VOLUME 11

CNP UNITS 1 AND 2
IMPROVED TECHNICAL
SPECIFICATIONS CONVERSION

ITS SECTION 3.6
CONTAINMENT SYSTEMS

Revision 0

LIST OF ATTACHMENTS

ATTACHMENT 1

ITS 3.6.1, Containment

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

ITS 3.6.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT ~~INTEGRITY~~ OPERABILITY

LIMITING CONDITION FOR OPERATION

LCO 3.6.1 3.6.1.1 Primary ~~CONTAINMENT~~ ~~INTEGRITY~~ shall be maintained. A.2

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION: OPERABILITY

ACTION A Without primary ~~CONTAINMENT~~ ~~INTEGRITY~~, restore ~~CONTAINMENT~~ ~~INTEGRITY~~ within one hour or be
ACTION B in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. A.2

SURVEILLANCE REQUIREMENTS OPERABILITY A.2

4.6.1.1 Primary ~~CONTAINMENT~~ ~~INTEGRITY~~ shall be demonstrated:

~~a. At least once per 31 days by verifying that:~~ L.1

1. 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 values that are open under administrative control as permitted by Specification 3.6.3.1, and See ITS 3.6.3

~~2. All equipment hatches are closed~~ ~~and sealed.~~ L.1 L.2

~~b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3.~~ A.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. See ITS 3.6.3

ITS 3.6.1

A.1

ITS

DEFINITIONS

REPORTABLE EVENT

1.7 A REPORTABLE EVENT shall be any of those conditions specified in 10 CFR 50.73.

See ITS Chapter 1.0

CONTAINMENT INTEGRITY

1.8 CONTAINMENT INTEGRITY shall exist when:

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

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

b. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administrative control as permitted by Specification 3.6.3.1.

LA.1

1.8.2 All equipment hatches are closed and sealed.

L.2

1.8.3 Each air lock is in compliance with the requirements of Specification 3.6.1.3.

See ITS 3.6.2

SR 3.6.1.1 1.8.4 The containment leakage rates are within the limits of Specification 3.6.1.2

CHANNEL CALIBRATION

1.9 A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the *CHANNEL FUNCTIONAL TEST*. *The CHANNEL* CALIBRATION may be performed by any series of sequential, overlapping or total channel steps such that the entire channel is calibrated.

See ITS Chapter 1.0

CHANNEL CHECK

1.10 A CHANNEL CHECK shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

LCO 3.6.1 3.6.1.2 Containment leakage rates shall be limited to: A.2

a. An overall integrated leakage rate of $\leq L_a$, 0.25 percent by weight of the containment air per 24 hours at P_a, 12.0 psig, and

b. A combined leakage rate of $\leq 0.60\ L_a$ for all penetrations and valves subject to Types B and C tests when pressurized to P_a.

See ITS 5.5

APPLICABILITY: MODES 1, 2, 3 and 4.

Add proposed ACTIONS A and B A.4

ACTION:

With either (a) the measured overall integrated containment leakage rate exceeding $0.75\ L_a$, or (b) with the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding $0.60\ L_a$, restore the overall integrated leakage rate to $\leq 0.75\ L_a$ and the combined leakage rate for all penetrations and valves subject to Types B and C tests to $\leq 0.60\ L_a$ prior to increasing the Reactor Coolant System temperature above 200°F.

SURVEILLANCE REQUIREMENTS

the Containment Leakage Rate Testing Program A.5

SR 3.6.1.1 4.6.1.2 Perform leakage rate testing in accordance with 10 CFR 50 Appendix J Option B, except as modified by NRC-approved exemptions, and Regulatory Guide 1.163, dated September 1995. See Notes 1 and 2.

See ITS 5.5

a. Each containment air lock shall be verified to be in compliance with the requirements of Specification 3.6.1.3.

A.5

b. The provisions of Specification 4.0.2 are not applicable.

See ITS 5.5

A.5

Notes:

1 A one-time exception to the requirement to perform post-modification Type A testing is allowed for the steam generators and associated piping, as components of the containment barrier. For this case, ASME Section XI leak testing will be used to verify the leak tightness of the repaired or modified portions of the containment barrier. Entry into MODES 3 and 4 following the extended outage that commenced in 1997 may be made to perform this testing.

See ITS 5.5

2 The Type A testing frequency specified in NEI 94-01, Revision 0, Paragraph 9.2.3, as "...at least once per 10 years based on acceptable performance history" is modified to be "...at least once per 15 years based on acceptable performance history." This change applies only to the interval following the Type A test performed in October 1992.

Attachment 1, Volume 11, Rev. 0, Page 7 of 494

ITS

A.1

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Attachment 1, Volume 11, Rev. 0, Page 8 of 494

ITS 3.6.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

CONTAINMENT STRUCTURAL INTEGRITY

LIMITING CONDITION FOR OPERATION

LCO 3.6.1 3.6.1.6 The structural integrity of the containment shall be maintained at a level consistent with the acceptance criteria in Specification 4.6.1.6. A.2

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION: Add proposed ACTIONS A and B A.4

~~With the structural integrity of the containment 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 3.6.1.1 4.6.1.6 The structural integrity of the containment structure and steel liner shall be determined in accordance with ~~10 CFR 50 Appendix J Option B and Regulatory Guide 1.163, dated September 1995.~~ the Containment Leakage Rate Testing Program A.5

ITS 3.6.1

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT ~~INTEGRITY~~ OPERABILITY

LIMITING CONDITION FOR OPERATION

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

APPLICABILITY: MODES 1, 2, 3 and 4.

A.2

ACTION:

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

OPERABILITY

A.2

SURVEILLANCE REQUIREMENTS

OPERABILITY A.2

4.6.1.1 Primary ~~CONTAINMENT~~ ~~INTEGRITY~~ shall be demonstrated:

~~a. At least once per 31 days by verifying that:~~ L.1

1. 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 under administrative control as permitted by Specification 3.6.3.1, and

See ITS 3.6.3

L.1

~~2. All equipment hatches are closed and sealed.~~ L.2

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

See ITS 3.6.3

ITS 3.6.1

A.1

ITS

DEFINITIONS

REPORTABLE EVENT

1.7 A REPORTABLE EVENT shall be any of those conditions specified in 10 CFR 50.73.

See ITS Chapter 1.0

CONTAINMENT INTEGRITY

1.8 CONTAINMENT INTEGRITY shall exist when:

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

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

b. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administrative control as permitted by Specification 3.6.3.1.

LA.1

1.8.2 All equipment hatches are closed and sealed,

L.2

1.8.3 Each air lock is in compliance with the requirements of Specification 3.6.1.3,

See ITS 3.6.2

SR 3.6.1.1 1.8.4 The containment leakage rates are within the limits of Specification 3.6.1.2, and

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

LA.1

CHANNEL CALIBRATION

1.9 A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the CHANNEL FUNCTIONAL TEST. The CHANNEL CALIBRATION may be performed by any series of sequential, overlapping or total channel steps such that the entire channel is calibrated.

CHANNEL CHECK

1.10 A CHANNEL CHECK shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

See ITS Chapter 1.0

ITS 3.6.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

LCO 3.6.1 3.6.1.2 Containment leakage rates shall be limited to: A.2

a. An overall integrated leakage rate of ≤ L_a, 0.25 percent by weight of the containment air per 24 hours at P_a, 12 psig, and

b. A combined leakage rate of ≤ 0.60 L_a for all penetrations and valves subject to Types B and C tests when pressurized to P_a.

See ITS 5.5

APPLICABILITY: MODES 1, 2, 3 and 4.

Add proposed ACTIONS A and B A.4

ACTION:

~~With either (a) the measured overall integrated containment leakage rate exceeding 0.75 L_a, or (b) with the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding 0.60 L_a, restore the overall integrated leakage rate to ≤ 0.75 L_a and the combined leakage rate for all penetrations and valves subject to Types B and C tests to ≤ 0.60 L_a prior to increasing the Reactor Coolant System temperature above 200°F.~~

SURVEILLANCE REQUIREMENTS

the Containment Leakage Rate Testing Program A.5

SR 3.6.1.1 4.6.1.2 Perform leakage rate testing in accordance with 10 CFR 50 Appendix J Option B, except as modified by NRC-approved exemptions, and Regulatory Guide 1.163, dated September 1995. See Note 1.

See ITS 5.5

a. Each containment air lock shall be verified to be in compliance with the requirements of Specification 3.6.1.3.

A.5

b. The provisions of Specification 4.0.2 are not applicable.

See ITS 5.5

A.5

Notes:

1 The Type A testing frequency specified in NEI 94-01, Revision 0, Paragraph 9.2.3, as "...at least once per 10 years based on acceptable performance history" is modified to be "...at least once per 15 years based on acceptable performance history." This change applies only to the interval following the Type A test performed in May 1992.

See ITS 5.5

Attachment 1, Volume 11, Rev. 0, Page 12 of 494

ITS

A.1

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Attachment 1, Volume 11, Rev. 0, Page 13 of 494

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

CONTAINMENT STRUCTURAL INTEGRITY

LIMITING CONDITION FOR OPERATION

LCO 3.6.1 3.6.1.6 The structural integrity of the containment shall be maintained at a level consistent with the acceptance criteria in Specification 4.6.1.6. A.2

APPLICABILITY: MODES 1, 2, 3 and 4.

Add proposed ACTIONS A and B A.4

ACTION:

~~With the structural integrity of the containment 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 3.6.1.1 4.6.1.6 The structural integrity of the containment structure and steel liner shall be determined in accordance with ~~10 CFR 50 Appendix J Option B and Regulatory Guide 1.163, dated September 1995.~~

the Containment Leakage Rate Testing Program A.5

Attachment 1, Volume 11, Rev. 0, Page 14 of 494

DISCUSSION OF CHANGES
ITS 3.6.1, CONTAINMENT

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 CTS 3.6.1.1 states "Primary CONTAINMENT INTEGRITY shall be maintained." CTS 3.6.1.2 requires containment leakage rates be within specified parameters. CTS 3.6.1.6 requires that the structural integrity of the containment be maintained within specified parameters. ITS 3.6.1 states "Containment shall be OPERABLE." This changes the CTS by deleting the specific CONTAINMENT INTEGRITY definition and all references to it, as well as combining the containment requirements of CTS 3.6.1.1, CTS 3.6.1.2, and CTS 3.6.1.6 into one LCO statement.

