, and 3.6.9.5 incorporate these surveillance requirements and adds Notes to clarify when these SRs are required to be met based on their SBVS function (i.e., either in MODES 1, 2, 3, and 4 for the shield building ventilation mode or during activities involving recently irradiated fuel assemblies for the fuel pool area ventilation mode). This changes the CTS by adding clarification notes to ensure the appropriate SRs are applied.

The formatting of the ITS Applicability is in accordance with TSTF-GG-05-01, Writer’s Guide for Plant-Specific Improved Technical Specifications, dated June 2009 (ISTS Writer’s Guide) and it is understood that ITS 3.6.9 applies at all times in MODES 1, 2, 3, and 4. Additionally, due to the radioactive decay of irradiated fuel assemblies following plant operation, movement of recently irradiated fuel assemblies would only be possible within the first 72 hours following subcriticality during a reactor shutdown. Therefore, stating “in MODES 5 and 6” is unnecessary. Also, the ITS 3.6.9 format specifically clarifies the Conditions to ensure that when the SBVS is inoperable solely due to loss of the SBVS capability to provide design basis filtered air evacuation from the spent fuel pool area, the appropriate ACTIONS are applied. Therefore, the CTS action clarification is not required in the ITS.

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.6.6.1 states that two "independent" shield building ventilation systems shall be OPERABLE. ITS 3.6.9 requires two shield building ventilation system trains to be OPERABLE but does not include the details of what constitutes OPERABILITY. This changes the CTS by moving the detail that the two systems must be "independent" to the Bases.

The removal of this detail, which is related to system design, from the Technical Specifications is acceptable, because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS retains the requirement that two shield building ventilation system trains shall be OPERABLE. This change is acceptable, because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to the Bases to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change, because information relating to system design is being removed from the Technical Specifications.

LA02 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.6.6.1.a requires each SBVS train to be operated for a specified time with the heaters on, and specifies that flow through the HEPA filters and charcoal adsorbers be initiated from the control room. ITS SR 3.6.9.1 includes the surveillance to operate each SBVS train for a specified time with the heaters operating but does not include the requirement that flow through the HEPA filters and charcoal adsorbers be initiated from the control room. This changes the CTS by moving the procedural requirement that flow through the HEPA filters and charcoal adsorbers be initiated from the control room to the TS Bases.

The removal of these details, that are related to methods of surveillance test performance, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirements for operating each SBVS train for a specified time with the heaters operating. In addition, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specifications Bases Control Program in Chapter 5. This program provides for the evaluation of changes to the Bases to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to methods of surveillance test performance is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* Unit 1 CTS 4.6.6.1.c.2 and Unit 2 CTS 4.6.6.1.d.1 requires verification that the filtration system starts automatically on a Containment Isolation Signal (CIS). Unit 2 CTS 4.6.6.1.d.1 also requires verification that the system starts on a fuel pool high radiation signal. ISTS SR 3.6.9.3 requires verification that each train actuates except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position. This changes the CTS by excluding those valves that are locked, sealed, or otherwise secured in the actuated position from verification.

The purpose of Unit 1 CTS 4.6.6.1.c.2 and Unit 2 CTS 4.6.6.1.d.1 is to provide assurance that if an event occurred requiring actuation of the shield building ventilation system, then those valves and dampers requiring automatic actuation would actuate to their correct position. Those automatic valves and dampers that are locked, sealed, or otherwise secured in position are not required to actuate on a containment isolation signal in order to perform their safety function because they are already in the required position. Testing such valves and dampers would not provide any additional assurance of OPERABILITY. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L02 *(Category 5 – Deletion of Surveillance Requirement)* Unit 1 CTS 4.6.6.1.c.3 and Unit 2 CTS 4.6.6.1.d.2 require verification that the filter cooling makeup air and cross-connection valves can be manually opened. This changes the CTS by deleting verification of the ability to manually open the filter cooling makeup air and cross-connection valves.

The purpose of Unit 1 CTS 4.6.6.1.c.3 and Unit 2 CTS 4.6.6.1.d.2 is to provide assurance that cooling air flow can be provided through the filters for the individual train or cross connected flow manually. This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a Frequency necessary to provide confidence that the equipment can perform its assumed safety function. Manual operation of these valve is not required to perform their safety function and testing of the valves does not provide any additional assurance of OPERABILITY. Valves that are required to actuate will continue to be tested. This change is designated as less restrictive because less stringent

Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L03 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* Unit 1 CTS 4.6.6.1.c.2 and Unit 2 CTS 4.6.6.1.d.1 require verification that the filtration system starts automatically on a “Containment Isolation Signal (CIS).” In addition, Unit 2 CTS 4.6.6.1.d.1 requires verification that each train also starts automatically on a “fuel pool high radiation signal.” ITS SR 3.6.9.3 and ITS SR 3.6.9.4 require verification that the system actuates on “an actual or simulated containment isolation signal.” This changes the Unit 1 and Unit 2 CTS by explicitly allowing the use of either an actual or simulated signal for the tests.

The purpose of Unit 1 CTS 4.6.6.1.c.2 and Unit 2 CTS 4.6.6.1.d.1 is to ensure the SBVS filtration train actuates upon receipt of a CIS and for Unit 2 includes receipt of a fuel pool high radiation signal. This change is acceptable because it has been determined that the current Surveillance Requirement acceptance criteria are not the only method that can be used for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual" or "simulated" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L04 **Unit 2 only:** (*Category 2 – Relaxation of Applicability*) CTS 3.6.6.1 Applicability requires, in part, that two SBVS be operable during crane operations with loads over recently irradiated fuel assemblies in the spent fuel storage pool in MODES 5 and 6. ITS 3.6.9 does not include an equivalent applicability. In addition, since the Applicability now does not require the LCO to be met during crane operations with loads over recently irradiated fuel assemblies in the spent fuel storage pool, the portion of CTS 3.6.6.1 Actions c.(1) and c.(2) to suspend movement of crane operations, has also been deleted.

The purpose of CTS 3.6.6.1 Applicability is to ensure that the SBVS is OPERABLE to provide filtration to the shield building annulus area to minimize the consequences of accidents and transients, including a fuel handling accident (FHA) involving recently irradiated fuel (i.e., an irradiated fuel assembly that has occupied part of a critical reactor core within the previous 72 hours) in the containment. Since the SBVS also provides filtration of the spent fuel pool area in the fuel handling building, the CTS 3.6.6.1 Applicability also ensures that the SBVS can provide filtration to the fuel pool area to minimize the consequences of an FHA involving recently irradiated fuel in the spent fuel storage pool. According to UFSAR Section 15.7.4.1.2, an FHA is initiated by the dropping of an irradiated fuel assembly either in the containment or in the fuel building. The FHA analysis assumes movement of an irradiated fuel assembly that has not occupied part of a critical reactor core within the previous 72 hours. It is improbable to move irradiated fuel within 72 hours of a plant shutdown (i.e., $k_{eff} < 0.99$) because of the physical time required to perform a controlled plant shutdown, cooldown and depressurize the RCS, and disassemble the reactor vessel to access irradiated fuel to begin fuel movement and PSL procedurally restricts movement of irradiated fuel until 72 hours after shutdown. However, the ITS requires two trains of the SBVS to be OPERABLE to ensure that, in the unlikely event an FHA in the containment or spent fuel storage pool occurs within 72 hours of a unit shutdown, ventilation and filtration are provided to minimize the consequences of this improbable event.

Crane travel related requirements were relocated from the CTS in Amendment 134, ("St. Lucie Units 1 and 2 – Issuance of Amendments Regarding the Relocation of Spent Fuel Pool Crane Technical Specification Requirements (TAC Nos. MB5667 and MB5668)," dated April 28, 2004 (ADAMS Accession No. ML 040440111)) to the Updated Final Safety Analysis Report where the operational detail is controlled under 10 CFR 50.59 criteria. As cited in the NRC Safety Evaluation associated with Amendment 134, NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants," regulatory guidelines for control of heavy load lifts provide assurance of safe handling of heavy loads in areas where a load drop could impact stored spent fuel, fuel in the reactor core, or equipment that may be required to achieve safe shutdown or permit continued decay heat removal. Section 5.1.1 of NUREG-0612 provides guidelines for reducing the likelihood of dropping heavy loads and provides criteria for establishing safe load paths; procedures for load-handling operations; training of crane operators; design, testing, inspection, and maintenance of cranes and lifting devices; and analyses of the impact of heavy load drops. The guidelines in Sections 5.1.2 through 5.1.6 address alternatives to either further reduce the probability of a load-handling accident or mitigate the consequences of heavy load drops. These alternatives include using a single-failure-proof crane to improve reliability through increased factors of safety and through redundancy or duality in certain active components. Criteria for design of single-failure-proof cranes are included in NUREG-0554, "Single-Failure-Proof Cranes for Nuclear Power Plants."

This change is acceptable because the possibility of damage to a recently irradiated fuel assembly as a consequence of mishandling components other than a recently irradiated fuel assembly is minimized by thorough training, detailed procedures and equipment design. The PSL crane design precludes the handling of heavy objects, such as shipping casks, over the spent fuel pool storage racks. Administrative controls prevent the movement of heavy loads over the cask pit whenever the cask pit rack is installed in the cask area of the spent fuel storage pool. In addition, the cask handling crane design meets the regulatory guidance for single-failure-proof cranes in NUREG-0554, "Single-Failure-Proof Cranes for Nuclear Power Plants" and NUREG-0612. Administrative controls that control the movement of light loads or prevent movement of light loads over recently irradiated fuel assemblies are similar to those used for control of heavy loads, to the extent practicable, as advised in NUREG-0612. Consequently, the possibility of dropping a load other than a recently irradiated fuel assembly and damaging of recently irradiated fuel assemblies in the containment or spent fuel storage pool is remote. Therefore, the Applicability of CTS 3.6.6.1 requiring the SBVS to be operable during crane operations with loads over recently irradiated fuel assemblies in the spent fuel storage pool in MODES 5 and 6 and related actions to suspend crane operations is not necessary to be included in the technical specifications and is removed.

This change is designated as less restrictive because the LCO requirements are applicable in fewer conditions than in the CTS and the associated Required Actions are less stringent in the ITS than applied in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.6 CONTAINMENT SYSTEMS

3.6.~~8~~ 9 Shield Building ~~Exhaust Air Cleanup~~ Ventilation System (SB~~EAC~~VS) ~~(Dual)~~

3.6.6.1 LCO 3.6.~~8~~ 9 Two SB~~EAC~~VS trains shall be OPERABLE.

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
ACTION a.	A. One SB~~EAC~~VS train inoperable.	A.1 Restore train to OPERABLE status.	7 days
ACTION b.	B. ----------- NOTE ----------- Not applicable when second SB~~EAC~~VS train intentionally made inoperable. ------------------------------- Two SB~~EAC~~VS trains inoperable.	B.1 Verify at least one train of containment spray is OPERABLE. AND B.2 Restore at least one SB~~EAC~~VS train to OPERABLE status.	1 hour 24 hours
ACTION a. and b.	C. Required Action and Associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

CTS

1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
4.6.6.1.a 9 SR 3.6.~~8~~.1	V Operate each SB~~EAC~~S train for ≥ 15 continuous minutes ~~[~~with heaters operating~~]~~.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~
4.6.6.1.b 9 SR 3.6.~~8~~.2	V Perform required SB~~EAC~~S filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
4.6.6.1.c.2 9 SR 3.6.~~8~~.3	V Verify each SB~~EAC~~S train actuates on an actual or simulated actuation signal, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~
~~SR 3.6.8.4~~	~~[Verify each SBEACS filter bypass damper can be opened, except for dampers that are locked, sealed, or otherwise secured in the open position.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]]~~

1 3 1 1 3 4

2 1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
~~SR 3.6.8.5 Verify each SBEACS train flow rate is ≥ [ ] cfm.~~	~~[[18] months on a STAGGERED TEST BASIS~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

CTS

3.6 CONTAINMENT SYSTEMS

3.6.~~8~~ 9 Shield Building ~~Exhaust Air Cleanup~~ Ventilation System (SB~~EAC~~S V) ~~(Dual)~~ 1

3.6.6.1 LCO 3.6.~~8~~ 9 Two SB~~EAC~~S V trains shall be OPERABLE.

Applicability APPLICABILITY: MODES 1, 2, 3, and 4~~.~~ , Insert 1 2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
ACTION b.(1) and c.(1) A. One SB~~EAC~~S V train inoperable.	A.1 Restore train to OPERABLE status.	7 days 1
ACTION NOTE B. ----------- NOTE ----------- Not applicable when second SB~~EAC~~S V train intentionally made inoperable. ---------------------------------	B.1 Verify at least one train of containment spray is OPERABLE.	1 hour 1
	AND	
ACTION b.(2) Two SB~~EAC~~S V trains inoperable Insert 2.	B.2 Restore at least one SB~~EAC~~S V train to OPERABLE status.	24 hours 1 2
ACTION b.(1) and b.(2) C. Required Action and Associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4. DOC A02	C.1 Be in MODE 3.	6 hours
	AND	
	C.2 Be in MODE 5.	36 hours 2

Insert 3

CTS

INSERT 1 2

Applicability During movement of recently irradiated fuel assemblies.

INSERT 2 2

DOC A02 in MODE 1, 2, 3, or 4

INSERT 3 2

ACTION c.(1) and c.(2)

DOC A02

D. Required Action and associated Completion Time of Condition A not met during movement of recently irradiated fuel assemblies. OR Two SBVS trains inoperable during movement of recently irradiated fuel assemblies.	D.1 Suspend movement of recently irradiated fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.6.6.1.a	9 SR 3.6.~~8~~.1	V Operate each SB~~EAC~~S train for ≥ 15 continuous minutes ~~[~~with heaters operating~~]~~.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	1 3
4.6.6.1.c	9 SR 3.6.~~8~~.2	V Perform required SB~~EAC~~S filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP	1
4.6.6.1.d.1 DOC A02	9 SR 3.6.~~8~~.3 containment isolation	V Verify each SB~~EAC~~S train actuates on an actual or simulated containment isolation actuation signal, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position. -----NOTE----- Only required to be met in MODES 1, 2, 3, and 4. -----	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	1 3 2
DOC A02 4.6.6.1.d.1	SR 3. 6.~~8~~.4 9	~~[Verify each SBEACS filter bypass damper can be opened, except for dampers that are locked, sealed, or otherwise secured in the open position.~~ -----NOTE----- Only required to be met during movement of recently irradiated fuel assemblies. ----- Verify each SBVS train actuates in the fuel pool area ventilation mode on an actual or simulated fuel pool area high radiation signal, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]]~~	4 3 2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.~~8~~.5 9 ~~Verify each SBEACS train flow rate is ≥ [ ] cfm.~~ -----NOTE----- Only required to be met during movement of recently irradiated fuel assemblies. ---------- Verify one SBVS train can maintain a negative pressure ≥ 0.125 inches water gauge in the fuel handling building after actuation of a fuel pool area high radiation signal.	~~[[18] months on a STAGGERED TEST BASIS~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~

DOC A02

4.6.6.1.d.4

4 3 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.9, SHIELD BUILDING VENTILATION SYSTEM (SBVS)

1. The ISTS 3.6.8 title "Shield Building Exhaust Air Cleanup System (SBEACS)" has been changed to "Shield Building Ventilation System (SBVS)" consistent with the St. Lucie Plant (PSL) site specific terminology. The heading for ISTS 3.6.8 includes the parenthetical expression (Dual). This identifying information is not included in the PSL ITS. This information is provided in the NUREG-1432, Rev. 5.0 to assist in identifying the appropriate Specifications to be used as a model for a plant-specific ITS conversion but serves no purpose in a plant-specific implementation. In addition, PSL design does not include the Hydrogen Mixing System (ISTS 3.6.9) and the Iodine Cleanup System (ISTS 3.6.10)); the PSL Unit 2 design does not include the Spray Additive System (ISTS 3.6.7). Therefore, ISTS 3.6.9 and ISTS 3.6.10 are not included in the PSL ITS. The Spray Additive System (ISTS 3.6.7) is renumbered as ITS 3.6.10, the Shield Building Exhaust Air Cleanup System (ISTS 3.6.8) is renumbered as ITS 3.6.9, the Shield Building (ISTS 3.6.11) is renumbered as ITS 3.6.7 and Vacuum Relief Valves (ISTS 3.6.12) is renumbered as ITS 3.6.8.

2. Changes are made (additions, deletions, and/or changes) to the ITS which reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS contains bracketed information and/or values that are generic to Combustion Engineering vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

4. ISTS SR 3.6.8.4 and ISTS 3.6.8.5 contain bracketed information and/or values that are generic to all Combustion Engineering vintage plants. ISTS SR 3.6.8.4 requires verification in accordance with the Surveillance Frequency Control Program that the filter bypass damper can be opened. ISTS 3.6.8.5 requires verification of SBVS train flow rate in accordance with the Surveillance Frequency Control Program. PSL does not have filter bypass dampers. Therefore, this SR is deleted. The flow rate of each SBVS train required by ISTS SR 3.6.8.5 is verified as required by the Ventilation Filter Test Program (VFTP). ISTS 3.6.8.2 (ITS SR 3.6.9.2) requires performance of filter testing in accordance with the VFTP. Therefore, this SR is duplicative and not adopted into the PSL ITS.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.6 CONTAINMENT SYSTEMS

B 3.6.~~8~~ 9 Shield Building ~~Exhaust Air Cleanup~~ Ventilation System (~~SBEACS~~ SBVS) ~~(Dual)~~ 1

BASES

BACKGROUND

The ~~SBEACS~~ SBVS is required by 10 CFR 50, Appendix A, GDC 41, "Containment Atmosphere Cleanup" (Ref. 1), to ensure that radioactive material leaking from the primary containment of a dual containment into the shield building (secondary containment) following a Design Basis Accident are filtered and adsorbed prior to exhausting to the environment. 1

The containment has a secondary containment, the shield building, which is a concrete structure that surrounds the steel primary containment vessel. Between the containment vessel and the shield building inner wall is an annular space that collects any containment leakage that may occur following a loss of coolant accident (LOCA). This space also allows for periodic inspection of the outer surface of the steel containment vessel.

Following a LOCA, the ~~SBEACS~~ SBVS establishes a negative pressure in the annulus between the shield building and the steel containment vessel. Filters in the system then control the release of radioactive contaminants to the environment. Shield building OPERABILITY is required to ensure retention of primary containment leakage and proper operation of the ~~SBEACS~~ SBVS. 1

The ~~SBEACS~~ SBVS consists of two separate and redundant trains. Each train includes ~~a heater~~ electric heating coils, ~~cooling coils,~~ a prefilter, a moisture separator demister, a high efficiency particulate air (HEPA) after filter, an activated charcoal adsorber section for removal of radioiodines, and a fan. Ductwork, valves and/or dampers, and instrumentation also form part of the system. The moisture separator~~s~~ demisters function to reduce the moisture content of the airstream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case of failure of the main HEPA filter bank. Only the upstream HEPA filter and the charcoal adsorber section are credited in the analysis. The system initiates and maintains a negative air pressure in the shield building by means of filtered exhaust ventilation of the shield building following receipt of a ~~safety injection actuation~~ containment isolation actuation signal (~~SIAS~~ CIS). The system is described in Reference 2. 1 2

The prefilters remove any large particles in the air, and the moisture separator~~s~~ demisters remove any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers. Heaters ~~may be~~ are included to reduce the relative humidity of the airstream on

---

BASES

BACKGROUND (continued)

systems operating in high humidity. ~~[The cooling coils cool the air to keep the charcoal beds from becoming too hot due to absorption of fission products.]~~ 3

~~During normal operation, the Shield Building Cooling System is aligned to bypass the SBEACS HEPA filters and charcoal adsorbers. For SBEACS operation following a DBA, however, the bypass dampers automatically reposition to draw the air through the filters and adsorbers.~~ 2

The ~~SBEACS~~ SBVS reduces the radioactive content in the shield building atmosphere following a DBA. Loss of the ~~SBEACS~~ SBVS could cause site boundary doses, in the event of a DBA, to exceed the values given in the licensing basis. 1

APPLICABLE SAFETY ANALYSES

The ~~SBEACS~~ SBVS design basis is established by the consequences of the limiting DBA, which is a LOCA. The accident analysis (Ref. 3) assumes that only one train of the ~~SBEACS~~ SBVS is functional due to a single failure that disables the other train. The accident analysis accounts for the reduction in airborne radioactive material provided by the remaining one train of this filtration system. The amount of fission products available for release from containment is determined for a LOCA. 1

The modeled ~~SBEACS~~ SBVS actuation in the safety analysis is based on a worst case response time associated with exceeding a~~n~~ ~~SIAS~~ CIS. The total response time from exceeding the signal setpoint to attaining the negative pressure of ~~[≥ 0.25]~~ 2.0 inches water gauge in the shield building is ~~[1 minute]~~ 2 minutes. This response time is composed of signal delay, diesel generator startup and sequencing time, system startup time, and time for the system to attain the required pressure after starting. 1 2 3

The ~~SBEACS~~ SBVS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

In the event of a DBA, one ~~SBEACS~~ SBVS train is required to provide the minimum particulate iodine removal assumed in the safety analysis. Two trains of the ~~SBEACS~~ SBVS must be OPERABLE to ensure that at least one train will operate, assuming that the other train is disabled by a single active failure. 1

BASES

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could lead to fission product release to containment that leaks to the shield building. The large break LOCA, on which this system's design is based, is a full power event. Less severe LOCAs and leakage still require the system to be OPERABLE throughout these MODES. The probability and severity of a LOCA decrease as core power and Reactor Coolant System pressure decrease. With the reactor shut down, the probability of release of radioactivity resulting from such an accident is low.

In MODES 5 and 6, the probability and consequences of a DBA are low due to the pressure and temperature limitations in these MODES. Under these conditions, the Filtration System is not required to be OPERABLE.

ACTIONS

A.1

With one ~~SBEACS~~ SBVS train inoperable, the inoperable train must be restored to OPERABLE status within 7 days. The components in this degraded condition are capable of providing 100% of the iodine removal needs after a DBA. The 7 day Completion Time is based on consideration of such factors as the availability of the OPERABLE redundant ~~SBEACS~~ SBVS train and the low probability of a DBA occurring during this period. 1 1

B.1 and B.2

If two ~~SBEACS~~ SBVS trains are inoperable, at least one ~~SBEACS~~ SBVS train must be returned to OPERABLE status within 24 hours. The Condition is modified by a Note stating it is not applicable if the second ~~SBEACS~~ SBVS train is intentionally declared inoperable. The Condition does not apply to voluntary removal of redundant systems or components from service. The Condition is only applicable if one train is inoperable for any reason and the second train is discovered to be inoperable, or if both trains are discovered to be inoperable at the same time. In addition, at least one train of containment spray must be verified to be OPERABLE within 1 hour. In the event of an accident, containment spray reduces the potential radioactive release from the containment, which reduces the consequences of the inoperable ~~SBEACS~~ SBVS trains. The Completion Time is based on Reference 4 which demonstrated that the 24 hour Completion Time is acceptable based on the infrequent use of the Required Actions and the small incremental effect on plant risk. 1 1

BASES

ACTIONS (continued)

C.1 and C.2

If the SBVS ~~SBEACS~~ train cannot be restored to OPERABLE status within the required 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 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. 1

SURVEILLANCE REQUIREMENTS

SR 3.6.~~8~~ 9.1

Operating each SBVS ~~SBEACS~~ train for ≥ 15 minutes ensures that all trains are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. ~~Experience from filter testing at operating units indicates that the 10 hour period is adequate for moisture elimination on the adsorbers and HEPA filters.~~ ~~[The 31 day Frequency was developed considering the known reliability of fan motors and controls, the two train redundancy available, and the iodine removal capability of the Containment Spray System.~~ 1 4 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~-----]~~ 5 3

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.~~8~~9.2

This SR verifies that the required ~~SBEACS~~ SBVS filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VFTP includes testing of HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.6.~~8~~9.3

The automatic startup ensures that each ~~SBEACS~~ SBVS train responds properly. The SR excludes automatic dampers and valves that are locked, sealed, or otherwise secured in the actuated position. The SR does not apply to dampers or valves that are locked, sealed, or otherwise secured in the actuated position since the affected dampers or valves were verified to be in the actuated position prior to being locked, sealed, or otherwise secured. Placing an automatic valve or damper in a locked, sealed, or otherwise secured position requires an assessment of the OPERABILITY of the system or any supported systems, including whether it is necessary for the valve or damper to be repositioned to the non-actuated position to support the accident analysis. Restoration of an automatic valve or damper to the non-actuated position requires verification that the SR has been met within its required Frequency. ~~[The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. Furthermore, the SR interval was developed considering that the SBEACS equipment OPERABILITY is demonstrated at a 31 day Frequency by SR 3.6.8.1.~~

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~ 5 3

~~[SR 3.6.8.4~~

~~The filter bypass dampers are tested to verify OPERABILITY. The dampers are in the bypass position during normal operation and must reposition for accident operation to draw air through the filters. The SR excludes automatic dampers that are locked, sealed, or otherwise secured in the open position. The SR does not apply to dampers that are locked, sealed, or otherwise secured in the open position since the affected dampers were verified to be in the open position prior to being locked, sealed, or otherwise secured. Placing an automatic damper in a locked, sealed, or otherwise secured position requires an assessment of the OPERABILITY of the system or any supported systems, including whether it is necessary for the damper to be closed to support the accident analysis. Restoration of an automatic damper to the closed position requires verification that the SR has been met within its required Frequency. [The [18] month Frequency is considered to be acceptable based on the damper reliability and design, the mild environmental conditions in the vicinity of the dampers, and the fact that operating experience has shown that the dampers usually pass the Surveillance when performed at the [18] month Frequency.~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]]~~ 3

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~SR 3.6.8.5~~

~~The SBEACS train flow rate is verified ≥ [ ] cfm to ensure that the flow rate is adequate to "pull down" the shield building pressure as required. This test also will verify the proper functioning of the fans, dampers, filters, absorbers, etc., when this SR is performed in conjunction with SR 3.6.11.4.~~

~~[The [18] month on a STAGGERED TEST BASIS Frequency is consistent with the Regulatory Guide 1.52 (Ref. 5) guidance.~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~-----]~~

3

REFERENCES

1. 10 CFR 50, Appendix A, GDC 41.
2. U FSAR, Section ~~[ ]~~ 6.2.
3. U FSAR, Section ~~[ ]~~ 15.
4. WCAP-16125-NP-A, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 2, August 2010.
5. ~~Regulatory Guide 1.52, Revision [2].~~

3 2

B 3.6 CONTAINMENT SYSTEMS

B 3.6.~~8~~ 9 Shield Building ~~Exhaust Air Cleanup~~ Ventilation System (~~SBEACS~~ SBVS) ~~(Dual)~~ 1

BASES

BACKGROUND

The ~~SBEACS~~ SBVS is required by 10 CFR 50, Appendix A, GDC 41, "Containment Atmosphere Cleanup" (Ref. 1), to ensure that radioactive material leaking from the primary containment of a dual containment into the shield building (secondary containment) following a Design Basis Accident are filtered and adsorbed prior to exhausting to the environment. 1

The containment has a secondary containment, the shield building, which is a concrete structure that surrounds the steel primary containment vessel. Between the containment vessel and the shield building inner wall is an annular space that collects any containment leakage that may occur following a loss of coolant accident (LOCA). This space also allows for periodic inspection of the outer surface of the steel containment vessel.