The purpose of CTS 3.6.1.1, CTS 3.6.1.2, and CTS 3.6.1.6 is to provide requirements pertaining for containment OPERABILITY. This portion of the change (combining the LCOs) is acceptable because moving these requirements to one LCO, ITS 3.6.1, centralizes the requirements. The purpose of CTS 1.8 is to clearly describe all aspects of CONTAINMENT INTEGRITY. The CTS 3/4.6.1 references to CONTAINMENT INTEGRITY have been deleted since the CTS definition of CONTAINMENT INTEGRITY in CTS 1.8 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-1431, Rev. 2. Since all aspects of the CONTAINMENT 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.

A.3 CTS 4.6.1.1.b requires that Primary CONTAINMENT INTEGRITY shall be demonstrated by verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3. The ITS does not include the reference to CTS 3.6.1.3 (which has changed to ITS 3.6.2). This changes the CTS by not including a reference to another LCO that is required in the same MODES.

The purpose of the CTS 4.6.1.1.b is to provide assurance that each containment air lock is performing its function in support of CONTAINMENT INTEGRITY. This cross reference to another Specification is not necessary and this change is

Attachment 1, Volume 11, Rev. 0, Page 15 of 494

DISCUSSION OF CHANGES
ITS 3.6.1, CONTAINMENT

acceptable because ITS 3.6.2 provides assurance that containment air locks are OPERABLE without the reference in ITS 3.6.1. This change is designated as administrative because it does not result in technical changes to the CTS.

A.4 CTS 3.6.1.2 Action does not state what action to take if specific leakage rate limits are not met while in MODE 1, 2, 3, or 4; it only includes a requirement that the limits be restored prior to increasing Reactor Coolant System temperature above 200°F (i.e., MODE 4). 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; it only includes a requirement that the limits be restored prior to increasing Reactor Coolant System temperature above 200°F (i.e., MODE 4). Thus, entry into CTS 3.0.3 is required if CTS 3.6.1.2 or 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 MODE 3 within 7 hours and MODE 5 within 37 hours. 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. 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 entering MODE 4.

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 3.6.1.2 and CTS 3.6.1.6 are 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 without changing the time specified to enter MODE 3 and MODE 5. In addition, deletion of the current Actions of CTS 3.6.1.2 and CTS 3.6.1.6 is acceptable, because CTS 3.0.4 (ITS 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.

A.5 CTS 4.6.1.2 and CTS 4.6.1.6 reference specific 10 CFR 50, Appendix J, Option B requirements, and other specific leakage rate criteria. CTS 4.6.1.2 also states "The provisions of Specification 4.0.2 are not applicable." ITS SR 3.6.1.1 requires performance of visual examinations and leakage rate testing, except for containment air lock testing, in accordance with the Containment Leakage Rate Testing Program. This changes CTS by referencing the appropriate Containment Leakage Rate Testing Program.

The purpose of ITS 3.6.1 is to ensure that the structural integrity of the containment will be maintained comparable to the original design standards for the life of the facility. This change is acceptable because the appropriate 10 CFR 50, Appendix J, Option B requirements, and other specific leakage rate criteria are retained in the Technical Specifications as part of ITS 5.5.14, "Containment Leakage Rate Testing Program." This change is designated as administrative because it does not result in technical changes to the CTS.

Attachment 1, Volume 11, Rev. 0, Page 16 of 494

DISCUSSION OF CHANGES
ITS 3.6.1, CONTAINMENT

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 2 – Removing Descriptions of System Operation)* CTS 1.8 states "CONTAINMENT INTEGRITY shall exist when: 1.8.1 All penetrations required to be closed during accident conditions are either: a. Capable of being closed by an OPERABLE containment automatic isolation valve system, or b. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administrative control as permitted by Specification 3.6.3.1; 1.8.2 All equipment hatches are closed and sealed; and (Unit 2 only) 1.8.5 The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE." ITS 3.6.1 states "Containment shall be OPERABLE." This changes the CTS by moving the reference to penetration and equipment hatch requirements to the Bases. The change deleting the phrase "and sealed" in CTS 1.8.2 is addressed by DOC L.2.

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 still retains the requirement for the containment to be OPERABLE and the relocated material describes aspects of OPERABILITY. The ITS also still 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, which would provide verification that the equipment hatch is closed 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.

LESS RESTRICTIVE CHANGES

L.1 *(Category 5 - Deletion of Surveillance Requirement)* CTS 4.6.1.1.a.2 requires the primary containment equipment hatches to be verified closed and sealed every 31 days. The ITS does not include this requirement. This changes the CTS by deleting the specific Surveillance Requirement to verify primary containment equipment hatches are closed. The deletion of the sealed requirement is addressed in DOC L.2.

DISCUSSION OF CHANGES
ITS 3.6.1, CONTAINMENT

The purpose of CTS 4.6.1.1.a.2 is to help ensure primary CONTAINMENT INTEGRITY is maintained. However, the ITS still maintains the requirement for the Containment to be OPERABLE, and maintaining the hatches closed is part of this requirement (as described in the Bases). The ITS also continues to require the leakage rate testing in accordance with the Containment Leakage Rate Testing Program. This leakage testing would confirm that the equipment hatch is sealed, since if it was not sealed, then the measured leakage rate would be affected. In addition, opening of the equipment hatch is not a routine evolution, and it is strictly controlled by plant procedures. The appropriate procedure requires proper verification that the opened equipment hatch is resealed when the equipment hatch is closed. Therefore, this specific Surveillance Requirement is not necessary to be included in the ITS. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L.2 *(Category 1 – Relaxation of LCO Requirements)* CTS 1.8 states "CONTAINMENT INTEGRITY shall exist when:…1.8.2 All equipment hatches are closed and sealed." ITS 3.6.1 states that the Containment shall be OPERABLE. This changes the CTS by not including an explicit reference to sealing the equipment hatch. The change associated with moving the reference to the equipment hatch into the Bases is addressed by DOC LA.1.

The purpose of CTS 1.8.2 is to help provide assurance that the equipment hatch can perform its safety function. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. The Containment Leakage Rate Testing Program requires testing be performed in accordance with 10 CFR 50 Appendix J, Part B, requiring the containment isolation valves, including the equipment hatch, to be OPERABLE, but there is no specific mention of sealing the equipment hatches. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

Attachment 1, Volume 11, Rev. 0, Page 18 of 494

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

CTS

 1

3.6 CONTAINMENT SYSTEMS

3.6.1 Containment (Atmospheric, Subatmospheric, Ice Condenser, and Dual) 1

LCO3.6.1.1, LCO3.6.1.2, LCO3.6.1.6

LCO 3.6.1 Containment shall be OPERABLE.

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

ACTIONS

CTS	CONDITION	REQUIRED ACTION		COMPLETION TIME
3.6.1.1 Action, DOC A.4	A. Containment inoperable.	A.1	Restore containment to OPERABLE status.	1 hour
3.6.1.1 Action, DOC A.4	B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours
		AND		
		B.2	Be in MODE 5.	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, 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 headings for ISTS 3.6.1 include the parenthetical expression (Atmospheric, Subatmospheric, Ice Condenser, and Dual). This identifying information is not included in the CNP 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.

2. Typographical/grammatical error corrected.

3. This bracketed requirement regarding Containment Tendon Surveillance Program is deleted because it is not applicable to CNP. The CNP containment does not utilize containment tendons.

Attachment 1, Volume 11, Rev. 0, Page 21 of 494

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

 ①

B 3.6 CONTAINMENT SYSTEMS

B 3.6.1C Containment (Ice Condenser) ①

BASES

BACKGROUND

The containment is a free standing steel -lined, ~~pressure vessel surrounded by a~~ reinforced concrete shield building. The containment ~~vessel~~ structure, including all its penetrations, is includes a low leakage steel shell liner designed to contain the radioactive material that may be released from the reactor core following a design basis loss of coolant accident (LOCA). Additionally, the containment structure and shield building provide shielding from the fission products that may be present in the containment atmosphere following accident conditions. ② ⑤

INSERT 1

~~The containment vessel is a vertical cylindrical steel pressure vessel with hemispherical dome and a concrete base mat with steel membrane. It is completely enclosed by a reinforced concrete shield building. An annular space exists between the walls and domes of the steel containment vessel and the concrete shield building to provide for the collection, mixing, holdup, and controlled release of containment out leakage. Ice condenser containments utilize an outer concrete building for shielding and an inner steel containment for leak tightness.~~ ② ② ②

INSERT 2

Containment piping penetration assemblies provide for the passage of process, service, sampling, and instrumentation pipelines into the containment ~~vessel~~ structure while maintaining containment integrity. ~~The shield building provides shielding and allows controlled release of the annulus atmosphere under accident conditions, as well as environmental missile protection for the containment vessel and Nuclear Steam Supply System.~~ ②

The inner steel ~~containment~~ liner 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. SR 3.6.1.1 leakage rate requirements comply with 10 CFR 50, Appendix J, Option A B (Ref. 1), as modified by approved exemptions. ② ③

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:

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

2

INSERT 1

The containment structure is a reinforced concrete vertical cylinder with a slab base and a hemispherical dome. A welded steel liner (dome, wall, and bottom) is attached to the inside face of the concrete shell, to ensure a high degree of leak tightness.

2

INSERT 2

The structure serves as both a biological shield and a pressure container.

Attachment 1, Volume 11, Rev. 0, Page 24 of 494

 1

BASES

BACKGROUND (continued)

1. Capable of being closed by an OPERABLE automatic containment isolation system, or 4

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;" 4

b. Each air lock is OPERABLE, except as provided in LCO 3.6.2, "Containment Air Locks," 4

The is

c. All equipment hatches are closed; and 2 4

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

APPLICABLE SAFETY ANALYSES

The safety design basis for the containment is that the containment must withstand the pressures and temperatures of the limiting Design Basis Accident (DBA) without exceeding the design leakage rates.

The DBAs that result in a challenge to containment OPERABILITY from high pressures and temperatures are a LOCA, a steam line break, and a rod ejection accident (REA) (Ref. 2). In addition, release of significant (Ref. 2) 2 fission product radioactivity within containment can occur from a LOCA or REA. In the DBA analyses, it is assumed that the containment is 5 OPERABLE such that, for the DBAs involving release of fission product radioactivity, release to the environment is controlled by the rate of containment leakage. The containment was designed with an allowable leakage rate of 0.1% of containment air weight per day (Ref. 3). This 4 3 2 leakage rate, used in the evaluation of offsite doses resulting from accidents, is defined in 10 CFR 50, Appendix J, Option A B (Ref. 1), as 3 L_a: the maximum allowable containment leakage rate at the calculated peak containment internal pressure (P_a) resulting from the limiting design basis LOCA. The allowable leakage rate represented by L_a forms the basis for the acceptance criteria imposed on all containment leakage rate testing. L_a is assumed to be 0.1% per day in the safety analysis at 3 P_a = 14.4 psig (Ref. 3). 4 3 2

a rod ejection accident (Ref. 3)

0.25

0.25

12

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). 2

3 **INSERT 3**

The sealing mechanism associated with each containment penetration (e.g., welds, bellows, or O-rings) is OPERABLE (i.e., OPERABLE such that the containment leakage limits are met).

 1

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. 6

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 are addressed in LCO 3.9.4 3, "Containment Penetrations." 8

ACTIONS

A.1

In the event containment is inoperable, containment 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 unit 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. 2

Containment ~~(Ice Condenser)~~ 1
B 3.6.1~~C~~

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1

Maintaining the containment OPERABLE requires compliance with the visual examinations and leakage rate test requirements of the Containment Leakage Rate Testing Program. Failure to meet air lock ~~[, secondary containment bypass leakage path, and purge valve with resilient seal]~~ 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 $\leq$ 0.6 L_a for combined Type B and C leakage, and ~~[$\leq$ 0.75 L_a for Option A]~~ $\leq$ 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 $\leq$ 1.0 L_a. At $\leq$ 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. 6 6 2 3

~~- 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.~~ 7

~~[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 consistent with the recommendations of Regulatory Guide 1.35 (Ref. 4).]~~ 8

REFERENCES

1. 10 CFR 50, Appendix J, Option A~~/B~~ 3
2. UFSAR, ~~Chapter [15]~~. Section 14.3.4 3
4 ~~3~~. UFSAR, Section ~~[6.2]~~ 5.7 2 3
~~4. Regulatory Guide 1.35, Revision [1].~~ 8
3. UFSAR, Section 14.2.6. 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.1 BASES, CONTAINMENT

1. The type of Containment (Ice Condenser) and the Specification designator "C" are deleted since they are unnecessary (only one Containment Specification is used in the CNP ITS). This information is provided in NUREG-1431, Rev. 2, 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 Atmospheric, Subatmospheric, and Dual Containment Specification Bases (ISTS B 3.6.1A, ISTS B 3.6.1B, and ISTS B 3.6.1D) are not used and are 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 brackets have been removed and the proper plant specific information/value has been provided.

4. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

5. Editorial change made for enhanced clarity or to be consistent with the ISTS Writers Guide (NEI 01-03).

6. This bracketed requirement is deleted since it is not applicable to CNP.

7. Reviewer’s Note not retained.

8. Changes are made to reflect those changes made to the ISTS.

Attachment 1, Volume 11, Rev. 0, Page 29 of 494

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.1, CONTAINMENT

There are no specific NSHC discussions for this Specification.

Attachment 1, Volume 11, Rev. 0, Page 31 of 494

ATTACHMENT 2

ITS 3.6.2, Containment Air Locks

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

ITS 3.6.2

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

CONTAINMENT AIR LOCKS

LIMITING CONDITION FOR OPERATION

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

a. Both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed, and — LA.1

b. An overall air lock leakage rate of $\leq 0.05\ L_a$ at P_a, 12 psig. — See ITS 5.5

APPLICABILITY: MODES 1, 2, 3 and 4.

Add proposed ACTIONS Note 1 — L.1

Add proposed ACTIONS Note 2 — A.2

Add proposed ACTIONS Note 3 — A.3

ACTION: Add proposed ACTIONS A and B

ACTION C, ACTION D — With an air lock inoperable, restore the air lock to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. — L.1

Add proposed Required Actions C.1 and C.2 — M.1

SURVEILLANCE REQUIREMENTS

4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

SR 3.6.2.1 a. In accordance with 10 CFR 50 Appendix J Option B and Regulatory Guide 1.163, dated September 1995, and — See ITS 5.5

the Containment Leakage Rate Testing Program — A.4

SR 3.6.2.2 b. At least once per 6 months by verifying that only one door in each air lock can be opened at a time.

24 — L.2

Add proposed SR 3.6.2.1 Note 1 — A.5

Add proposed SR 3.6.2.1 Note 2 — A.6

A.1

ITS

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A.1

ITS

DEFINITIONS

REPORTABLE EVENT

1.7 A REPORTABLE EVENT shall be any of those conditions specified in 10 CFR 50.73.

CONTAINMENT INTEGRITY

1.8 CONTAINMENT INTEGRITY shall exist when:

See ITS Chapter 1.0

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

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

b. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administrative control as permitted by Specification 3.6.3.1.

See ITS 3.6.1

1.8.2 All equipment hatches are closed and sealed.

LCO 3.6.2 1.8.3 Each air lock is in compliance with the requirements of Specification 3.6.1.3.

1.8.4 The containment leakage rates are within the limits of Specification 3.6.1.2

See ITS 3.6.1

CHANNEL CALIBRATION

1.9 A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the CHANNEL FUNCTIONAL TEST. The CHANNEL CALIBRATION may be performed by any series of sequential, overlapping or total channel steps such that the entire channel is calibrated.

CHANNEL CHECK

1.10 A CHANNEL CHECK shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

See ITS Chapter 1.0

ITS 3.6.2

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

CONTAINMENT AIR LOCKS

LIMITING CONDITION FOR OPERATION

LCO 3.6.2

3.6.1.3 Each containment air lock shall be OPERABLE ~~with:~~

a. ~~Both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed, and~~ LA.1

b. An overall air lock leakage rate of ≤ 0.05 L_a at P_a, 12.0 psig. See ITS 5.5

APPLICABILITY: MODES 1, 2, 3 and 4.

Add proposed ACTIONS Note 1 L.1

Add proposed ACTIONS Note 2 A.2

Add proposed ACTIONS Note 3 A.3

ACTION: Add proposed ACTIONS A and B

ACTION C

ACTION D

With an air lock inoperable, maintain at least one door closed; restore the air lock to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. L.1

Add proposed Required ACTIONS C.1 and C.2 M.1

SURVEILLANCE REQUIREMENTS

4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

SR 3.6.2.1

a. In accordance with 10 CFR 50 Appendix J Option B and Regulatory Guide 1.163, dated September 1995, and See ITS 5.5

the Containment Leakage Rate Testing Program A.4

SR 3.6.2.2

b. At least once per 6 months by verifying that only one door in each air lock can be opened at a time.

24 L.2

Add proposed SR 3.6.2.1 Note 1 A.5

Add proposed SR 3.6.2.1 Note 2 A.6

Attachment 1, Volume 11, Rev. 0, Page 37 of 494

A.1

ITS

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Attachment 1, Volume 11, Rev. 0, Page 38 of 494

ITS 3.6.2

A.1

ITS

DEFINITIONS

REPORTABLE EVENT

1.7 A REPORTABLE EVENT shall be any of those conditions specified in 10 CFR 50.73.

CONTAINMENT INTEGRITY

1.8 CONTAINMENT INTEGRITY shall exist when:

See ITS Chapter 1.0

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

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

b. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administrative control as permitted by Specification 3.6.3.1.

See ITS 3.6.1

LCO 3.6.2

1.8.2 All equipment hatches are closed and sealed,

1.8.3 Each air lock is in compliance with the requirements of Specification 3.6.1.3,

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

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

CHANNEL CALIBRATION

1.9 A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the CHANNEL FUNCTIONAL TEST. The CHANNEL CALIBRATION may be performed by any series of sequential, overlapping or total channel steps such that the entire channel is calibrated.

CHANNEL CHECK

1.10 A CHANNEL CHECK shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

See ITS Chapter 1.0

Attachment 1, Volume 11, Rev. 0, Page 39 of 494

DISCUSSION OF CHANGES
ITS 3.6.2, CONTAINMENT AIR LOCKS

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 CTS 3.6.1.3 states "Each containment air lock shall be OPERABLE…" CTS 3.6.1.3 Action a states "With an air lock inoperable" and specifies Actions to be taken. ITS 3.6.2 ACTIONS Note 2 states "Separate Condition entry is allowed for each air lock." ITS 3.6.2 Condition 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 CTS 3.6.1.3 is to ensure containment air locks meet their requirements for CONTAINMENT INTEGRITY (changed to containment OPERABILITY in the ITS). 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 provide appropriate compensatory action for each inoperable 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.

A.3 CTS 3.6.1.3 does not include a reference to entering applicable Conditions and Required Actions of the CONTAINMENT INTEGRITY LCO (CTS 3.6.1.1) (changed to containment OPERABILITY in the ITS). ITS 3.6.2 ACTIONS Note 3 states "Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when air lock leakage results in exceeding the overall containment leakage rate." This changes the CTS by explicitly requiring the Containment Actions be entered when the Containment LCO is not met as a result of air lock leakage exceeding limits.

This change is acceptable because it reinforces the requirement in ITS 3.6.1 to meet overall containment leakage limits. This change is designated as administrative because it does not result in technical changes to the CTS.

A.4 CTS 4.6.1.3.a references specific 10 CFR 50, Appendix J, Option B requirements, and other specific leakage rate criteria. ITS SR 3.6.2.1 requires performance of containment air lock leakage rate testing in accordance with the Containment Leakage Rate Testing Program. This changes CTS by referencing the appropriate Containment Leakage Rate Testing Program.