Following a LOCA, the ~~SBEACS~~ SBVS establishes a negative pressure in the annulus between the shield building and the steel containment vessel. Filters in the system then control the release of radioactive contaminants to the environment. Shield building OPERABILITY is required to ensure retention of primary containment leakage and proper operation of the ~~SBEACS~~ SBVS. Insert 1 1 2

The ~~SBEACS~~ SBVS consists of two separate and redundant trains. Each train includes ~~a heater~~ electric heating coils, ~~cooling coils,~~ a prefilter, a moisture separator demister, a high efficiency particulate air (HEPA) filter, after an activated charcoal adsorber section for removal of radioiodines, and a fan. Ductwork, valves and/or dampers, and instrumentation also form part of the system. Insert 2 The moisture separator~~s~~ demisters function to reduce the moisture content of the airstream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case of failure of the main HEPA filter bank. Only the upstream HEPA filter and the charcoal adsorber section are credited in the analysis. The system initiates and maintains a negative air pressure in the shield building by means of filtered exhaust ventilation of the shield building following receipt of a ~~safety injection actuation~~ containment isolation actuation signal (~~SIAS~~ CIAS). Insert 3 The system is described in Reference 2. 1 2

The prefilters remove any large particles in the air, and the moisture separator~~s~~ demisters remove any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers. Heaters ~~may be~~ are included to reduce the relative humidity of the airstream on

---

INSERT 1 2

A secondary function of the SBVS is to align and filter airborne radioactive particulate from the area of the fuel storage pool following a fuel handling accident.

INSERT 2 2

When aligned to evacuate the fuel handling building spent fuel pool area, the SBVS trains include two motor operated butterfly valves positioned to exhaust the fuel pool area.

INSERT 3 2

On a high fuel pool area radiation signal, the SBVS starts and aligns to exhaust the spent fuel pool area through the SBVS filtration units. In this alignment, the system achieves and maintains a negative air pressure in the fuel handling building of greater than 0.125 inch water gauge.

BASES

BACKGROUND (continued)

systems operating in high humidity. ~~[The cooling coils cool the air to keep the charcoal beds from becoming too hot due to absorption of fission products.]~~

Insert 4

~~During normal operation, the Shield Building Cooling System is aligned to bypass the SBEACS HEPA filters and charcoal adsorbers. For SBEACS operation following a DBA, however, the bypass dampers automatically reposition to draw the air through the filters and adsorbers.~~

The ~~SBEACS~~ SBVS reduces the radioactive content in the shield building atmosphere following a DBA. Loss of the ~~SBEACS~~ SBVS could cause site boundary doses, in the event of a DBA, to exceed the values given in the licensing basis. Insert 5

APPLICABLE SAFETY ANALYSES

The ~~SBEACS~~ SBVS design basis is established by the consequences of the limiting DBA, which is a LOCA. The accident analysis (Ref. 3) assumes that only one train of the ~~SBEACS~~ SBVS is functional due to a single failure that disables the other train. The accident analysis accounts for the reduction in airborne radioactive material provided by the remaining one train of this filtration system. The amount of fission products available for release from containment is determined for a LOCA.

The modeled ~~SBEACS~~ SBVS actuation in the safety analysis is based on a worst case response time associated with exceeding a~~n~~ ~~SIAS~~ CIAS. The total response time from exceeding the signal setpoint to attaining the negative pressure of ~~[≥ 0.25]~~ 2.0 inch~~~~es water gauge in the shield building is ~~[1 minute]~~ 99 seconds. This response time is composed of signal delay, diesel generator startup and sequencing time, system startup time, and time for the system to attain the required pressure after starting.

Insert 6

The ~~SBEACS~~ SBVS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

In the event of a DBA, one ~~SBEACS~~ SBVS train is required to provide the minimum particulate iodine removal assumed in the safety analysis. Two trains of the ~~SBEACS~~ SBVS must be OPERABLE to ensure that at least one train will operate, assuming that the other train is disabled by a single active failure.

Insert 7

INSERT 4 2

The SBVS is interconnected to the spent fuel pool area exhaust duct. Upon receipt of a high radiation signal in the spent fuel pool area, the exhaust is directed to the SBVS filtration units. Two fuel pool area interconnecting valves open and the SBVS fans start automatically. Two shield building valves isolate the annulus. In the event of a LOCA, a CIAS overrides the fuel pool area high radiation signal and initiates the depressurization of the shield building annulus.

INSERT 5 2

The SBVS when aligned to evacuate the fuel pool area is designed to limit offsite exposures resulting from a fuel handling accident involving recently irradiated fuel.

INSERT 6 2

The SBVS alignment to evacuate the fuel pool area is designed to mitigate the consequences of a fuel handling accident involving the handling of recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 72 hours) in which rods in the fuel assembly are assumed to be damaged. The analysis of a fuel handling accident is given in Reference 3.

INSERT 7 2

The SBVS is considered OPERABLE for fuel handling building evacuation when the individual components necessary to evacuate the fuel pool area are OPERABLE in both SBVS trains.

BASES

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could lead to fission product release to containment that leaks to the shield building. The large break LOCA, on which this system's design is based, is a full power event. Less severe LOCAs and leakage still require the system to be OPERABLE throughout these MODES. The probability and severity of a LOCA decrease as core power and Reactor Coolant System pressure decrease. With the reactor shut down, the probability of release of radioactivity resulting from such an accident is low.

In MODES 5 and 6, Insert 8 ~~the probability and consequences of a DBA are low due to the pressure and temperature limitations in these MODES. Under these conditions, the Filtration System is not required to be OPERABLE.~~ 2

ACTIONS

A.1

With one ~~SBEACS~~ SBVS train inoperable, the inoperable train must be restored to OPERABLE status within 7 days. The components in this degraded condition are capable of providing 100% of the iodine removal needs after a DBA. The 7 day Completion Time is based on consideration of such factors as the availability of the OPERABLE redundant ~~SBEACS~~ SBVS train and the low probability of a DBA occurring during this period. 1

B.1 and B.2

If two ~~SBEACS~~ SBVS trains are inoperable, Insert 9 at least one ~~SBEACS~~ SBVS train must be returned to OPERABLE status within 24 hours. The Condition is modified by a Note stating it is not applicable if the second ~~SBEACS~~ SBVS train is intentionally declared inoperable. The Condition does not apply to voluntary removal of redundant systems or components from service. The Condition is only applicable if one train is inoperable for any reason and the second train is discovered to be inoperable, or if both trains are discovered to be inoperable at the same time. In addition, at least one train of containment spray must be verified to be OPERABLE within 1 hour. In the event of an accident, containment spray reduces the potential radioactive release from the containment, which reduces the consequences of the inoperable ~~SBEACS~~ SBVS trains. The Completion Time is based on Reference 4 which demonstrated that the 24 hour Completion Time is acceptable based on the infrequent use of the Required Actions and the small incremental effect on plant risk. 1 2

INSERT 8

2

the shield building is not required to be OPERABLE. Therefore, the shield building ventilation mode of SBVS is not required to be OPERABLE.

During movement of recently irradiated fuel assemblies, the fuel pool area ventilation mode of SBVS is required to be OPERABLE to mitigate the consequences of a fuel handling accident involving handling recently irradiated fuel. Due to radioactive decay, SBVS is only required to mitigate fuel handling accidents involving handling of recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 72 hours).

INSERT 9

2

in MODE 1, 2, 3, or 4

BASES

ACTIONS (continued)

C.1 and C.2

If the ~~SBEACS~~ SBVS train of Condition A or B when in Mode 1, 2, 3, or 4 cannot be restored to OPERABLE status within the required 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 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. Insert 10 1 2 2

SURVEILLANCE REQUIREMENTS

SR 3.6.~~8~~ 9.1 1

Operating each ~~SBEACS~~ SBVS train for ≥ 15 minutes ensures that all trains are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. ~~Experience from filter testing at operating units indicates that the 10 hour period is adequate for moisture elimination on the adsorbers and HEPA filters.~~ 4 ~~[The 31 day Frequency was developed considering the known reliability of fan motors and controls, the two train redundancy available, and the iodine removal capability of the Containment Spray System.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 5
~~---]~~ 3

INSERT 10 2

D.1

When Required Action A.1 cannot be completed within the required Completion Time or both SBVS trains are inoperable due to an inability to evacuate the fuel pool area during movement of recently irradiated fuel assemblies, this operation must be suspended. Action must be taken to place the unit in a condition in which the fuel pool area ventilation mode of SBVS does not apply. This does not preclude the movement of fuel to a safe position.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.~~8~~ 9 .2

This SR verifies that the required ~~SBEACS~~ SBVS filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VFTP includes testing of HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP. 1

SR 3.6.~~8~~ 9 .3 2

The automatic startup on an automatic CIAS ensures that each ~~SBEACS~~ SBVS train responds properly. The SR excludes automatic dampers and valves that are locked, sealed, or otherwise secured in the actuated position. The SR does not apply to dampers or valves that are locked, sealed, or otherwise secured in the actuated position since the affected dampers or valves were verified to be in the actuated position prior to being locked, sealed, or otherwise secured. Placing an automatic valve or damper in a locked, sealed, or otherwise secured position requires an assessment of the OPERABILITY of the system or any supported systems, including whether it is necessary for the valve or damper to be repositioned to the non-actuated position to support the accident analysis. Restoration of an automatic valve or damper to the non-actuated position requires verification that the SR has been met within its required Frequency. ~~[The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. Furthermore, the SR interval was developed considering that the SBEACS equipment OPERABILITY is demonstrated at a 31 day Frequency by SR 3.6.8.1.~~ 1 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

Insert 11 2

INSERT 11 2

This SR is modified by a Note that states that the SR is only required to be met in MODES 1, 2, 3, and 4 because the shield building ventilation mode of SBVS is only required in these MODES.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-------------------------------REVIEWER'S NOTE-------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 5
~~---]~~ 3

~~[~~ SR 3.6.~~8~~ 9 .4 1 2

Insert 12

~~The filter bypass dampers are tested to verify OPERABILITY. The dampers are in the bypass position during normal operation and must reposition for accident operation to draw air through the filters. The SR excludes automatic dampers that are locked, sealed, or otherwise secured in the open position. The SR does not apply to dampers that are locked, sealed, or otherwise secured in the open position since the affected dampers were verified to be in the open position prior to being locked, sealed, or otherwise secured. Placing an automatic damper in a locked, sealed, or otherwise secured position requires an assessment of the OPERABILITY of the system or any supported systems, including whether it is necessary for the damper to be closed to support the accident analysis. Restoration of an automatic damper to the closed position requires verification that the SR has been met within its required Frequency. [The [18] month Frequency is considered to be acceptable based on the damper reliability and design, the mild environmental conditions in the vicinity of the dampers, and the fact that operating experience has shown that the dampers usually pass the Surveillance when performed at the [18] month Frequency.~~ 3

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-------------------------------REVIEWER'S NOTE-------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]]~~

2

INSERT 12

This SR verifies that each SBVS train starts and operates on an actual or simulated high radiation actuation signal in the fuel pool area exhaust. The SR excludes automatic dampers and valves that are locked, sealed, or otherwise secured in the actuated position. The SR does not apply to dampers or valves that are locked, sealed, or otherwise secured in the actuated position since the affected dampers or valves were verified to be in the actuated position prior to being locked, sealed, or otherwise secured. Placing an automatic valve or damper in a locked, sealed, or otherwise secured position requires an assessment of the OPERABILITY of the system or any supported systems, including whether it is necessary for the valve or damper to be repositioned to the non-actuated position to support the accident analysis. Restoration of an automatic valve or damper to the non-actuated position requires verification that the SR has been met within its required Frequency.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

A Note to the SR indicates that this test is only required to be met during movement of recently irradiated fuel assemblies because the fuel pool area ventilation mode of SBVS is only required during this operation.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.~~8~~9.5

Insert 13

~~The SBEACS train flow rate is verified ≥ [ ] cfm to ensure that the flow rate is adequate to "pull down" the shield building pressure as required. This test also will verify the proper functioning of the fans, dampers, filters, absorbers, etc., when this SR is performed in conjunction with SR 3.6.11.4.~~

~~[The [18] month on a STAGGERED TEST BASIS Frequency is consistent with the Regulatory Guide 1.52 (Ref. 5) guidance.~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~

REFERENCES

1. 10 CFR 50, Appendix A, GDC 41.
2. UFSAR, Section ~~[ ]~~ 6.2.
3. UFSAR, Section ~~[ ]~~ 15.
4. WCAP-16125-NP-A, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 2, August 2010.
5. ~~Regulatory Guide 1.52, Revision [2].~~

INSERT 13

2

This SR verifies proper operation of the SBVS and the ability of the fuel building to maintain negative pressure with respect to potentially uncontaminated adjacent areas. The system is designed to maintain a slight negative pressure in the fuel pool area after actuation of a fuel pool area high radiation signal to prevent unfiltered release of radioactivity.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

A Note to the SR indicates that this test is only required to be met during movement of recently irradiated fuel assemblies because the fuel pool area ventilation mode of SBVS is only required during this operation.