The purpose of CTS 4.6.1.3.a is to ensure that the structural integrity of the containment air locks will be maintained comparable to the original design

Attachment 1, Volume 11, Rev. 0, Page 40 of 494

standards for the life of the facility. This change is acceptable because the appropriate 10 CFR 50, Appendix J, Option B requirements, and other specific leakage rate criteria are retained in the Technical Specifications as part of ITS 5.5.14, "Containment Leakage Rate Testing Program." This change is designated as administrative because it does not result in technical changes to the CTS.

A.5 CTS 4.6.1.3.a references specific 10 CFR 50, Appendix J, Option B requirements, and other specific leakage rate criteria. ITS SR 3.6.2.1 requires performance of containment air lock leakage rate testing in accordance with the Containment Leakage Rate Testing Program. ITS SR 3.6.2.1 Note 1 states "An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test." This changes the CTS by adding a Note as a reminder that either air lock door is capable of providing a fission product barrier in the event of a DBA.

The purpose of CTS 4.6.1.3.a is to ensure that the structural integrity of the containment air locks will be maintained comparable to the original design standards for the life of the facility. This change is acceptable because it provides clarification that the previous overall containment air lock leakage test remains valid when one air lock door is found inoperable, consistent with current requirements and practices. One inoperable door does not invalidate the test for the overall air lock leakage test because the second door is still capable of performing the safety function. This change is designated as administrative because it does not result in technical changes to the CTS.

A.6 CTS 4.6.1.3.a references specific 10 CFR 50, Appendix J, Option B requirements, and other specific leakage rate criteria. ITS SR 3.6.2.1 requires performance of containment air lock leakage rate testing in accordance with the Containment Leakage Rate Testing Program. ITS SR 3.6.2.1 Note 2 states "Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1." This changes the CTS by adding a Note as a reminder that the air lock leakage must be accounted for in determining the combined Type B and C containment leakage rate.

The purpose of CTS 4.6.1.3.a is to ensure that the structural integrity of the containment air locks will be maintained comparable to the original design standards for the life of the facility. This change is acceptable because it provides clarification that the containment air lock leakage is properly accounted for in determining the combined Type B and C containment leakage rate, consistent with current requirements and practices. This change is designated as administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M.1 The CTS 3.6.1.3 Action requires restoration of an inoperable air lock within 24 hours. The ITS requires two additional Required Actions. 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 and ITS 3.6.2 Required

DISCUSSION OF CHANGES
ITS 3.6.2, CONTAINMENT AIR LOCKS

Action C.2 requires a door in the inoperable air lock to be closed within 1 hour. This changes the CTS by adding new Required Actions.

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. The 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 new Required Actions.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.6.1.3.a states (in part) what constitutes an OPERABLE containment air lock. ITS LCO 3.6.2 does not include 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 CTS 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 have two OPERABLE containment air locks. 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 CTS.

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 - Relaxation of Required Action)* The CTS 3.6.1.3 Action states that with an air lock inoperable (for any reason), restore the air lock to OPERABLE status within 24 hours, and if not restored, the unit must be shutdown within a certain time limit. The ITS provides separate ACTIONS for different inoperabilities of the air lock. With an airlock inoperable due to a single inoperable door, ITS 3.6.2 ACTION A allows unlimited operation, provided the OPERABLE air lock door is closed in 1 hour and locked closed in 24 hours, and a verification is performed every 31 days that the OPERABLE air lock door remains locked closed. For air lock doors in high radiation areas, this 31 day verification can be performed by administrative means. In addition, if both air locks have inoperable doors, the ACTION allows containment entry and exit for up to 7 days. 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 and locked closed in 24 hours, and a verification is performed every 31 days that an OPERABLE air lock door in the air lock remains locked 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 OPERABLE door can be opened) under the control of a dedicated individual. Finally, due to these new ACTIONS, ITS 3.6.2 ACTION C, which requires the air lock to be restored within 24 hours, only applies to an air lock that is inoperable for reasons other than an inoperable door or an inoperable interlock mechanism. For both of these new ACTIONS as well as ACTION C, as stated in ITS ACTIONS Note 1, entry and exit (i.e., the closed and locked OPERABLE air lock doors can be opened) is also 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 door or interlock mechanism, and also allows separate Condition entry for each of the two air locks.

The purpose of the CTS air lock Action 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 ACTIONS 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.

L.2 (*Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.6.1.3.b requires testing of the containment airlock interlock once per 6 months. ITS SR 3.6.2.2 requires testing of the containment airlock interlock every 24 months. This changes the CTS by extending the Frequency of the Surveillance from 6 months (i.e., a maximum of 7.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

The purpose of ITS SR 3.6.2.2 is to ensure that the containment airlock interlock prevents more than one of the containment airlock doors from opening at a time.

DISCUSSION OF CHANGES
ITS 3.6.2, CONTAINMENT AIR LOCKS

This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. Typically, the interlock is installed after each refueling outage, verified OPERABLE with the Surveillance. If the need for maintenance arises when the interlock is required, the performance of the interlock Surveillance would be required following the maintenance. In addition, when an air lock is opened during times the interlock is required, the operator first verifies that one door is completely shut before attempting to open the other door. Therefore, the interlock is not challenged except during actual testing of the interlock. Consequently, it should be sufficient to ensure proper operation of the interlock by testing the interlock on a 24 month interval.

Testing of the air lock interlock mechanism is accomplished through having one door not completely engaged in the closed position, while attempting to open the second door. Failure of this Surveillance effectively results in a loss of containment OPERABILITY. Administrative controls and training do not allow this interlock to be challenged for normal ingress and egress. One door is opened, all personnel and equipment as necessary are placed into the air lock, and then the door is completely closed prior to attempting to open the second door. This Surveillance is contrary to processes and training of conservative operation, in that it requires an operator to challenge an interlock during a MODE when the interlock function is required. The door interlock mechanism cannot be readily bypassed; linkages must be removed to allow bypass of the interlock, which are under the control of station processes such as temporary modifications, primary containment closure procedures, and out of service practices. Failure rate of this physical device is very low based on the design of the interlock.

Historically, the Frequency of this interlock verification was established to coincide with the Frequency of the overall air lock leakage test. According to 10 CFR 50, Appendix J, Option A, this Frequency is once per 6 months. However, Appendix J, Option B, to which CNP Units 1 and 2 are currently licensed, allows for an extension of the overall air lock leakage test Frequency to a maximum of 30 months.

Therefore, it is proposed to change the required Frequency for this Surveillance to 24 months. With the allowance of ITS SR 3.0.2, this provides a total of 30 months, which corresponds to the overall air lock leakage test Frequency. In this fashion, the interlock can be tested in a MODE where the interlock is not required. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

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

CTS

3.6 CONTAINMENT SYSTEMS

3.6.2 Containment Air Locks (Atmospheric, Subatmospheric, Ice Condenser, and Dual) ①

3.6.1.3 LCO 3.6.2 [Two] containment air lock[s] shall be OPERABLE. ②

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

ACTIONS

\- NOTES -

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

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

DOC A.3 3. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when air lock leakage results in exceeding the overall containment leakage rate.

DOC L.1

CONDITION	REQUIRED ACTION		COMPLETION TIME
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]. ②	
	A.1	Verify the OPERABLE door is closed in the affected air lock.	1 hour
	AND		

① CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME
DOC L.1		A.2	Lock the OPERABLE door closed in the affected air lock.	24 hours
		AND		
		A.3	- NOTE - Air lock doors in high radiation areas may be verified locked closed by administrative means. Verify the OPERABLE door is locked closed in the affected air lock.	 Once per 31 days
DOC L.1	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.	
		B.1	Verify an OPERABLE door is closed in the affected air lock.	1 hour
		AND		

CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME
DOC L.1		B.2	Lock an OPERABLE door closed in the affected air lock.	24 hours
		AND		
		B.3	- NOTE - Air lock doors in high radiation areas may be verified locked closed by administrative means.	
			Verify an OPERABLE door is locked closed in the affected air lock.	Once per 31 days
Action	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		
		C.2	Verify a door is closed in the affected air lock.	1 hour
		AND		
		C.3	Restore air lock to OPERABLE status.	24 hours
Action	D. Required Action and associated Completion Time not met.	D.1	Be in MODE 3.	6 hours
		AND		
		D.2	Be in MODE 5.	36 hours

Attachment 1, Volume 11, Rev. 0, Page 48 of 494

CTS

SURVEILLANCE REQUIREMENTS

CTS		SURVEILLANCE	FREQUENCY	
4.6.1.3.a	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. 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	(1) Verify only one door in the air lock can be opened at a time.	24 months(1)	2

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.2, CONTAINMENT AIR LOCKS

1. The headings for ISTS 3.6.2 include the parenthetical expression (Atmospheric, Subatmospheric, Ice Condenser, and Dual). This identifying information is not included in the CNP 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.

2. The brackets are removed and the proper plant specific information/value is provided.

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

B 3.6 CONTAINMENT SYSTEMS

B 3.6.2 Containment Air Locks (Atmospheric, Subatmospheric, Ice Condenser, and Dual) (1)

BASES

BACKGROUND

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

approximately (2)

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 local ~~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.~~ INSERT 1 (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 analyses.

APPLICABLE SAFETY ANALYSES

Refs. 1 and 2 (2)

The DBAs that result in a release of radioactive material within containment are a loss of coolant accident and a rod 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 ~~[0.1]~~ 0.25 % of containment air weight per day (Ref. ~~2~~). (4) This leakage rate is defined in 10 CFR 50, Appendix J, Option ~~A~~ B (Ref. ~~1~~ 3), as L_a = ~~[0.1]~~ % of containment air weight per day, the ~~maximum~~ allowable containment leakage rate at (2)

(4)

2 **INSERT 1**

a control room alarm is provided for each air lock to alert the operator whenever an air lock door is open for greater than approximately 5 minutes.