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.9 BASES, SHIELD BUILDING VENTILATION SYSTEM (SBVS)

1. The ISTS 3.6.8 title "Shield Building Exhaust Air Cleanup System (SBEACS)" has been changed to "Shield Building Ventilation System (SBVS)" consistent with the St. Lucie Plant (PSL) site specific terminology. The heading for ISTS 3.6.8 includes the parenthetical expression (Dual). This identifying information is not included in the PSL ITS. This information is provided in the NUREG-1432, Rev. 5.0 to assist in identifying the appropriate Specifications to be used as a model for a plant-specific ITS conversion but serves no purpose in a plant-specific implementation. In addition, the PSL design does not include the Hydrogen Mixing System (ISTS 3.6.9) and the Iodine Cleanup System (ISTS 3.6.10); the PSL Unit 2 design does not include the Spray Additive System (ISTS 3.6.7). Therefore, ISTS 3.6.9 and ISTS 3.6.10 are not included in the PSL ITS. The Spray Additive System (ISTS 3.6.7) is renumbered as ITS 3.6.10, the Shield Building Exhaust Air Cleanup System (ISTS 3.6.8) is renumbered as ITS 3.6.9, the Shield Building (ISTS 3.6.11) is renumbered as ITS 3.6.7 and Vacuum Relief Valves (ISTS 3.6.12) is renumbered as ITS 3.6.8.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS contains bracketed information and/or values that are generic to Combustion Engineering vintage plants. The brackets are removed and the proper plant specific information/value is changed to reflect the current licensing basis.

4. Changes are made to the ITS Bases consistent and in conformance with St. Lucie Unit 1 License Amendment 240 and Unit 2 License Amendment 191 (ADAMS Accession No. ML17219A556).

5. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.9, SHIELD BUILDING VENTILATION SYSTEM (SBVS)

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 10

ITS 3.6.10, SPRAY ADDITIVE SYSTEM - Unit 1 Only

Current Technical Specifications (CTS) Markup and Discussion of Changes (DOCs)

CONTAINMENT SYSTEMS

SPRAY ADDITIVE SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.6.10 3.6.2.2 The spray additive system shall be OPERABLE with:

SR 3.6.10.2 SR 3.6.10.3

a. A spray additive tank containing a volume of between 4010 and 5000 gallons of between 28.5 and 30.5% by weight NaOH solution, and

b. ~~Two spray additive eductors each capable of adding NaOH solution from the chemical additive tank to a containment spray system pump flow.~~ LA01

Applicability **APPLICABILITY:** MODES 1, 2 and 3.*

ACTION:

ACTION A ACTION B

With the spray additive system inoperable, restore the system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; ~~restore the spray additive system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours~~. reduce pressurizer pressure to <1750 psia within 12 hours A02

SURVEILLANCE REQUIREMENTS

4.6.2.2 The spray additive system shall be demonstrated OPERABLE:

SR 3.6.10.1 a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. In accordance with the Surveillance Frequency Control Program by:

SR 3.6.10.2 1. Verify~~ing the contained~~ spray additive tank solution volume ~~in the tank, and~~ is within limit of 3.6.2.2.a.

SR 3.6.10.3 2. Verify~~ing the concentration of the~~ spray additive tank NaOH solution ~~by chemical analysis~~ is within limit of 3.6.2.2.a. LA02

SR 3.6.10.4 c. In accordance with the Surveillance Frequency Control Program~~, during shutdown,~~ by verifying that each automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to its correct position on ~~a CSAS test~~ an actual or simulated actuation signal. L01 L02 L03

Applicability * Applicable when pressurizer pressure is $\geq$ 1750 psia.

CONTAINMENT SYSTEMS

SPRAY ADDITIVE SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.6.10.5 d. In accordance with the Surveillance Frequency Control Program by verifying a minimum sodium hydroxide (NaOH) flow rate of 10.5 gpm from the spray additive tank ~~to a drain connection immediately downstream of the tank outlet valve, and a demineralized water flow rate of 18 ± 1.5 gpm from that same drain connection to each containment spray pump~~. LA03

~~DELETED~~

ADMINISTRATIVE CHANGES

A01 In the conversion of the St. Lucie Plant (PSL) Unit 1 Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG - 1432, Rev. 5.0, "Standard Technical Specifications – Combustion Engineering Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 CTS 3.6.2.2 Action states in part, “restore the spray additive system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.” ITS 3.6.10 Required Action B.2 states that if the Required Action and associated Completion Time are not met, the plant must reduce pressurizer pressure to < 1750 psia within 12 hours.” This change replaces the requirement to, “restore the spray additive system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours,” with the requirement to reduce pressurizer pressure to < 1750 psia within 12 hours.

The purpose of the CTS 3.6.2.2 Action is to restore the system to OPERABLE status or place the unit in a condition in which the equipment is no longer required. Consistent with the Applicability of the Containment Spray System, which supports the Spray Additive System, the Applicability of CTS 3.6.2.2 only requires the Spray Additive System to be OPERABLE when pressurizer pressure is ≥ 1750 psia. The CTS 3.6.2.2 requirement to “restore the spray additive system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours,” is inconsistent with the requirements of CTS 3.0.2 (ITS LCO 3.0.2). CTS 3.0.2 states, in part, “If the LCO is met or is no longer applicable prior to expiration of the specified time interval(s), completion of the ACTIONS is not required, unless otherwise stated.” Once pressurizer pressure is < 1750 psia, LCO 3.6.2.2 (ITS LCO 3.6.10) is not applicable and, therefore, the remaining actions are no longer required. Therefore, the requirement to restore the spray additive system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours is no longer required to be completed.

This change is designated as administrative and has no technical impact because the requirement to “restore the spray additive system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours,” is an action that is never applicable since the CTS (and ITS) ACTIONS require the unit to be placed in a condition where the Spray Additive System is no longer required prior to the applicable action requirements becoming limiting.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits*) CTS 3.6.2.2.b, in part, states, the spray additive system shall be OPERABLE “with: “and b. Two spray additive eductors each capable of adding NaOH solution from the chemical additive tank to a containment spray system pump flow." ITS 3.6.7 does not contain this level of detail. This changes the CTS by moving details concerning what constitutes an OPERABLE containment spray additive system to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the information and is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA02 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.6.2.2.b.1 requires verification of the NaOH solution by chemical analysis. This changes the CTS by moving the procedural detail specifying the method of determining solution concentration to the Bases.

The removal of these details for performing surveillance requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to perform a verification of the spray additive tank NaOH solution concentration. Also, this change is acceptable because these types of procedural detail will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA03 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.6.2.2.d states in part “to a drain connection immediately downstream of the tank outlet valve, and a demineralized water flow rate of 18 $\pm$ 1.5 gpm from that same drain connection to each containment spray pump.” This changes the CTS by moving the procedural detail to the Bases.

The removal of these details for performing surveillance requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to perform a verification of minimum sodium hydroxide flow rate from the spray additive tank. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 8 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.6.2.2.c requires verification during shutdown in accordance with the Surveillance Frequency Control Program that each automatic valve in the flow path actuates to its correct position on a CSAS signal. ITS SR 3.6.10.4 requires the same testing with no restriction as to when (i.e., during shutdown) the test can be performed. This changes the CTS by deleting the requirement to perform the Surveillance during shutdown.

The purpose of CTS 4.6.2.2.c is to ensure that each automatic valve in the Spray Additive System flow path actuates to its correct position on a CSAS. This change is acceptable because the Surveillance Requirement can be performed in other than shutdown conditions without jeopardizing safe plant operations. The control of unit conditions appropriate to perform the test is an issue for procedures and scheduling and has been determined by the NRC Staff to be unnecessary as a Technical Specification restriction. As indicated in Generic Letter 91-04, allowing this control is consistent with the vast majority of other Technical Specification Surveillances that do not dictate unit conditions for the Surveillance. This change is designated as less restrictive because the Surveillance may be performed at plant conditions other than shutdown.

L02 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.6.2.2.c requires verification that the spray additive system starts automatically on a Containment Spray Actuation Signal (CSAS). ISTS SR 3.6.10.4 requires verification that each automatic valve in the flow path actuates to the correct position except for valves that are locked, sealed, or otherwise secured in the actuated position. This changes the CTS by excluding those valves that are locked, sealed, or otherwise secured in the actuated position from verification.

The purpose of CTS 4.6.2.2.c is to provide assurance that if an event occurred requiring actuation of the spray additive system, then those valves and dampers requiring automatic actuation would actuate to their correct position. Those automatic valves and dampers that are locked, sealed, or otherwise secured in position are not required to actuate on a containment spray actuation signal in order to perform their safety function because they are already in the required position. Testing such valves and dampers would not provide any additional assurance of OPERABILITY. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L03 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.6.2.2.c requires verification that the spray additive system starts automatically on a Containment Spray Actuation Signal (CSAS) test signal. ISTS SR 3.6.10.4 requires verification that each automatic valve in the flow path actuates on an actual or simulated actuation signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal for the test.

The purpose of CTS 4.6.2.2.c is to ensure the spray additive system actuates upon receipt of a CSAS signal. This change is acceptable because it has been determined that the current Surveillance Requirement acceptance criteria are not the only method that can be used for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual" or "simulated" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.6 CONTAINMENT SYSTEMS

3.6.~~7~~ 10 Spray Additive System ~~(Atmospheric and Dual)~~

3.6.2.2 LCO 3.6.~~7~~ 10 The Spray Additive System shall be OPERABLE.

Applicability * Note APPLICABILITY: MODES 1~~,~~ and 2, ~~3, and [4].~~ MODE 3 with pressurizer pressure ≥1750 psia

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
ACTION	A. Spray Additive System inoperable.	A.1 Restore Spray Additive System to OPERABLE status.	72 hours
ACTION DOC A02	B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 ~~Be in MODE 5~~ Reduce pressurizer pressure to < 1750 psia.	6 hours ~~84~~ 12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
4.6.2.2.a	SR 3.6.~~7~~ 10.1 Verify each spray additive manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program~~]~~

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
3.6.2.2.a 4.6.2.2.b.1	SR 3.6.~~7~~.2 10	Verify spray additive tank solution volume is ≥ ~~[816]~~ 4010 gal ~~[90%]~~ and ≤ ~~[896]~~ 5000 gal ~~[100%]~~.	~~[184 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	1 3
3.6.2.2.a 4.6.2.2.b.2	SR 3.6.~~7~~.3 10	Verify spray additive tank ~~[N_2H_4]~~ NaOH solution concentration is ≥ ~~[33]~~ 28.5% and ≤ ~~[35]~~ 30.5% by weight.	~~[184 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	1 3
	~~SR 3.6.7.4~~	~~[Verify each spray additive pump develops a differential pressure of [100] psid on recirculation flow.~~	~~In accordance with the INSERVICE TESTING PROGRAM]~~	3
4.6.2.2.c	SR 3.6.~~7.5~~ 10.4	Verify each spray additive automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	3

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
4.6.2.2.d SR 3.6.~~7.6~~ 10.5	~~[~~ Verify spray additive flow a minimum ~~[~~rate~~]~~ of 10.5 gpm from ~~each solution's flow path~~ the spray additive tank.	~~[5 years~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]]~~ 1 3

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.10, SPRAY ADDITIVE SYSTEM – UNIT 1 ONLY

1. The ISTS 3.6.7 title "Spray Additive System" includes the parenthetical expression (Dual). This identifying information is not included in the PSL ITS. This information is provided in the NUREG-1432, Rev. 5.0 to assist in identifying the appropriate Specifications to be used as a model for a plant-specific ITS conversion but serves no purpose in a plant-specific implementation. In addition, PSL design does not include the Hydrogen Mixing System (ISTS 3.6.9) and the Iodine Cleanup System (ISTS 3.6.10); the PSL Unit 2 design does not include the Spray Additive System (ISTS 3.6.7). Therefore, ISTS 3.6.9 and ISTS 3.6.10 are not included in the PSL ITS. The Spray Additive System (ISTS 3.6.7) is renumbered as ITS 3.6.10, the Shield Building Exhaust Air Cleanup System (ISTS 3.6.8) is renumbered as ITS 3.6.9, the Shield Building (ISTS 3.6.11) is renumbered as ITS 3.6.7 and Vacuum Relief Valves (ISTS 3.6.12) is renumbered as ITS 3.6.8.

2. Changes are made (additions, deletions, and/or changes) to the ITS which reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS contains bracketed information and/or values that are generic to Combustion Engineering vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

4. PSL Current Technical Specifications only require the Spray Additive and Containment Spray Systems to be OPERABLE in MODES 1, 2 and 3 when pressurizer pressure is ≥ 1750 psia. The Applicability of ISTS 3.6.7 (ITS 3.6.10) reflects this current licensing basis. In addition, the change made to Required Action B.2 reflects the new end state as described in Discussion of Change A02.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.6 CONTAINMENT SYSTEMS

B 3.6.~~7~~ Spray Additive System ~~(Atmospheric and Dual)~~ 1

10

BASES

BACKGROUND

The Spray Additive System is a subsystem of the Containment Spray System that assists in reducing the iodine fission product inventory in the containment atmosphere in the event of an accident such as a loss of coolant accident (LOCA).