BASES

APPLICABLE SAFETY ANALYSES (continued)

12 ④

the calculated peak containment internal pressure P_a = 14.4 psig following a design basis LOCA. This allowable leakage rate forms the basis for the acceptance criteria imposed on the SRs associated with the air locks.

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

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.

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 ⑥

Attachment 1, Volume 11, Rev. 0, Page 54 of 494

BASES

ACTIONS (continued)

OPERABLE door). The ability to open the OPERABLE door, even if it means the containment boundary is temporarily not intact, is acceptable due to 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.~~ 6

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.

In the event the air lock leakage results in exceeding the overall containment leakage rate, Note 3 directs entry into the applicable Conditions and Required Actions of LCO 3.6.1, "Containment."

A.1, A.2, and A.3

With one air lock door in one or more containment air locks inoperable, 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.

In addition, the affected air lock penetration must be isolated by locking closed the OPERABLE air lock door within the 24 hour Completion Time. The 24 hour Completion Time is 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

BASES

ACTIONS (continued)

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 on a periodic basis 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 is entered, using the inoperable air lock, to perform an allowed activity listed above. This allowance is acceptable due to the low probability of an event that could pressurize the containment during the short time that the OPERABLE door is expected to be open.

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

BASES

ACTIONS (continued)

air lock to ensure that only one door is opened at a time (i.e., the individual performs the function of the interlock).

an additional (3)

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~~ unit shutdown. In addition, even with both doors failing the seal test, the overall containment leakage rate can still be within limits. (2)

Required Action C.2 requires that one door in the affected containment air lock must be verified to be closed 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.

Additionally, the affected air lock(s) must be restored to OPERABLE status within the 24 hour Completion Time. 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.

D.1 and D.2

INSERT 2 (5)

If ~~the inoperable containment air lock cannot be restored to OPERABLE status within the required Completion Time~~, the ~~plant~~ unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the ~~plant~~ unit must be brought to at least MODE 3 within 6 hours and to MODE 5 (2) (2)

5 **INSERT 2**

any Required Action and associated Completion Time is not met

Attachment 1, Volume 11, Rev. 0, Page 58 of 494

BASES

ACTIONS (continued)

within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required ~~plant~~ unit conditions from full power conditions in an orderly manner and without challenging ~~plant~~ systems. ②

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~~ ④

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 in and out of the 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 air lock 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. The 24 month Frequency is based on the need to perform this

BASES

SURVEILLANCE REQUIREMENTS (continued)

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. Operating experience has shown these components usually pass the Surveillance when performed at 24 month Frequency. 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.

INSERT 3 2

REFERENCES 4 ~~1~~. ~~10 CFR 50, Appendix J, Option [A] [B]~~ 2 4

3 ~~2~~. (U)FSAR, Section ~~[6.2]~~ 5.7. 2 4

2 **INSERT 3**

1. UFSAR, Section 14.3.4.
2. UFSAR, Section 14.2.6.

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.2 BASES, CONTAINMENT AIR LOCKS

1. Changes are made to reflect those changes made to the ISTS.

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

3. Editorial/grammatical error corrected.

4. The subsequent requirements are renumbered or revised, where applicable, to reflect the changes.

5. The words in the ISTS do not convey the complete intent of the actual ISTS Condition and when the Condition should be entered. Therefore, to be consistent with the actual ISTS Condition words, the Bases have been modified.

6. The Bases statement that entry through the OPERABLE air lock is preferred when entering the containment to repair an inoperable air lock door has been deleted. The divider barrier must be breached (i.e., opened) in order to access one air lock by entering through the other air lock, and the ITS requires the divider barrier to be closed. Therefore, it is not practical to enter through the OPERABLE air lock when accessing the other air lock to repair its inoperable door.

Attachment 1, Volume 11, Rev. 0, Page 62 of 494

Specific No Significant Hazards Considerations (NSHCs)

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

There are no specific NSHC discussions for this Specification.

ATTACHMENT 3

ITS 3.6.3, Containment Isolation Valves

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

ITS 3.6.3

A.1

ITS

CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

LCO 3.6.3

SR 3.6.3.2 and ACTIONS Note 1

3.6.3.1 Each containment isolation valve shall be OPERABLE. Containment purge valves and locked or sealed closed valves may be opened on an intermittent basis under administrative control. The ACTION statement of T/S 3/4.6.3.1 is not applicable to the containment purge supply and exhaust isolation valves. The Limiting Condition for Operation and its associated ACTION statement for these valves is given in Technical Specification 3/4.6.1.7.

L.1

A.2

APPLICABILITY: MODES 1,2,3 and 4.

Add proposed ACTIONS Note 2 A.3

Add proposed ACTIONS Note 3 A.4

Add proposed ACTIONS Note 4 A.5

ACTION:

ACTION A, ACTION B, ACTION C

With one or more of the containment isolation valve(s) inoperable, either:

a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or A.6

b. Isolate each affected penetration within $\boxed{4}$ hours by use of at least one deactivated automatic valve secured in the isolation position, or

1 hour for ACTION B M.1

c. Isolate each affected penetration within $\boxed{4}$ hours by use of at least one closed manual valve or blind flange, or

or check valve with flow secured

72 hours for ACTION C L.2

ACTION D

d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

L.3

~~The provisions of Specification 3.0.4 are not applicable.~~ A.7

SURVEILLANCE REQUIREMENTS

~~4.6.3.1.1 Each containment isolation valve 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.~~ L.4

ITS 3.6.3

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

24 L.5

SR 3.6.3.5 4.6.3.1.2 Each containment isolation valve shall be demonstrated OPERABLE at least once per ~~18~~ months by: L.13

actual or

a. Verifying that on a ~~Phase A containment~~ isolation test signal, each ~~Phase A~~ isolation valve actuates to its isolation position. LA.1

b. Verifying that on a ~~Phase B containment~~ isolation test signal, each ~~Phase B~~ isolation valve actuates to its isolation position.

c. Verifying that on a ~~Containment Purge and Exhaust~~ isolation signal, each ~~Purge and Exhaust~~ valve actuates to its isolation position.

not locked, sealed, or otherwise secured in position L.6

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 Specification 4.0.5~~.

L.7

in accordance with the Inservice Testing Program A.8

A.1

Pages 3/4 6-17 through 3/4 6-22
deleted

Attachment 1, Volume 11, Rev. 0, Page 69 of 494

ITS 3.6.3

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
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:

Add proposed ACTIONS Notes 2, 3, and 4 and ACTIONS A, B, and C

L.8

ACTION D

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT 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

L.9

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

Add proposed Required Actions A.2 and C.2 Notes 1 and 2 and SRs 3.6.3.2 and 3.6.3.3 Note

L.10

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

a. At least once per 31 days by verifying that:

1. 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 under administrative control as permitted by Specification 3.6.3.1, and

and not locked, sealed, or secured

or check valves with flow secured

L.3

ACTIONS Note 1, SR 3.6.3.2, SR 3.6.3.3

2. All equipment hatches are closed and sealed.

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

See ITS 3.6.1

not

L.10

SR 3.6.3.3

*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.

ITS 3.6.3

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

CONTAINMENT VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.6.3, SR 3.6.3.1 — 3.6.1.7 The containment purge supply and exhaust system shall be closed except when operation of the containment purge system is required for pressure control, ALARA, and respirable air quality considerations for personnel entry, and for surveillance testing and maintenance activities. No more than one purge supply path and one purge exhaust path shall be open at a time. — A.2

SR 3.6.3.1

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

Add proposed ACTIONS Note 2 — L.11

ACTION:

Add proposed ACTIONS Note 4 — A.5

ACTION A

a. With one containment purge supply and/or one exhaust isolation valve inoperable, isolate the affected penetration by use of at least one automatic valve secured in the closed position, and, within ~~72~~ 4 hours, either: — M.2

1) ~~Restore the inoperable valve to OPERABLE status, or,~~ — A.6

2) Deactivate the automatic valve secured in the closed position.

b. ~~Operation may then continue until performance of the next required valve test~~ provided that the automatic valve secured in the closed position is verified to be deactivated in the closed position at least once per 31 days. — L.12

Add proposed ACTION B — L.11

ACTION D

c. Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

~~d. The provisions of Specification 3.0.4 are not applicable.~~ — A.7

SURVEILLANCE REQUIREMENTS

~~4.6.1.7.1 The surveillance requirements of Technical Specifications 3/4.6.1.2 and 3/4.6.3.1 apply.~~ — A.9

Add proposed SR 3.6.3.1 — M.3

ITS 3.6.3

A.1

ITS

CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

LCO 3.6.3

SR 3.6.3.2 and ACTIONS Note 1

3.6.3.1 Each containment isolation valve shall be OPERABLE. Containment purge valves and locked or sealed closed valves may be opened on an intermittent basis under administrative control. The ACTION statement of Technical Specification 3/4.6.3.1 is not applicable to the containment purge and exhaust isolation valves. The Limiting Condition for Operation and its associated ACTION statement for these valves are given in Technical Specification 3/4.6.1.7.

L.1

A.2

APPLICABILITY: MODES 1,2,3 and 4.

Add proposed ACTIONS Note 2 A.3

Add proposed ACTIONS Note 3 A.4

Add proposed ACTIONS Note 4 A.5

ACTION:

A.10

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

L.2

ACTIONS A and C

a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or

A.6

b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or

72 hours for ACTION C

L.2

c. Isolate each affected penetration within 4 hours by use of at least one closed manual valve or blind flange; or

Add proposed ACTION B A.11

ACTION D

d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

The provisions of Specifications 3.0.4 are not applicable.