.5

The addition of a spray additive to the boric acid spray solution increases the pH of the spray solution and maintains the containment sump pH above 8.~~0~~ during the recirculation phase of an accident. An elevated pH is desired since it enhances the iodine removal capacity of the sprays and aids in the retention of iodine in the water in the containment sump. 2

operates in conjunction with the containment spray system and

(NaOH storage)

system eductor, tank

orifice

spray nozzles

Insert 1

The Spray Additive System consists of a single spray additive tank and two redundant 100% capacity trains. Each train contains a ~~chemical addition pump, an injection valve,~~ isolation valve~~s~~, a flow ~~meter~~, and ~~a flow controller~~. Upon receipt of a containment spray actuation signal (CSAS), the ~~chemical addition pumps start and the injection valves open in each redundant train. The spray additive is then injected into the Containment Spray System at the suction of the containment spray pumps at metered amounts corresponding to the individual containment spray pump discharge flow rate. The rate at which the spray additive is added is reduced when a recirculation actuation signal is generated and the Containment Spray System enters the recirculation mode of operation.~~ The pH of the containment spray solution is maintained between ~~9.0 and 10.0~~ during the injection mode and ~~between 8.0 and 9.0 in~~ the recirculation mode. Upon reaching a Low-Low level in the spray ~~chemical addition~~ tank, the ~~spray chemical addition pumps stop and the injection and~~ isolation valves close (Ref. 1). 2

7.89 and 9.49

additive

caustic line

to isolate the tank

The Spray Additive System aids in reducing the iodine fission production inventory in the containment atmosphere.

APPLICABLE SAFETY ANALYSES

The Spray Additive System is essential to the effective removal of airborne iodine within containment following a Design Basis Accident (DBA).

Following the assumed release of radioactive materials into containment, the containment is assumed to leak at its design value following the accident.

Insert 1

tank isolation valves open and stored sodium hydroxide (NaOH) is drawn into the suction of the containment spray pumps through the use of eductors. Flow rate is measured by flow orifices and is determined by eductor size and containment spray pump suction pressure.

1

BASES

APPLICABLE SAFETY ANALYSES (continued)

The DBA response time assumed for the Spray Additive System is the same as for the Containment Spray System and is discussed in the Bases for Specification 3.6.6, "Containment Spray and Cooling Systems."

The DBA analyses assume that one train of the Containment Spray System/Spray Additive System is inoperable and that the entire spray additive tank volume is added to the remaining Containment Spray System flow path.

During a LOCA, the iodine inventory released to the containment is considered to be released instantaneously and uniformly distributed in the containment free volume. The containment volume is made up of sprayed and unsprayed regions. The sprayed region is enveloped by direct spray and mixed by the ~~dome air circulators and emergency~~ containment fan coolers. Mixing between the sprayed and unsprayed regions is facilitated by the ~~emergency~~ containment fan coolers and condensation of steam by the sprays. 2

The Spray Additive System satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The Spray Additive System is necessary to reduce the release of radioactive material to the environment in the event of a DBA. To be considered OPERABLE, the volume and concentration of the spray additive solution must be sufficient to maintain the pH of the spray solution between ~~[9.0 and 10.0]~~ 7.89 and 9.49 in the injection mode and ~~[8.0 and 9.0] in~~ ~~the recirculation mode~~. This pH range maximizes the effectiveness of the iodine removal mechanism, without introducing conditions that may induce caustic stress corrosion cracking of mechanical components. 3 2

During a LOCA, one Spray Additive System train is capable of providing 100% of the required iodine removal capacity. To ensure at least one train is available in the event of the limiting single failure, both trains must be maintained in an OPERABLE status.

APPLICABILITY

In MODES 1, 2, ~~3,~~ and ~~4~~ MODE 3 ≥ 1750 psia, a DBA could cause a release of radioactive material to containment requiring the operation of the Spray Additive System. The Spray Additive System assists the Containment Spray System in reducing the iodine fission product inventory prior to release to the environment. 5

~~In MODES 5~~ In MODE 3 with pressurizer pressure <1750 psia and in MODES 4, 5, and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations in these MODES. Thus, the Spray Additive System is not required to be OPERABLE ~~in MODES 5~~ in MODE 3 when pressurizer pressure is <1750 psia and in MODES 4, 5, and 6. Additionally, the Containment Spray System is not required to be OPERABLE when pressurizer pressure is <1750 psia.

BASES

ACTIONS

A.1

With the Spray Additive System inoperable, the system must be restored to OPERABLE status within 72 hours. The pH adjustment of the containment spray flow for corrosion protection and iodine removal enhancement are reduced in this condition. The Containment Spray System would still be available and would remove some iodine from the containment atmosphere in the event of a DBA. The 72 hour Completion Time takes into account the redundant flow path capabilities and the low probability of the worst case DBA occurring during this period.

B.1 and B.2

reduce pressurizer pressure to <1750 psia

If the Spray Additive System cannot be restored to OPERABLE status within the required 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 6 hours and ~~to MODE 5~~ within ~~84~~ hours. The allowed Completion Time ~~of 6 hours is~~ reasonable, based on operating experience, to reach ~~MODE 3~~ from full power conditions in an orderly manner and without challenging plant systems. ~~The extended interval to reach MODE 5 allows additional time for restoration of the Spray Additive System and is reasonable when considering the reduced pressure and temperature conditions in MODE 3 for the release of radioactive material from the Reactor Coolant System.~~ 5

12

s are

the required plant conditions

SURVEILLANCE REQUIREMENTS

SR 3.6.~~7~~.1 1

10

Verifying the correct alignment of Spray Additive System manual, power operated, and automatic valves in the spray additive flow path provides assurance that the system is able to provide additive to the Containment Spray System in the event of a DBA. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these valves were verified to be in the correct position prior to locking, sealing, or securing. This SR does not require any testing or valve manipulation. Rather, it involves verification that those valves outside containment and capable of potentially being mispositioned are in the correct position.

~~[The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.~~ 3

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~OR~~ 3

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~---]~~ 3

SR 3.6.~~7~~.2 10 1

To provide effective iodine removal, the containment spray must be an alkaline solution. Since the refueling water tank contents are normally acidic, ~~the volume of the~~ a spray additive tank volume between 4010 and 5000 gallons ~~must~~ provides a sufficient volume of spray additive to adjust pH for all water injected. This SR is performed to verify the availability of sufficient ~~hydrazine (N_2H_4)~~ sodium hydroxide (NaOH) solution in the Spray Additive System. ~~[The 184 day Frequency is based on the low probability of an undetected change in tank volume occurring during the SR interval (the tank is isolated during normal unit operations). Tank level is also indicated and alarmed in the control room, such that there is a high confidence that a substantial change in level would be detected.~~ 2 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~---]~~ 3

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.~~7~~.3 10 1

(NaOH)

≥ 28.5% and ≤ 30.5% by weight

This SR provides verification of the ~~N_2H_4~~ concentration in the spray additive tank ~~and is sufficient~~ to ensure that the spray solution being injected into containment is at the correct pH level. The concentration of (NaOH) ~~N_2H_4~~ in the spray additive tank must be determined by chemical analysis. 2

~~[The 184 day Frequency is sufficient to ensure that the concentration level of N_2H_4 in the spray additive tank remains within the established limits. This is based on the low likelihood of an uncontrolled change in concentration (the tank is normally isolated) and the probability that any substantial variance in tank volume will be detected.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~------------------------------REVIEWER'S NOTE------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~ 4 3

~~[SR 3.6.7.4~~

~~The chemical addition pump must be verified to provide the flow rate assumed in the accident analysis to the Containment Spray System. The Spray Additive System is not operated during normal operations. This prevents periodically subjecting systems, structures, and components within containment to a caustic spray solution. Therefore, this test must be performed on recirculation with the discharge flow path from each spray chemical addition pump aligned back to the spray additive tank. The differential pressure obtained by the pump on recirculation is analogous to the full spray additive flow provided to the Containment Spray System on an actual CSAS. The Frequency of this SR is in accordance with the INSERVICE TESTING PROGRAM and is sufficient to identify component degradation that may affect flow rate.]~~ 3

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.~~7.5~~ 10.4 2

This SR verifies that each automatic valve in the Spray Additive System flow path actuates to its correct position on a CSAS. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls~~. [The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~ 3

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~---]~~ 3

~~[~~ SR 3.6.~~7.6~~ 10.5 3

To ensure that the correct pH level is established in the borated water solution provided by the Containment Spray System, the flow rate in the Spray Additive System is verified periodically ~~once per 5 years~~. This SR provides assurance that the correct amount of (NaOH) ~~N_2H_4~~ will be injected ~~metered~~ into the flow path upon Containment Spray System initiation. 6 2 ~~[Due to the passive nature of the spray additive flow controls, the 5 year Frequency is sufficient to identify component degradation that may affect flow rate.~~ 3 This SR is performed by verifying flow from the spray additive tank to a drain connection immediately downstream of the tank outlet valve, and a demineralized water flow rate of 18 + 1.5 gpm from the same drain connection to each containment spray pump. 2

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]]~~

REFERENCES	1. U FSAR, Section ~~[ ]~~ 6.2.

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.10 BASES, SPRAY ADDITIVE SYSTEM – UNIT 1 ONLY

1. The ISTS 3.6.7 title "Spray Additive System" includes the parenthetical expression (Dual). This identifying information is not included in the PSL ITS. This information is provided in the NUREG-1432, Rev. 5.0 to assist in identifying the appropriate Specifications to be used as a model for a plant-specific ITS conversion but serves no purpose in a plant-specific implementation. In addition, PSL design does not include the Hydrogen Mixing System (ISTS 3.6.9) and the Iodine Cleanup System (ISTS 3.6.10); the PSL Unit 2 design does not include the Spray Additive System (ISTS 3.6.7). Therefore, ISTS 3.6.9 and ISTS 3.6.10 are not included in the PSL ITS. The Spray Additive System (ISTS 3.6.7) is renumbered as ITS 3.6.10, the Shield Building Exhaust Air Cleanup System (ISTS 3.6.8) is renumbered as ITS 3.6.9, the Shield Building (ISTS 3.6.11) is renumbered as ITS 3.6.7 and Vacuum Relief Valves (ISTS 3.6.12) is renumbered as ITS 3.6.8.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The ISTS contains bracketed information and/or values that are generic to Combustion Engineering vintage plants. The brackets are removed, and the proper plant specific information/value is changed to reflect the current licensing basis.

4. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.

5. Concomitant Bases changes made to reflect changes to the ISTS Specification regarding change to Applicability and ACTIONS to specify the end state as MODE 3 with a pressurizer pressure of 1750 psia.

6. Text changed to reflect that the Frequency is performed periodically. This change is consistent with similar ISTS Bases changes as a result of incorporation of TSTF-425, "Relocate Surveillance Frequencies to Licensee Control - RITSTF Initiative 5b," into the ISTS.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.10, SPRAY ADDITIVE SYSTEM – UNIT 1 ONLY

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 11

ISTS Not Adopted

ISTS 3.6.7, SPRAY ADDITIVE SYSTEM (UNIT 2 ONLY)

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.7 Spray Additive System (Atmospheric and Dual)~~

~~LCO 3.6.7 The Spray Additive System shall be OPERABLE.~~

~~APPLICABILITY: MODES 1, 2, 3, and [4].~~

~~ACTIONS~~

~~CONDITION~~	~~REQUIRED ACTION~~	~~COMPLETION TIME~~
~~A. Spray Additive System inoperable.~~	~~A.1 Restore Spray Additive System to OPERABLE status.~~	~~72 hours~~
~~B. Required Action and associated Completion Time not met.~~	~~B.1 Be in MODE 3.~~ ~~AND~~ ~~B.2 Be in MODE 5.~~	~~6 hours~~ ~~84 hours~~

~~SURVEILLANCE REQUIREMENTS~~

~~SURVEILLANCE~~	~~FREQUENCY~~
~~SR 3.6.7.1 Verify each spray additive manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.~~	~~[31 days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~SR 3.6.7.2~~	~~Verify spray additive tank solution volume is ≥ [816] gal [90%] and ≤ [896] gal [100%].~~	~~[184 days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.7.3~~	~~Verify spray additive tank [N_2H_4] solution concentration is ≥ [33]% and ≤ [35]% by weight.~~	~~[184 days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.7.4~~	~~[Verify each spray additive pump develops a differential pressure of [100] psid on recirculation flow.~~	~~In accordance with the INSERVICE TESTING PROGRAM]~~
~~SR 3.6.7.5~~	~~Verify each spray additive automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~SR 3.6.7.6~~	~~[Verify spray additive flow [rate] from each solution's flow path.~~	~~[5 years~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]]~~

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.7, SPRAY ADDITIVE SYSTEM

1. ISTS 3.6.7, “Spray Additive System” is not being adopted for PSL Unit 2. The PSL Unit 2 technical specification requirements for the Iodine Removal System were eliminated with “Issuance of Amendment No. 201 Regarding Technical Specification Changes to Eliminate the Requirements of the Iodine Removal System,” dated November 20, 2019 (ADAMS Accession No. ML19248C238). Therefore, ISTS 3.6.7 is not included in the PSL Unit 2 ITS.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