A.7

SURVEILLANCE REQUIREMENTS

4.6.3.1.1 Each containment isolation valve 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.

L.4

Attachment 1, Volume 11, Rev. 0, Page 72 of 494

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.6.3.5 4.6.3.1.2 Each containment isolation valve specified shall be demonstrated OPERABLE at least once per ~~18~~ 24 months by: L.5 L.13

actual or

a. Verifying that on a ~~Phase A containment~~ isolation test signal, each ~~Phase A~~ isolation valve actuates to its isolation position. LA.1

b. Verifying that on a ~~Phase B containment~~ isolation test signal, each ~~Phase B~~ isolation valve actuates to its isolation position.

c. Verifying that on a ~~Containment Purge and Exhaust~~ isolation signal, each ~~Purge and Exhaust~~ valve actuates to its isolation position.

not locked, sealed, or otherwise secured in position L.6

SR 3.6.3.4 4.6.3.1.3.1 The isolation time of each power operated ~~or~~ automatic containment isolation valve shall be determined to be within its limit when tested ~~pursuant to Specification 4.0.5~~. L.7

in accordance with the Inservice Testing Program A.8

Attachment 1, Volume 11, Rev. 0, Page 73 of 494

A.1

Page 3/4 6-16 through 3/4 6-32
deleted

Attachment 1, Volume 11, Rev. 0, Page 74 of 494

ITS 3.6.3

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
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:

Add proposed ACTIONS Notes 2, 3, and 4 and ACTIONS A, B, and C

L.8

ACTION D

Without ~~primary CONTAINMENT INTEGRITY, restore CONTAINMENT 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.

SURVEILLANCE REQUIREMENTS

See ITS 3.6.1

L.9

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

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

a. At least once per 31 days by verifying that:

Add proposed Required Actions A.2 and C.2 Notes 1 and 2 and SRs 3.6.3.2 and 3.6.3.3 Note

L.10

ACTIONS Note 1, SR 3.6.3.2, SR 3.6.3.3

1. All penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and not locked, sealed, or secured 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 under administrative control as permitted by Specification 3.6.3.1, and or check valves with flow secured

L.3

2. All equipment hatches are closed and sealed.

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

See ITS 3.6.1

not

L.10

SR 3.6.3.3

*Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are not 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.

ITS 3.6.3

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

CONTAINMENT VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.6.3, SR 3.6.3.1

3.6.1.7 The containment purge supply and exhaust system shall be closed except when operation of the containment purge system is required for pressure control, ALARA, and respirable air quality considerations for personnel entry, and for surveillance testing and maintenance activities. No more than one purge supply path and one purge exhaust path shall be open at a time. A.2

SR 3.6.3.1

Add proposed ACTIONS Note 2 L.11

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

ACTION:

Add proposed ACTIONS Note 4 A.5

ACTION A

a. With one containment purge supply and/or one exhaust isolation valve inoperable, isolate the affected penetration by use of at least one automatic valve secured in the closed position, and, within 72 4 hours, either: M.2

1) ~~Restore the inoperable valve to OPERABLE status, or,~~ A.6

2) Deactivate the automatic valve secured in the closed position.

b. ~~Operation may then continue until performance of the next required valve test~~ provided that the automatic valve secured in the closed position is verified to be deactivated in the closed position at least once per 31 days. L.12

Add proposed ACTION B L.11

ACTION D

c. Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

~~d. The provisions of Specification 3.0.4 are not applicable.~~ A.7

SURVEILLANCE REQUIREMENTS

~~4.6.1.7.1 The surveillance requirements of Technical Specifications 3/4.6.1.2 and 3/4.6.3.1 apply.~~ A.9

Add proposed SR 3.6.3.1 M.3

Attachment 1, Volume 11, Rev. 0, Page 76 of 494

DISCUSSION OF CHANGES
ITS 3.6.3, CONTAINMENT ISOLATION VALVES

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 CTS 3.6.3.1 states that the Actions of CTS 3/4.6.3.1 are not applicable to the containment purge supply and exhaust isolation valves. The Actions for these valves are provided in CTS 3/4.6.1.7. The ITS combines these two CTS Specifications into one Specification, ITS 3.6.3. Therefore this CTS statement is not necessary and has been deleted.

The CTS 3.6.3.1 statement is a cross reference to direct the user to the proper actions to take when the containment purge supply and exhaust isolation valves are inoperable. This change is acceptable because the two CTS Specifications have been combined into one in the ITS and this statement is not needed. This change is designated as administrative because it does not result in any technical changes to the CTS.

A.3 CTS 3.6.3.1 Action provides requirements to be taken for each containment isolation valve that is inoperable. The ITS includes an explicit Note (ACTIONS Note 2) that provides instructions for the proper application of the ACTIONS for ITS compliance (i.e., Separate Condition entry is allowed for each penetration flow path). This changes the CTS by providing explicit direction as to how to utilize 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 the appropriate Actions on a per valve basis (the change to a penetration basis is discussed in DOC M.1). This change is designated as administrative since it does not result in a technical change to the CTS.

A.4 CTS 3.6.3.1 does not specifically require Conditions to be entered for systems supported by inoperable containment isolation valves. OPERABILITY of supported systems is addressed through the definition of OPERABILITY for each system, and appropriate LCO Actions are taken. ITS 3.6.3 ACTIONS Note 3 states "Enter applicable Conditions and Required Actions for systems made inoperable by containment isolation valves." ITS LCO 3.0.6 provides an exception to ITS LCO 3.0.2, stating "When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered." This changes the CTS by adding a specific statement to require supported system Conditions and Required Actions be entered, whereas in the CTS this would be done without the Note.

This change is acceptable because the addition of the ITS Note reflects the CTS requirement to take applicable Actions for inoperable systems. The ITS Note is

DISCUSSION OF CHANGES
ITS 3.6.3, CONTAINMENT ISOLATION VALVES

required because of the addition of ITS LCO 3.0.6, and because the requirement to declare supported systems inoperable is being retained. This change is designated as administrative because it does not result in any technical changes to the CTS.

A.5 CTS 3.6.3.1 and CTS 3.6.1.7 do not include a reference to entering applicable Conditions and Actions of the CONTAINMENT INTEGRITY LCO (CTS 3.6.1.1) (changed to containment OPERABILITY in the ITS). ITS 3.6.3 ACTIONS Note 4 states "Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when leakage for a penetration flow path results in exceeding the overall containment leakage rate acceptance criteria." This changes the CTS by explicitly stating an existing requirement that the Containment Specification Actions be taken when the Containment LCO is not met as a result of containment isolation valve leakage exceeding limits.

This change is acceptable because it reinforces the existing CTS requirement to meet overall containment leakage limits. This change is designated as administrative because it does not result in any technical changes to the CTS.

A.6 CTS 3.6.3.1 Action a requires restoring the inoperable valve(s) to OPERABLE status within 4 hours with one or more of the containment isolation valves inoperable, or taking one of the other specified compensatory actions. CTS 3.6.1.7 Action a requires either restoring an inoperable containment purge supply or exhaust isolation valve or deactivating the automatic valve used to isolate the affected penetration in the closed position within 72 hours. 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 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 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 any technical changes to the CTS.

A.7 The CTS 3.6.3.1 Action and CTS 3.6.1.7 Action d state "The provisions of Specification 3.0.4 are not applicable." CTS 3.0.4 states "Entry into an OPERATIONAL MODE or other specified applicability condition shall not be made unless the conditions of the Limiting Condition for Operation are met without reliance on provisions contained in the ACTION statements unless otherwise excepted." ITS 3.6.3 does not contain the exception to ITS LCO 3.0.4, since ITS LCO 3.0.4 states that when an LCO is not met, entry into a MODE or other specified condition in the Applicability may be made when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. This changes the CTS by deleting an allowance because it is incorporated into ITS LCO 3.0.4.

Attachment 1, Volume 11, Rev. 0, Page 78 of 494

DISCUSSION OF CHANGES
ITS 3.6.3, CONTAINMENT ISOLATION VALVES

This change is considered acceptable because ITS LCO 3.0.4 has been changed such that the CTS allowance is not required to retain the same CTS requirement. ITS 3.6.3 ACTIONS allow continued operation for an unlimited period of time, which together with ITS LCO 3.0.4, result in the same technical requirements as the CTS. This change is designated as administrative because it does not result in any technical changes to the CTS.

A.8 CTS 4.6.3.1.3 (Unit 1) and CTS 4.6.3.1.3.1 (Unit 2) require the isolation time of each power operated or automatic containment isolation valve be determined to be within its limit when tested pursuant to Specification 4.0.5. ITS SR 3.6.3.4 requires verifying the isolation time of each automatic power operated containment isolation valve is within limits, with a Frequency in accordance with the Inservice Testing Program. This changes the CTS by stating that the Frequency is in accordance with the Inservice Testing Program.

The purpose of CTS 4.6.3.1.3 (Unit 1) and CTS 4.6.3.1.3.1 (Unit 2) is to verify the isolation time of each power operated or automatic containment isolation valve is tested in accordance with Specification 4.0.5, which provides the requirements for the Inservice Testing Program. This change is acceptable because the Frequencies regarding the containment isolation valves remain the same. The inservice testing requirements of CTS 4.0.5 have been moved to the Inservice Testing Program contained in Section 5.5 of the ITS. This change is designated as administrative because it does not result in a technical change to the CTS.

A.9 CTS 4.6.1.7.1, the Surveillance Requirement for the containment purge supply and exhaust system valves, states that the Surveillance Requirements of CTS 3/4.6.1.2 and CTS 3/4.6.3.1 apply. The ITS combines CTS 3/4.6.1.7 and CTS 3/4.6.3.1 into one Specification, ITS 3.6.3. In addition, the Surveillances of CTS 3/4.6.1.2, the Containment Leakage Specification, are adequately covered in ITS 3.6.1. Therefore this CTS statement is not necessary and has been deleted.

The CTS 4.6.1.7.1 statement is a cross reference to direct the user to the proper Surveillances for the containment purge supply and exhaust valves, since no additional Surveillances are listed in CTS 3/4.6.1.7. This change is acceptable because the two CTS Specifications (CTS 3/4.6.3.1 and CTS 3/4.6.1.7) have been combined into one in the ITS, and ITS 3.6.1 adequately covers the containment purge valve leakage test (as a part of the Type C leakage testing requirements), thus this statement is not needed. This change is designated as administrative because it does not result in any technical changes to the CTS.