~~B 3.6 CONTAINMENT SYSTEMS~~

~~B 3.6.7 Spray Additive System (Atmospheric and Dual)~~

~~BASES~~

~~BACKGROUND~~

~~The Spray Additive System is a subsystem of the Containment Spray System that assists in reducing the iodine fission product inventory in the containment atmosphere in the event of an accident such as a loss of coolant accident (LOCA).~~

~~The addition of a spray additive to the boric acid spray solution increases the pH of the spray solution and maintains the containment sump pH above 8.0 during the recirculation phase of an accident. An elevated pH is desired since it enhances the iodine removal capacity of the sprays and aids in the retention of iodine in the water in the containment sump.~~

~~The Spray Additive System consists of a single spray additive tank and two redundant 100% capacity trains. Each train contains a chemical addition pump, an injection valve, isolation valves, a flow meter, and a flow controller. Upon receipt of a containment spray actuation signal (CSAS), the chemical addition pumps start and the injection valves open in each redundant train. The spray additive is then injected into the Containment Spray System at the suction of the containment spray pumps at metered amounts corresponding to the individual containment spray pump discharge flow rate. The rate at which the spray additive is added is reduced when a recirculation actuation signal is generated and the Containment Spray System enters the recirculation mode of operation. The pH of the containment spray solution is maintained between 9.0 and 10.0 during the injection mode and between 8.0 and 9.0 in the recirculation mode. Upon reaching a Low-Low level in the spray chemical addition tank, the spray chemical addition pumps stop and the injection and isolation valves close (Ref. 1).~~

~~The Spray Additive System aids in reducing the iodine fission production inventory in the containment atmosphere.~~

~~APPLICABLE SAFETY ANALYSES~~

~~The Spray Additive System is essential to the effective removal of airborne iodine within containment following a Design Basis Accident (DBA).~~

~~Following the assumed release of radioactive materials into containment, the containment is assumed to leak at its design value following the accident.~~

~~BASES~~

~~APPLICABLE SAFETY ANALYSES (continued)~~

~~The DBA response time assumed for the Spray Additive System is the same as for the Containment Spray System and is discussed in the Bases for Specification 3.6.6, "Containment Spray and Cooling Systems."~~

~~The DBA analyses assume that one train of the Containment Spray System/Spray Additive System is inoperable and that the entire spray additive tank volume is added to the remaining Containment Spray System flow path.~~

~~During a LOCA, the iodine inventory released to the containment is considered to be released instantaneously and uniformly distributed in the containment free volume. The containment volume is made up of sprayed and unsprayed regions. The sprayed region is enveloped by direct spray and mixed by the dome air circulators and emergency fan coolers. Mixing between the sprayed and unsprayed regions is facilitated by the emergency fan coolers and condensation of steam by the sprays.~~

~~The Spray Additive System satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).~~

~~LCO~~

~~The Spray Additive System is necessary to reduce the release of radioactive material to the environment in the event of a DBA. To be considered OPERABLE, the volume and concentration of the spray additive solution must be sufficient to maintain the pH of the spray solution between [9.0 and 10.0] in the injection mode and [8.0 and 9.0] in the recirculation mode. This pH range maximizes the effectiveness of the iodine removal mechanism, without introducing conditions that may induce caustic stress corrosion cracking of mechanical components.~~

~~During a LOCA, one Spray Additive System train is capable of providing 100% of the required iodine removal capacity. To ensure at least one train is available in the event of the limiting single failure, both trains must be maintained in an OPERABLE status.~~

~~APPLICABILITY~~

~~In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment requiring the operation of the Spray Additive System. The Spray Additive System assists in reducing the iodine fission product inventory prior to release to the environment.~~

~~In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations in these MODES. Thus, the Spray Additive System is not required to be OPERABLE in MODES 5 and 6.~~

~~BASES~~

~~ACTIONS~~ ~~A.1~~

~~With the Spray Additive System inoperable, the system must be restored to OPERABLE status within 72 hours. The pH adjustment of the containment spray flow for corrosion protection and iodine removal enhancement are reduced in this condition. The Containment Spray System would still be available and would remove some iodine from the containment atmosphere in the event of a DBA. The 72 hour Completion Time takes into account the redundant flow path capabilities and the low probability of the worst case DBA occurring during this period.~~

~~B.1 and B.2~~

~~If the Spray Additive System cannot be restored to OPERABLE status within the required 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 6 hours and to MODE 5 within 84 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems. The extended interval to reach MODE 5 allows additional time for restoration of the Spray Additive System and is reasonable when considering the reduced pressure and temperature conditions in MODE 3 for the release of radioactive material from the Reactor Coolant System.~~

~~SURVEILLANCE REQUIREMENTS~~ ~~SR 3.6.7.1~~

~~Verifying the correct alignment of Spray Additive System manual, power operated, and automatic valves in the spray additive flow path provides assurance that the system is able to provide additive to the Containment Spray System in the event of a DBA. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these valves were verified to be in the correct position prior to locking, sealing, or securing. This SR does not require any testing or valve manipulation. Rather, it involves verification that those valves outside containment and capable of potentially being mispositioned are in the correct position.~~

~~[The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-------------------------------REVIEWER'S NOTE-------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~

~~SR 3.6.7.2~~

~~To provide effective iodine removal, the containment spray must be an alkaline solution. Since the refueling water tank contents are normally acidic, the volume of the spray additive tank must provide a sufficient volume of spray additive to adjust pH for all water injected. This SR is performed to verify the availability of sufficient hydrazine (N_2H_4) solution in the Spray Additive System. [The 184 day Frequency is based on the low probability of an undetected change in tank volume occurring during the SR interval (the tank is isolated during normal unit operations). Tank level is also indicated and alarmed in the control room, such that there is a high confidence that a substantial change in level would be detected.~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-------------------------------REVIEWER'S NOTE-------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SR 3.6.7.3~~

~~This SR provides verification of the N_2H_4 concentration in the spray additive tank and is sufficient to ensure that the spray solution being injected into containment is at the correct pH level. The concentration of N_2H_4 in the spray additive tank must be determined by chemical analysis. [The 184 day Frequency is sufficient to ensure that the concentration level of N_2H_4 in the spray additive tank remains within the established limits. This is based on the low likelihood of an uncontrolled change in concentration (the tank is normally isolated) and the probability that any substantial variance in tank volume will be detected.~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~

~~[SR 3.6.7.4~~

~~The chemical addition pump must be verified to provide the flow rate assumed in the accident analysis to the Containment Spray System. The Spray Additive System is not operated during normal operations. This prevents periodically subjecting systems, structures, and components within containment to a caustic spray solution. Therefore, this test must be performed on recirculation with the discharge flow path from each spray chemical addition pump aligned back to the spray additive tank. The differential pressure obtained by the pump on recirculation is analogous to the full spray additive flow provided to the Containment Spray System on an actual CSAS. The Frequency of this SR is in accordance with the INSERVICE TESTING PROGRAM and is sufficient to identify component degradation that may affect flow rate.]~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SR 3.6.7.5~~

~~This SR verifies that each automatic valve in the Spray Additive System flow path actuates to its correct position on a CSAS. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. [The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-------------------------------REVIEWER'S NOTE-------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~

~~[SR 3.6.7.6~~

~~To ensure that the correct pH level is established in the borated water solution provided by the Containment Spray System, the flow rate in the Spray Additive System is verified once per 5 years. This SR provides assurance that the correct amount of~~ $\cancel{N_2H_4}$ ~~will be metered into the flow path upon Containment Spray System initiation. [Due to the passive nature of the spray additive flow controls, the 5 year Frequency is sufficient to identify component degradation that may affect flow rate.~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]]~~

~~REFERENCES 1. FSAR, Section [ ].~~

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.7 BASES, SPRAY ADDITIVE SYSTEM

1. ISTS 3.6.7, "Spray Additive System" is not being adopted for PSL Unit 2. The PSL Unit 2 technical specification requirements for the Iodine Removal System were eliminated with "Issuance of Amendment No. 201 Regarding Technical Specification Changes to Eliminate the Requirements of the Iodine Removal System," dated November 20, 2019 (ADAMS Accession No. ML19248C238). Therefore, the Bases associated with ISTS 3.6.7 is not included in the PSL Unit 2 ITS Bases.

ISTS 3.6.9, HYDROGEN MIXING SYSTEM (HMS) (ATMOSPHERIC AND DUAL)

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.9 Hydrogen Mixing System (HMS) (Atmospheric and Dual)~~

~~LCO 3.6.9 [Two] HMS trains shall be OPERABLE.~~

~~APPLICABILITY: MODES 1 and 2.~~

~~ACTIONS~~

~~CONDITION~~	~~REQUIRED ACTION~~	~~COMPLETION TIME~~
~~A. One HMS train inoperable.~~	~~A.1 Restore HMS train to OPERABLE status.~~	~~30 days~~
~~B. [Two HMS trains inoperable.~~	~~B.1 Verify by administrative means that the hydrogen control function is maintained.~~	~~1 hour~~ ~~AND~~ ~~Once every 12 hours thereafter~~
	~~AND~~	
	~~B.2 Restore one HMS train to OPERABLE status.~~	~~7 days]~~
~~C. Required Action and associated Completion Time not met.~~	~~C.1 Be in MODE 3.~~	~~6 hours~~

~~SURVEILLANCE REQUIREMENTS~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~SR 3.6.9.1~~	~~Operate each HMS train for ≥ 15 minutes.~~	~~[92 days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.9.2~~	~~Verify each HMS train flow rate on slow speed is ≥ [37,000] cfm.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.9.3~~	~~Verify each HMS train starts on an actual or simulated actuation signal.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

1

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.9, HYDROGEN MIXING SYSTEM (HMS) (ATMOSPHERIC AND DUAL)

1. ISTS 3.6.9, “Hydrogen Mixing System (HMS) (Atmospheric and Dual)” is not being adopted because St. Lucie Plant (PSL) design does not include the HMS. The hydrogen mixing function is performed by ITS 3.6.6, “Containment Spray and Cooling System.” Therefore, ISTS 3.6.9 is not included in the PSL Unit 1 and 2 ITS.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

~~B 3.6 CONTAINMENT SYSTEMS~~

~~B 3.6.9 Hydrogen Mixing System (HMS) (Atmospheric and Dual)~~

~~BASES~~

~~BACKGROUND~~

~~The HMS reduces the potential for breach of containment due to a hydrogen oxygen reaction by providing a uniformly mixed post accident containment atmosphere, thereby minimizing the potential for local hydrogen burns due to a local pocket of hydrogen above the flammable concentration and giving the operator the capability of preventing the occurrence of a bulk hydrogen burn inside containment per 10 CFR 50.44, "Standards for Combustible Gas Control Systems in Light-Water-Cooled Reactors" (Ref. 1), and 10 CFR 50, GDC 41, "Containment Atmosphere Cleanup" (Ref. 2).~~

~~The post accident HMS is an Engineered Safety Feature and is designed to withstand a loss of coolant accident (LOCA) without loss of function. The system has two independent trains, each of which consists of two dome air circulation fans, motors, and controls. Each train is sized for [37,000] cfm. The two trains are initiated automatically on a containment cooling actuation signal (CCAS) or can be manually started from the control room. Each train is powered from a separate emergency power supply. Since each train can provide 100% of the mixing requirements, the system will provide its design function with a limiting single active failure.~~

~~The HMS accelerates the air mixing process between the upper dome space of the containment atmosphere during LOCA operations. It also prevents any hot spot air pockets during the containment cooling mode and avoids any hydrogen concentration in pocket areas.~~

~~Hydrogen mixing within the containment is accomplished by the Containment Spray System, the containment emergency fan coolers, and the containment internal structure design, which permits convective mixing and prevents entrapment. The HMS, operating in conjunction with the Containment Spray System and the emergency fan coolers, prevents localized accumulations of hydrogen from exceeding the flammability limit of 4.1 volume percent (v/o).~~

~~APPLICABLE SAFETY ANALYSES~~

~~The HMS mixes the containment atmosphere to provide a uniform hydrogen concentration.~~

~~Hydrogen may accumulate in containment following a LOCA as a result of:~~

~~BASES~~

~~APPLICABLE SAFETY ANALYSES (continued)~~

~~a. A metal steam reaction between the zirconium fuel rod cladding and the reactor coolant,~~

~~b. Radiolytic decomposition of water in the Reactor Coolant System (RCS) and the containment sump,~~

~~c. Hydrogen in the RCS at the time of the LOCA (i.e., hydrogen dissolved in the reactor coolant and hydrogen gas in the pressurizer vapor space), or~~

~~d. Corrosion of metals exposed to Containment Spray System and Emergency Core Cooling Systems solutions.~~

~~To evaluate the potential for hydrogen accumulation in containment following a LOCA, the hydrogen generation as a function of time following the initiation of the accident is calculated. Conservative assumptions recommended by Reference 3 are used to maximize the amount of hydrogen calculated.~~

~~The HMS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).~~

~~LCO~~

~~Two HMS trains must be OPERABLE, with power to each from an independent, safety related power supply. Each train typically consists of two fans with their own motors and controls and is automatically initiated by a CCAS.~~

~~Operation with at least one HMS train provides the mixing necessary to ensure uniform hydrogen concentration throughout containment.~~