A.10 (Unit 2 only) CTS 3.6.3.1 Action states that with one or more of the containment isolation valve(s) inoperable, "maintain at least one isolation valve OPERABLE in each affected penetration that is open." ITS 3.6.3 Conditions A and B Notes state "Only applicable to penetration flow paths with two containment isolation valves." ITS 3.6.3 Required Action A.1 requires the affected flow path be isolated by one of the means specified when one or more penetration flow paths have one containment isolation valve inoperable. ITS 3.6.3 Required Action A.1 assumes the other isolation valve is OPERABLE for the isolation function. If two valves in a penetration flow path with two containment isolation valves are inoperable, ACTION B provides the appropriate actions to be taken. This

Attachment 1, Volume 11, Rev. 0, Page 79 of 494

changes the Unit 2 CTS by incorporating the concept of assuring that the second means of containment isolation for a penetration flow path is OPERABLE into the Conditions and Required Actions associated with ITS 3.6.3 ACTIONS A and B.

This change is acceptable because when one containment isolation valve in a penetration (with two containment isolation valves) is inoperable, the other containment isolation valve must be OPERABLE or the ITS requires Required Actions be taken for two inoperable containment isolation valves. This retains the CTS 3.6.3.1 concept of maintaining at least one isolation valve OPERABLE in each affected penetration that is open when one or more isolation valves are inoperable. This change is designated as administrative because it does not result in any technical changes to the Unit 2 CTS.

A.11 (Unit 2 only) CTS 3.6.3.1 Action does not include any actions when two containment isolation valves in a single penetration are inoperable and the associated penetration is open. Thus, CTS 3.0.3 must be entered if this occurs. ITS 3.6.3 ACTION B states that with one or more penetration flow paths with two containment isolation valves inoperable, isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange within 1 hour. ITS 3.6.3 ACTION D requires the unit be placed in MODE 3 in 6 hours and MODE 5 in 36 hours if Required Action and associated Completion Time of Condition B is not met. This changes the Unit 2 CTS by stating the Actions to be taken for two containment isolation valves inoperable in the containment isolation valve Specification, rather than relying on CTS 3.0.3, which essentially contains the same Completion Times for isolating the affected penetration or placing the unit outside its MODE of Applicability.

This change is acceptable because it places CTS 3.0.3 requirements into the individual system Specification. This change is designated as administrative because it does not result in any technical changes to the Unit 2 CTS.

MORE RESTRICTIVE CHANGES

M.1 (Unit 1 only) CTS 3.6.3.1 Action b allows 4 hours to isolate the affected penetration when one or more containment isolation valves are inoperable. ITS 3.6.3 Required Action B.1 will only allow 1 hour to isolate the affected penetration when both valves in the same penetration are inoperable. This changes the Unit 1 CTS by decreasing the time allowed to isolate the affected penetration when both containment isolation valves in the same penetration are inoperable.

The purpose of the CTS 3.6.3.1 Action is to provide compensatory actions for inoperable containment isolation valves. However, when both valves in the same penetration are inoperable, the time allowed to isolate the affected penetration should be the same as that allowed to restore an inoperable containment, since the containment isolation valves support the leak tightness of the containment. Therefore, this change is acceptable since the new time allowed is consistent with the time allowed when the containment is inoperable. This change is considered more restrictive because a shorter amount of time is provided to complete the ITS Required Action than is allowed in the Unit 1 CTS.

DISCUSSION OF CHANGES
ITS 3.6.3, CONTAINMENT ISOLATION VALVES

M.2 CTS 3.6.1.7 Action a allows 72 hours to isolate the affected penetration (by closing and deactivating an automatic containment purge valve) when one containment purge valve in a penetration is inoperable. ITS 3.6.3 ACTION A only allows 4 hours to isolate the affected penetration when one containment purge valve in a penetration is inoperable. This changes the CTS by decreasing the time allowed to isolate the affected penetration when one containment purge valve in the penetration is inoperable.

The purpose of the CTS 3.6.1.7 Action is to provide compensatory actions for when containment purge valves are inoperable. However, when one containment purge valve in the penetration is inoperable, the time allowed to isolate the affected penetration should be the same as that allowed to isolate all other similar type penetrations, since the containment purge valves support the leak tightness of the containment. Therefore, this change is acceptable since the new time allowed is consistent with the time allowed in the CTS 3.6.3.1 Actions when other similar containment isolation valves are inoperable. This change is considered more restrictive because a shorter amount of time is provided to complete the ITS Required Action than is allowed in the CTS.

M.3 CTS 3/4.6.1.7 does not provide any specific testing requirements for the containment purge supply and exhaust valves, other than those required by CTS 3/4.6.1.2 and CTS 3/4.6.3.1. ITS SR 3.6.3.1 requires a 31 day verification that the containment purge valves are closed, except for certain allowed reasons (consistent with the stated reasons of CTS 3.6.1.7). This changes the CTS by requiring a new Surveillance verifying containment purge valve position.

The purpose of ITS SR 3.6.3.1 is to ensure that the containment purge valves are only open for the specified reasons. The 31 day verification is consistent with the valve position verification required for non-automatic valves in CTS 4.6.1.1.a.1 and ITS SR 3.6.3.2. This change is acceptable because it provides additional assurance that the containment purge valves are in their correct post-accident position. This change is designated as more restrictive because it adds a new Surveillance Requirement to the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.6.3.1.2 states that each containment isolation valve shall be demonstrated OPERABLE by verifying that on a "Phase A," “Phase B," or "Containment Purge and Exhaust" isolation signal, each "Phase A," "Phase B," and "Containment Purge and Exhaust" isolation valve, respectively, actuates to its isolation position. ITS SR 3.6.3.5 requires 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. Changes associated with not requiring the Surveillance Requirement be conducted on valves locked, sealed, or otherwise secured in position are addressed by DOC L.6.

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.

LESS RESTRICTIVE CHANGES

L.1 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.6.3.1 states that containment purge valves and locked or sealed closed valves may be opened on an intermittent basis under administrative control. ITS 3.6.3 ACTIONS Note 1 states "Penetration flow paths may be unisolated intermittently under administrative controls." This changes the CTS by allowing any penetration to be unisolated on an intermittent basis under administrative control, and not just containment purge valves and locked or sealed closed valves.

The purpose of the CTS 3.6.3.1 is to provide reasonable operational flexibility regarding containment penetrations. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. This change allows any penetration flow path, and not just locked or sealed closed valves, to be opened on an intermittent basis under administrative control, except for the specific exceptions listed. The administrative controls used provide the same level of protection whether the flow paths include locked or sealed closed valves or not. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.2 *(Category 3 – Relaxation of Completion Time)* The Unit 1 CTS 3.6.3.1 Action states 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. The Unit 2 CTS 3.6.3.1 Action states that with one or more of the containment isolation valve(s) inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open, and 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, requires that with one or more penetration flow paths with one containment

DISCUSSION OF CHANGES
ITS 3.6.3, CONTAINMENT ISOLATION VALVES

isolation valve inoperable, the penetration flow path be isolated by means similar to those specified in the CTS within 72 hours. This changes the Unit 1 and Unit 2 CTS by extending the Completion Time from 4 hours to 72 hours when the inoperable containment isolation valve is in a single valve penetration. This also changes the Unit 2 CTS by providing an Action for a single valve penetration, consistent with the Unit 1 CTS, instead of entering CTS 3.0.3.

The purpose of the CTS 3.6.3.1 Action 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, 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 single valve penetration with an inoperable valve, 72 hours is a reasonable time period considering the relative stability of a 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.

L.3 *(Category 4 – Relaxation of Required Action)* The CTS 3.6.3.1 Action states that with one or more of the containment isolation valve(s) inoperable, isolate each affected penetration within 4 hours 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). CTS 4.6.1.1.a.1 requires a periodic verification that the affected penetration remains isolated by the same methods. ITS 3.6.3 Required Action A.1 requires that with one or more penetration flow paths with one containment isolation valve inoperable, 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. ITS 3.6.3 Required Action A.2 requires a periodic verification that the affected penetration remains isolated by one of the methods of 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 CTS 3.6.3.1 Actions b and c and CTS 4.6.1.1.a.1 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.

L.4 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.6.3.1.1 describes 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 CTS 4.6.3.1.1 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 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 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.

L.5 *(Category 10 – 18 to 24 Month Surveillance Frequency Change, Non-Channel Calibration Type)* CTS 4.6.3.1.2 requires the demonstration of OPERABILITY of the containment isolation valves by verifying every 18 months that the automatic containment isolation valves actuate to the isolation position. ITS SR 3.6.3.5 requires the containment isolation valve test to be performed every 24 months. This changes the CTS by extending the Frequency of the Surveillance from 18 months (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

The purpose of CTS 4.6.3.1.2 is to ensure that the automatic containment isolation valves function properly on receipt of an automatic isolation signal. This change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency

Attachment 1, Volume 11, Rev. 0, Page 84 of 494

DISCUSSION OF CHANGES
ITS 3.6.3, CONTAINMENT ISOLATION VALVES

will be minimal. Extending the Surveillance test interval for the containment isolation valve automatic isolation test is acceptable because during the operating cycle, the containment isolation valves are cycled in accordance with the Inservice Testing (IST) Program, or justifications exist to document less frequent testing. This testing ensures that the containment isolation valves will function properly and will detect significant failures. Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.6 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.6.3.1.2 requires verification that each containment isolation valve actuates to its isolation position. ITS SR 3.6.3.5 requires 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. Changes associated with moving the details concerning the types of signals to the Bases are addressed by DOC LA.1.

The purpose of CTS 4.6.3.1.2 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. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.7 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.6.3.1.3 (Unit 1) and CTS 4.6.3.1.3.1 (Unit 2) state that the isolation time of each "power operated or automatic" containment isolation valve shall be determined to be within its limit. ITS SR 3.6.3.4 states "Verify the isolation time of each automatic power operated containment isolation valve is within limits." This changes the CTS by deleting the reference to the power operated containment isolation valves that are not automatic.