~~APPLICABILITY~~

~~In MODES 1 and 2, the two HMS trains ensure the capability to prevent localized hydrogen concentrations above the flammability limit of 4.1 v/o in containment, assuming a worst case single active failure.~~

~~In MODE 3 or 4, both the hydrogen production rate and the total hydrogen produced after a LOCA would be less than that calculated for the DBA LOCA. Also, because of the limited time in these MODES, the probability of an accident requiring the HMS is low. Therefore, the HMS is not required in MODE 3 or 4.~~

~~In MODES 5 and 6, the probability and consequences of a LOCA or main steam line break are low due to the pressure and temperature limitations of these MODES. Therefore, the HMS is not required in these MODES.~~

~~ACTIONS~~ ~~A.1~~

~~With one HMS train inoperable, the inoperable train must be restored to OPERABLE status within 30 days. The 30 day Completion Time is based on the availability of the other HMS train, the small probability of a LOCA or SLB occurring (that would generate an amount of hydrogen that exceeds the flammability limit), the amount of time available after a LOCA or SLB (should one occur) for operator action to prevent hydrogen accumulation from exceeding the flammability limit, and the availability of the Containment Spray System and Hydrogen Purge System.~~

~~B.1 and B.2~~

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~This Condition is only allowed for units with an alternate hydrogen control system acceptable to the technical staff.~~
~~---~~

~~With two HMS inoperable, the ability to perform the hydrogen control function via alternate capabilities must be verified by administrative means within 1 hour. The alternate hydrogen control capabilities are provided by [the containment Hydrogen Purge System/Hydrogen Ignitor System/HMS/Containment Air Dilution System/Containment Inerting System]. The 1 hour Completion Time allows a reasonable period of time to verify that a loss of hydrogen control function does not exist.~~

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~The following is to be used if a non-Technical Specification alternate hydrogen control function is used to justify this Condition. In addition, the alternate hydrogen control system capability must be verified every 12 hours thereafter to ensure its continued availability.~~
~~---~~

~~[Both] the [initial] verification [and all subsequent verifications] may be performed as an administrative check, by examining logs or other information to determine the availability of the alternate hydrogen control system. It does not mean to perform the Surveillances needed to demonstrate OPERABILITY of the alternate hydrogen control system. If the ability to perform the hydrogen control function is maintained, continued operation is permitted with two HMS trains inoperable for up to 7 days. Seven days is a reasonable time to allow two HMS trains to be inoperable because the hydrogen control function is maintained and because of the low probability of the occurrence of a LOCA that would generate hydrogen in the amounts capable of exceeding the flammability limit.~~

~~BASES~~

~~ACTIONS (continued)~~

~~C.1~~

~~If an inoperable HMS train cannot be restored to OPERABLE status within the required 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 6 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems.~~

~~SURVEILLANCE REQUIREMENTS~~

~~SR 3.6.9.1~~

~~Operating each HMS train for ≥ 15 minutes ensures that the train is OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan and/or motor failure, or excessive vibration can be detected for corrective action. [The 92 day Frequency is consistent with INSERVICE TESTING PROGRAM Surveillance Frequencies, operating experience, the known reliability of the fan motors and controls, and the two train redundancy available.~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~

~~SR 3.6.9.2~~

~~Verifying that each HMS train flow rate on slow speed is ≥ [37,000] cfm ensures that each train is capable of maintaining localized hydrogen concentrations below the flammability limit. [The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~

~~SR 3.6.9.3~~

~~This SR ensures that the HMS responds properly to a CCAS. [The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~

~~REFERENCES~~

1. ~~10 CFR 50.44.~~
2. ~~10 CFR 50, Appendix A, GDC 41.~~
3. ~~Regulatory Guide 1.7, Revision [1].~~

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.9 BASES, HYDROGEN MIXING SYSTEM (HMS) (ATMOSPHERIC AND DUAL)

1. ISTS 3.6.9, "Hydrogen Mixing System (HMS) (Atmospheric and Dual)" is not being adopted because St. Lucie Plant (PSL) design does not include the HMS. The hydrogen mixing function is performed by ITS 3.6.6, "Containment Spray and Cooling System." Therefore, the Bases associated with ISTS 3.6.9 is not included in the PSL Unit 1 and Unit 2 ITS Bases.

ISTS 3.6.10, IODINE CLEANUP SYSTEM (ICS) (ATMOSPHERIC AND DUAL)

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.10 Iodine Cleanup System (ICS) (Atmospheric and Dual)~~

~~LCO 3.6.10 Two ICS trains shall be OPERABLE.~~

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

~~ACTIONS~~

~~CONDITION~~	~~REQUIRED ACTION~~	~~COMPLETION TIME~~
~~A. One ICS train inoperable.~~	~~A.1 Restore ICS train to OPERABLE status.~~	~~7 days~~
~~B. ------------ NOTE ----------- Not applicable when second ICS train intentionally made inoperable. -----------------------------~~ ~~Two ICS trains inoperable.~~	~~B.1 Verify at least one train of containment spray is OPERABLE.~~ ~~AND~~ ~~B.2 Restore at least one ICS train to OPERABLE status.~~	~~1 hour~~ ~~24 hours~~
~~C. Required Action and associated Completion Time not met.~~	~~C.1 Be in MODE 3.~~ ~~AND~~ ~~C.2 Be in MODE 5.~~	~~6 hours~~ ~~36 hours~~

1

~~SURVEILLANCE REQUIREMENTS~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~SR 3.6.10.1~~	~~Operate each ICS train for ≥ 15 continuous minutes [with heaters operating].~~	~~[31 days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.10.2~~	~~Perform required ICS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).~~	~~In accordance with the VFTP~~
~~SR 3.6.10.3~~	~~Verify each ICS train actuates on an actual or simulated actuation signal, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.10.4~~	~~[Verify each ICS filter bypass damper can be opened, except for dampers that are locked, sealed, or otherwise secured in the open position.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]]~~

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.10, IODINE CLEANUP SYSTEM (ICS) (ATMOSPERIC AND DUAL)

1. ISTS 3.6.10, “Iodine Cleanup System (ICS) (Atmospheric and Dual)” is not being adopted. The iodine removal function is performed by ITS 3.6.6, “Containment Spray and Cooling System” for PSL Unit 1. The PSL Unit 2 technical specification requirements for the Iodine Removal System were eliminated with “Issuance of Amendment No. 201 Regarding Technical Specification Changes to Eliminate the Requirements of the Iodine Removal System,” dated November 20, 2019 (ADAMS Accession No. ML19248C238). Therefore, ISTS 3.6.10 is not included in the PSL Unit 1 and 2 ITS.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

~~B 3.6 CONTAINMENT SYSTEMS~~

~~B 3.6.10 Iodine Cleanup System (ICS) (Atmospheric and Dual)~~

~~BASES~~

~~BACKGROUND~~

~~The ICS is provided per GDC 41, "Containment Atmosphere Cleanup," GDC 42, "Inspection of Containment Atmosphere Cleanup Systems," and GDC 43, "Testing of Containment Atmosphere Cleanup Systems" (Ref. 1), to reduce the concentration of fission products released to the containment atmosphere following a postulated accident. The ICS would function together with the Containment Spray and Cooling systems following a Design Basis Accident (DBA) to reduce the potential release of radioactive material, principally iodine, from the containment to the environment.~~

~~The ICS consists of two 100% capacity separate, independent, and redundant trains. Each train includes a heater, [cooling coils,] a prefilter, a moisture separator, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of radioiodines, and a fan. Ductwork, valves and/or dampers, and instrumentation also form part of the system. The moisture separators function to reduce the moisture content of the airstream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case of failure of the main HEPA filter bank. Only the upstream HEPA filter and the charcoal adsorber section are credited in the analysis. The system initiates filtered recirculation of the containment atmosphere following receipt of a containment isolation actuation signal. The system design is described in Reference 2.~~

~~The primary purpose of the heaters is to ensure that the relative humidity of the airstream entering the charcoal adsorbers is maintained below 70%, which is consistent with the assigned iodine and iodide removal efficiencies as per Regulatory Guide 1.52 (Ref. 3).~~

~~The moisture separator is included for moisture (free water) removal from the gas stream. Heaters are used to heat the gas stream, which lowers the relative humidity. Both the moisture separator and heater are important to the effectiveness of the charcoal adsorbers.~~

~~Two ICS trains are provided to meet the requirement for separation, independence, and redundancy. Each ICS train is powered from a separate Engineered Safety Features bus and is provided with a separate power panel and control panel. [Service water is required to supply cooling water to the cooling coils.]~~

~~BASES~~

~~APPLICABLE SAFETY ANALYSES~~

~~The DBAs that result in a release of radioactive iodine within containment are a loss of coolant accident (LOCA), a main steam line break (MSLB), or a control element assembly (CEA) ejection accident. In the analysis for each of these accidents, it is assumed that adequate containment leak tightness is intact at event initiation to limit potential leakage to the environment. Additionally, it is assumed that the amount of radioactive iodine release is limited by reducing the iodine concentration in the containment atmosphere.~~

~~The ICS design basis is established by the consequences of the limiting DBA, which is a LOCA. The accident analysis (Ref. 4) assumes that only one train of the ICS is functional due to a single failure that disables the other train. The accident analysis accounts for the reduction in airborne radioactive iodine provided by the remaining one train of this filtration system.~~

~~The ICS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).~~

~~LCO~~

~~Two separate, independent, and redundant trains of the ICS are required to ensure that at least one is available, assuming a single failure coincident with a loss of offsite power.~~

~~APPLICABILITY~~

~~In MODES 1, 2, 3, and 4, iodine is a fission product that can be released from the fuel to the reactor coolant as a result of a DBA. The DBAs that can cause a failure of the fuel cladding are a LOCA, MSLB, and CEA ejection accident. Because these accidents are considered credible accidents in MODES 1, 2, 3, and 4, the ICS must be operable in these MODES to ensure the reduction in iodine concentration assumed in the accident analysis.~~

~~In MODES 5 and 6, the probability and consequences of a LOCA are low due to the pressure and temperature limitations of these MODES. The ICS is not required in these MODES to remove iodine from the containment atmosphere.~~

~~ACTIONS~~

~~A.1~~

~~With one ICS train inoperable, the inoperable train must be restored to OPERABLE status within 7 days. The components in this degraded condition are capable of providing 100% of the iodine removal needs after a DBA. The 7 day Completion Time is based on consideration of such factors as:~~

~~a. The availability of the OPERABLE redundant ICS train,~~

~~BASES~~

~~ACTIONS (continued)~~

~~b. The fact that, even with no ICS train in operation, almost the same amount of iodine would be removed from the containment atmosphere through absorption by the Containment Spray System, and~~

~~c. The fact that the Completion Time is adequate to make most repairs.~~

~~B.1 and B.2~~

~~If two ICS trains are inoperable, at least one ICS train must be returned to OPERABLE status within 24 hours. The Condition is modified by a Note stating it is not applicable if the second ICS train is intentionally declared inoperable. The Condition does not apply to voluntary removal of redundant systems or components from service. The Condition is only applicable if one train is inoperable for any reason and the second train is discovered to be inoperable, or if both trains are discovered to be inoperable at the same time. In addition, at least one train of containment spray must be verified to be OPERABLE within 1 hour. In the event of an accident, containment spray reduces the potential radioactive release from the containment, which reduces the consequences of the inoperable ICS trains. The Completion Time is based on Reference 5 which demonstrated that the 24 hour Completion Time is acceptable based on the infrequent use of the Required Actions and the small incremental effect on plant risk.~~

~~C.1 and C.2~~

~~If the ICS train(s) cannot be restored to OPERABLE status within the required 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 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.~~

~~SURVEILLANCE REQUIREMENTS~~

~~SR 3.6.10.1~~

~~Operating each ICS train for ≥ 15 minutes ensures that all trains are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. [The 31 day Frequency was developed considering the known reliability of fan motors and controls, the two train redundancy available, and the iodine removal capability of the Containment Spray System independent of the ICS.~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~

~~SR 3.6.10.2~~

~~This SR verifies that the required ICS filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.~~

~~SR 3.6.10.3~~

~~The automatic startup test verifies that both trains of equipment start upon receipt of an actual or simulated test signal. The SR excludes automatic dampers and valves that are locked, sealed, or otherwise secured in the actuated position. The SR does not apply to dampers or valves that are locked, sealed, or otherwise secured in the actuated position since the affected dampers or valves were verified to be in the actuated position prior to being locked, sealed, or otherwise secured. Placing an automatic valve or damper in a locked, sealed, or otherwise secured position requires an assessment of the OPERABILITY of the system or any supported systems, including whether it is necessary for the valve or damper to be repositioned to the non-actuated position to support the accident analysis. Restoration of an automatic valve or damper to the non-actuated position requires verification that the SR has been met within its required Frequency. [The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. Furthermore, the Frequency was developed considering that the system equipment OPERABILITY is demonstrated on a 31 day Frequency by SR 3.6.10.1.~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~------------------------------REVIEWER'S NOTE------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---~~]

[~~SR 3.6.10.4~~

~~The ICS filter bypass dampers are tested to verify OPERABILITY. The dampers are in the bypass position during normal operation and must reposition for accident operation to draw air through the filters. The SR excludes automatic dampers that are locked, sealed, or otherwise secured in the open position. The SR does not apply to dampers that are locked, sealed, or otherwise secured in the open position since the affected dampers were verified to be in the open position prior to being locked, sealed, or otherwise secured. Placing an automatic damper in a locked, sealed, or otherwise secured position requires an assessment of the OPERABILITY of the system or any supported systems, including whether it is necessary for the damper to be closed to support the accident analysis. Restoration of an automatic damper to the closed position requires verification that the SR has been met within its required Frequency. [The [18] month Frequency is considered to be acceptable based on the damper reliability and design, the mild environmental conditions in the vicinity of the dampers, and the fact that operating experience has shown that the dampers usually pass the Surveillance when performed at the [18] month Frequency.~~

~~OR~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~-----]~~

~~REFERENCES~~

1. ~~10 CFR 50, Appendix A, GDC 41, GDC 42, and GDC 43.~~
2. ~~FSAR, Section [ ].~~
3. ~~Regulatory Guide 1.52, Revision [2].~~
4. ~~FSAR, Section [ ].~~
5. ~~WCAP-16125-NP-A, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," Revision 2, August 2010.~~

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.10 BASES, IODINE CLEANUP SYSTEM (ICS) (ATMOSPERIC AND DUAL)

1. ISTS 3.6.10, “Iodine Cleanup System (ICS) (Atmospheric and Dual)” is not being adopted. The iodine removal function is performed by ITS 3.6.6, “Containment Spray and Cooling System” for PSL Unit 1. The PSL Unit 2 technical specification requirements for the Iodine Removal System were eliminated with “Issuance of Amendment No. 201 Regarding Technical Specification Changes to Eliminate the Requirements of the Iodine Removal System,” dated November 20, 2019 (ADAMS Accession No. ML19248C238). Therefore, the Bases associated with ISTS 3.6.10 is not included in the PSL Unit 1 and Unit 2 ITS Bases.

ISTS 3.6.13, CONTAINMENT SUMP

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.13 Containment Sump~~

~~LCO 3.6.13 [The][Two] containment sump[s] shall be OPERABLE.~~

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

~~ACTIONS~~

~~CONDITION~~	~~REQUIRED ACTION~~	~~COMPLETION TIME~~
~~A. [One or more] containment sump[s] inoperable due to containment accident generated and transported debris exceeding the analyzed limits.~~	~~A.1 Initiate action to mitigate containment accident generated and transported debris.~~	~~Immediately~~
	~~AND~~	
	~~A.2 Perform SR 3.4.13.1.~~	~~Once per 24 hours~~
	~~AND~~	
	~~A.3 Restore the containment sump[s] to OPERABLE status.~~	~~90 days~~

~~ACTIONS (continued)~~

~~CONDITION~~	~~REQUIRED ACTION~~	~~COMPLETION TIME~~
~~B. [One or more] containment sump[s] inoperable for reasons other than Condition A.~~	~~B.1 --------------NOTES------------~~ ~~1. Enter applicable Conditions and Required Actions of LCO 3.5.2, "ECCS - Operating," and LCO 3.5.3, "ECCS - Shutdown," for emergency core cooling trains made inoperable by the containment sump[s].~~ ~~2. Enter applicable Conditions and Required Actions of LCO 3.6.6, "Containment Spray and Cooling Systems," for containment spray trains made inoperable by the containment sump[s].~~ ~~-----------------------------------~~ ~~Restore the containment sump[s] to OPERABLE status.~~	~~[72 hours]~~ ~~[OR~~ ~~In accordance with the Risk Informed Completion Time Program]~~
~~C. Required Action and associated Completion Time not met.~~	~~C.1 Be in MODE 3.~~ ~~AND~~ ~~C.2 Be in MODE 5.~~	~~6 hours~~ ~~36 hours~~

~~SURVEILLANCE REQUIREMENTS~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~SR 3.6.13.1~~	~~Verify, by visual inspection, the containment sump[s] does not show structural damage, abnormal corrosion, or debris blockage.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.13, CONTAINMENT SUMP

1. ISTS 3.6.13, “Containment Sump” is not being adopted. The Containment Sump function is performed by ITS 3.5.2, “ECCS – Operating”, ITS 3.5.3, “ECCS – Shutdown” and ITS 3.6.6, “Containment Spray and Cooling System” for PSL Unit 1 and Unit 2. Therefore, ISTS 3.6.13 is not included in the PSL Unit 1 and 2 ITS.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

~~B 3.6 CONTAINMENT SYSTEMS~~

~~B 3.6.13 Containment Sump~~

~~BASES~~

~~BACKGROUND~~

~~----------------------------------- REVIEWER'S NOTE -----------------------------------~~
~~Some plant designs have more than one containment sump. LCO 3.6.13 provides the option of specifying one or two containment sumps. The Bases specify when to discuss differences between one or more sump designs by providing bracketed information. However, for clarity, all references to the containment sump are not provided with plural bracketed alternatives. Licensees adopting this Bases section for plants with two or more containment sumps should make the appropriate changes to the Bases to reflect the plant design.~~
~~---~~

~~The containment sump provides a borated water source to support recirculation of coolant from the containment sump for residual heat removal, emergency core cooling, containment cooling, and [containment atmosphere cleanup] during accident conditions.~~

~~The containment sump supplies both trains of the Emergency Core Cooling System (ECCS) and the Containment Spray System (CSS) during any accident that requires recirculation of coolant from the containment sump. The recirculation mode is initiated when the pump suction is transferred to the containment sump on low Refueling Water Tank (RWT) level, which ensures the containment sump has enough water to supply the net positive suction head to the ECCS and CSS pumps. [The use of a single containment sump to supply both trains of the ECCS and CSS is acceptable since the containment sump is a passive component, and passive failures are not required to be assumed to occur coincident with Design Basis Events.][Describe the design of plants with two or more containment sumps.]~~

~~The containment sump contains strainers to limit the quantity of the debris materials from entering the sump suction piping. Debris accumulation on the strainers can lead to undesirable hydraulic effects including air ingestion through vortexing or deaeration, and reduced net positive suction head (NPSH) at pump suction piping.~~

~~BASES~~

~~BACKGROUND (continued)~~

~~While the majority of debris accumulates on the strainers, some fraction penetrates the strainers and is transported to downstream components in the ECCS, CSS, and the Reactor Coolant System (RCS). Debris that penetrates the strainer can result in wear to the downstream components, blockages, or reduced heat transfer across the fuel cladding. Excessive debris in the containment sump water source could result in insufficient recirculation of coolant during the accident, or insufficient heat removal from the core during the accident.~~

~~APPLICABLE SAFETY ANALYSIS~~

~~During all accidents that require recirculation, the containment sump provides a source of borated water to the ECCS and CSS pumps. As such, it supports residual heat removal, emergency core cooling, containment cooling, and [containment atmosphere cleanup] during an accident. It also provides a source of negative reactivity (Ref. 1). The design basis transients and applicable safety analyses concerning each of these systems are discussed in the Applicable Safety Analyses section of B 3.5.2, "ECCS - Operating," B 3.5.3, "ECCS - Shutdown," and B 3.6.6, "Containment Spray and Cooling Systems."~~

~~FSAR Section X.XX (Ref. 2) describes evaluations that confirm long-term core cooling is assured following any accident that requires recirculation from the containment sump.~~

~~The containment sump satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).~~

~~LCO~~

~~----------------------------- REVIEWER'S NOTE -----------------------------~~
~~The containment sump description should include all design features credited in the containment debris analysis.~~
~~---~~

~~[The][Two] containment sump is required to ensure a source of borated water to support ECCS and CSS OPERABILITY. A containment sump consists of the containment drainage flow paths, [design features upstream of the containment sump that are credited in the containment debris analysis,] the containment sump strainers, the pump suction trash racks, and the inlet to the ECCS and CSS piping. An OPERABLE containment sump has no structural damage or abnormal corrosion that could prevent recirculation of coolant and will not be restricted by containment accident generated and transported debris.~~

~~LCO (continued)~~

~~Containment accident generated and transported debris consists of the following:~~

~~a. Accident generated debris sources - Insulation, coatings, and other materials which are damaged by the high-energy line break (HELB) and transported to the containment sump. This includes materials within the HELB zone of influence and other materials (e.g., unqualified coatings) that fail due to the post-accident containment environment following the accident;~~

~~b. Latent debris sources – Pre-existing dirt, dust, paint chips, fines or shards of insulation, and other materials inside containment that do not have to be damaged by the HELB to be transported to the containment sump; and~~

~~c. Chemical product debris sources – Aluminum, zinc, carbon steel, copper, and non-metallic materials such as paints, thermal insulation, and concrete that are susceptible to chemical reactions within the post-accident containment environment leading to corrosion products that are generated within the containment sump pool or are generated within containment and transported to the containment sump.~~

~~Containment debris limits are defined in FSAR Section X.XX (Ref. 2).~~

~~APPLICABILITY~~

~~In MODES 1, 2, 3, and 4, containment sump OPERABILITY requirements are dictated by the ECCS and CSS OPERABILITY requirements. Since both the ECCS and the CSS must be OPERABLE in MODES 1, 2, 3, and 4, the containment sump must also be OPERABLE to support their operation.~~

~~In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Thus, the containment sump is not required to be OPERABLE in MODES 5 or 6.~~

~~ACTIONS~~

~~A.1, A.2, and A.3~~

~~Condition A is applicable when there is a condition which results in containment accident generated and transported debris exceeding the analyzed limits. Containment debris limits are defined in FSAR Section X.XX (Ref. 2).~~

~~ACTIONS (continued)~~

~~Immediate action must be initiated to mitigate the condition. Examples of mitigating actions are:~~

- ~~Removing the debris source from containment or preventing the debris from being transported to the containment sump;~~
- ~~Evaluating the debris source against the assumptions in the analysis;~~
- ~~Deferring maintenance that would affect availability of the affected systems and other LOCA mitigating equipment;~~
- ~~Deferring maintenance that would affect availability of primary defense-in-depth systems, such as containment coolers;~~
- ~~Briefing operators on LOCA debris management actions; or~~
- ~~Applying an alternative method to establish new limits.~~

~~While in this condition, the RCS water inventory balance, SR 3.4.13.1, must be performed at an increased Frequency of once per 24 hours. An unexpected increase in RCS leakage could be indicative of an increased potential for an RCS pipe break, which could result in debris being generated and transported to the containment sump. The more frequent monitoring allows operators to act in a timely fashion to minimize the potential for an RCS pipe break while the containment sump is inoperable.~~

~~[For the purposes of applying LCO 3.0.6 and the Safety Function Determination Program while in Condition A, the [two] containment sumps are considered a single support system for all ECCS and CSS trains because containment accident generated and transported debris issues that would render one sump inoperable would render all of the sumps inoperable.]~~

~~The inoperable containment sump must be restored to OPERABLE status in 90 days. A 90-day Completion Time is reasonable for emergent conditions that involve debris in excess of the analyzed limits that could be generated and transported to the containment sump under accident conditions. The likelihood of an initiating event in the 90-day Completion Time is very small and there is margin the associated analyses. The mitigating actions of Required Action A.1 provide additional assurance that the effects of debris in excess of the analyzed limits will be mitigated during the Completion Time.~~

~~ACTIONS (continued)~~

~~B.1~~

~~------------------------------------- Reviewer's Note -----------------------------------~~
~~The Required Action B.1 Completion Time should be the same as the LCO 3.6.6 Completion Time for a single inoperable CSS train.~~
~~---~~

~~When the containment sump is inoperable for reasons other than Condition A, such as blockage, structural damage, or abnormal corrosion that could prevent recirculation of coolant, it must be restored to OPERABLE status within [72 hours]. The [72 hour] Completion Time takes into account the reasonable time for repairs, and low probability of an accident that requires the containment sump occurring during this period. [Alternately, a Completion Time can be determined in accordance with the Risk Informed Completion Time Program.]~~

~~Required Action B.1 is modified by two Notes. The first Note indicates that the applicable Conditions and Required Actions of LCO 3.5.2, "ECCS - Operating," and LCO 3.5.3, "ECCS - Shutdown," should be entered if an inoperable containment sump results in an inoperable ECCS train. The second Note indicates that the applicable Conditions and Required Actions of LCO 3.6.6, "Containment Spray and Cooling Systems," should be entered if an inoperable containment sump results in an inoperable CSS train. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components.~~

~~C.1 and C.2~~

~~If the containment sump cannot be restored to OPERABLE status 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 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.~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS~~

~~SR 3.6.13.1~~

~~Periodic inspections are performed to verify the containment sump does not show current or potential debris blockage, structural damage, or abnormal corrosion to ensure the operability and structural integrity of the containment sump (Ref. 1).~~

~~[The 18 month Frequency is based on the need to perform this Surveillance during a refueling outage, because of the need to enter containment. This Frequency is sufficient to detect any indication of structural damage, abnormal corrosion, or debris blockage of the containment sump.~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~

~~REFERENCES~~

~~1. FSAR, Chapter [6] and Chapter [15].~~

~~2. FSAR, Section [X.XX], [Sump Debris Evaluation].~~

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.13 BASES, CONTAINMENT SUMP

1. ISTS 3.6.13, “Containment Sump” is not being adopted. The containment sump function is performed by ITS 3.5.2, “ECCS – Operating”, ITS 3.5.3, “ECCS – Shutdown” and ITS 3.6.6, “Containment Spray and Cooling System” for PSL Unit 1 and Unit 2. Therefore, the Bases associated with ISTS 3.6.10 is not included in the PSL Unit 1 and Unit 2 ITS Bases.