The purpose of CTS 4.6.3.1.3 (Unit 1) and CTS 4.6.3.1.3.1 (Unit 2) is to provide assurance that automatic containment isolation valves actuate within the times assumed in the DBA analyses. 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. Remote manual (i.e., non-automatic) power operated valves do not have an isolation time assumed in the DBA analyses since they require operator action. Deleting reference to power operated, non-automatic isolation valve stroke time testing reduces the potential for misinterpreting the requirements of the Surveillance Requirement while maintaining the assumptions of the accident analysis. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.8 *(Category 4 – Relaxation of Required Action)* CTS 4.6.1.1.a requires verification that all non-automatic containment isolation valves that are required to be closed are closed every 31 days. If a non-automatic valve that is supposed to be closed is found open, CTS 3.6.1.1 Action applies. That Action states "Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT 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." ITS 3.6.3 ACTIONS A, B, and C do not differentiate between automatic and non-automatic valves and allow 1 hour, 4 hours, or 72 hours to isolate the affected flow path. ITS 3.6.3 allows continued operation with the inoperable containment isolation valve, but if the affected penetrations are not isolated, a shutdown to MODE 3 in 6 hours and MODE 5 in 36 hours is required. In addition, ITS 3.6.3 ACTIONS Notes 2, 3 and 4 allow separate condition entry for each penetration flow path, require entry into the applicable Conditions and Required Actions for systems made inoperable by containment isolation valves, and require entry into the applicable Conditions and Required Actions for LCO 3.6.1, "Containment," when leakage for a penetration flow path results in exceeding the overall containment leakage rate acceptance criteria. This changes the CTS by providing 1 hour, 4 hours or 72 hours to isolate a penetration flow path affected by an inoperable non-automatic containment isolation valve, and allowing continued operation with an inoperable non-automatic containment isolation valve. This also changes the CTS by allowing separate condition entry for each penetration flow path with an inoperable non-automatic containment isolation valve, requiring entry into the applicable Conditions and Required Actions for systems made inoperable by inoperable non-automatic containment isolation valves, and requiring entry into the applicable Conditions and Required Actions for LCO 3.6.1, "Containment," when leakage through a penetration flow path due to an inoperable non-automatic containment isolation valve results in exceeding the overall containment leakage rate acceptance criteria.

The purpose of the CTS 3.6.1.1 Action is to ensure that overall containment leakage rate does not exceed the accident analysis assumptions. This change is acceptable because the 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 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 makes the actions for an inoperable non-automatic containment isolation valve consistent with the actions for all other types of containment isolation valves and ensures that leakage through a penetration flow path affected by an inoperable non-automatic containment isolation valve is isolated. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.9 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.6.1.1.a.1 requires verification that specified containment penetrations are closed. ITS 3.6.3 Required Actions A.2 and C.2, ITS SR 3.6.3.2 and ITS SR 3.6.3.3 include similar requirements, but contain a Note that allows valves and blind flanges in high radiation areas to be verified administratively. 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.1 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 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.1 and C.1) prior to locking, sealing, or otherwise securing. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.10 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.6.1.1.a.1 requires a verification 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. ITS SR 3.6.3.2 and ITS SR 3.6.3.3 require a verification that each containment isolation manual valve and blind flange that is located outside containment (ITS SR 3.6.3.2) or inside containment (ITS SR 3.6.3.3) and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed. This changes the CTS by not requiring valves locked, sealed or otherwise secured be verified closed as part of the Technical Specification Surveillance Requirements.

The purpose of CTS 4.6.1.1.a.1 is to provide assurance that valves required to be closed are closed. 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. Valves are verified in position prior to being locked, sealed, or otherwise secured, and are not expected to change position because other controls are placed on them by the means of securing their position. Valves that are locked, sealed, or otherwise secured in the closed position do not require verification as part of ITS SR 3.6.3.2 or ITS SR 3.6.3.3 because these valves were verified to be in the correct position upon locking, sealing, or securing. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.11 *(Category 4 - Relaxation of Required Action)* CTS 3.6.1.7 Action a only allows one containment purge supply and one containment purge exhaust valve to be inoperable. If more than one supply valve and one exhaust valve is inoperable, CTS 3.0.3 (which requires a unit shutdown) must be entered. ITS 3.6.3 includes ACTIONS Note 2, which allows separate Condition entry for each containment purge supply and exhaust penetration. ITS 3.6.3 ACTION B also allows both containment purge supply or exhaust valves in the same penetration to be inoperable, provided the affected penetration is isolated within one hour (and verified isolated every 31 days per ITS 3.6.3 Required Action A.2). This changes the CTS by allowing more than one containment purge supply valve and more than one containment purge exhaust valve to be inoperable simultaneously, without requiring a unit shutdown.

The purpose of CTS 3.6.1.7 Action a is to ensure that the containment isolation function is maintained when a containment purge supply and/or exhaust valve is inoperable. This change is acceptable because the containment isolation function can still be maintained: a) with both valves in one or more supply and exhaust penetrations inoperable; or b) one valve in both of the supply penetrations or one valve in both of the exhaust penetrations inoperable. Isolation capability is maintained since the ITS still requires the affected penetration to be isolated. In addition, this allowance (to have more than one valve in a penetration inoperable or to have valves in both redundant penetrations inoperable for a short period of time) is consistent with the allowance currently provided in CTS 3/4.6.3.1 (ITS 3.6.3) for all other containment penetrations. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.12 *(Category 4 - Relaxation of Required Action)* CTS 3.6.1.7 Action b allows operation to continue with a containment purge valve inoperable and the associated penetration isolated only until the next required valve test. ITS 3.6.3 ACTION A does not include this restriction. This changes the CTS by allowing operation with an inoperable containment purge valve for an unlimited amount of time provided the associated penetration is isolated.

The purpose of CTS 3.6.1.7 Action b statement is to only allow operation until the next required Surveillance tests for the inoperable valve. However, this requirement is based upon the assumption that the inoperable valve will fail to meet the Surveillance Requirements in CTS 3/4.6.1.2 and CTS 3/4.6.3.1. For the tests of CTS 3/4.6.1.2, this may not be true, since the test of CTS 3/4.6.1.2 is a leakage test (Type C) and the valve could be inoperable for reasons other than leakage. In addition, if the purge valve leakage is such that the Type C limit is exceeded (there is not an individual purge valve leakage limit), then ITS SR 3.6.1.1 will be failed and ITS 3.6.1 will enforce the proper requirements. As such, the CTS 3.6.1.7 Action b statement is not needed for the leakage test

Attachment 1, Volume 11, Rev. 0, Page 88 of 494

requirements of the containment purge valves. CTS 3/4.6.3.1 has Surveillance requirements to verify the containment purge valves isolate on a proper signal and that their isolation time is within limits. Both of these Surveillances ensure that the containment purge valves can be placed in their post-accident condition. However, with the penetration already isolated as required by CTS 3.6.1.7 Action a (ITS 3.6.3 Required Action A.1) and periodically verified isolated as required by CTS 3.6.1.7 Action b (ITS 3.6.3 Required Action A.2), there is no need to confirm the containment purge valves can be placed in their post-accident position because they already are in the post-accident position. In addition, this allowance (to allow operation for an unlimited time provided the affected penetration is isolated) is consistent with that allowed for all other inoperable automatic containment isolation valves in CTS 3/4.6.3.1. As such, the CTS 3.6.1.7 Action b statement is not necessary for the isolation and stroke time test requirements of the containment purge valves. Therefore, this change is acceptable for the above described reasons. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.13 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.6.3.1.2 requires verification of the containment isolation on a "test" or "isolation" signal. ITS SR 3.6.3.5 specifies that the signal may be from either an "actual" or simulated (i.e., test or isolation) signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal for the test.

The purpose of CTS 4.6.3.1.2 is to ensure that the containment isolation valves (Phase A, Phase B, and Containment Purge and Exhaust 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.

Attachment 1, Volume 11, Rev. 0, Page 89 of 494

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

Containment Isolation Valves ~~(Atmospheric, Subatmospheric, Ice Condenser, and Dual)~~ (1)
3.6.3

CTS

3.6 CONTAINMENT SYSTEMS

LCO 3.6.3.1
LCO 3.6.1.7

3.6.3 Containment Isolation Valves ~~(Atmospheric, Subatmospheric, Ice Condenser, and Dual)~~ (1)

LCO 3.6.3 Each containment isolation valve shall be OPERABLE.

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

ACTIONS

- NOTES -

LCO 3.6.3.1 1. Penetration flow path(s) ~~[except for [42] inch purge valve flow paths]~~ may be unisolated intermittently under administrative controls. (2)

DOCs A.3, L.8, and L.11 2. Separate Condition entry is allowed for each penetration flow path.

DOCs A.4 and L.8 3. Enter applicable Conditions and Required Actions for systems made inoperable by containment isolation valves.

DOCs A.5 and L.8 4. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when isolation valve leakage results in exceeding the overall containment leakage rate acceptance criteria.

3.6.3.1 Actions b and c, 3.6.1.7 Action a, DOC L.8

CONDITION	REQUIRED ACTION	COMPLETION TIME
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] D [and E]]~~.	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

(3) (4) (5)

Attachment 1, Volume 11, Rev. 0, Page 91 of 494

CTS

Containment Isolation Valves ~~(Atmospheric, Subatmospheric, Ice Condenser, and Dual)~~
3.6.3

(1)

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 for isolation devices outside containment <u>AND</u> Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment

4.6.1.1.a, 3.6.1.7 Action b, DOC L.8

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. - NOTE - Only applicable to penetration flow paths with two [or more] containment isolation valves. ③ One or more penetration flow paths with two [or more] containment isolation valves inoperable [for reasons other than Condition[s] D [and E]]. ③ ④ ⑤	B.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
C. - NOTE - Only applicable to penetration flow paths with only one containment isolation valve and a closed system. ⑥ One or more penetration flow paths with one containment isolation valve inoperable.	C.1 AND	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

Unit 1 3.6.3.1 Actions b and c, DOCs A.11, L.8, and L.11

3.6.3.1 Actions b and c, DOC L.8

Containment Isolation Valves (~~Atmospheric, Subatmospheric, Ice Condenser, and Dual~~) 3.6.3 (1)

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	C.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
~~D. [One or more shield building bypass leakage [or purge valve leakage] not within limit.~~	~~D.1~~	~~Restore leakage within limit.~~	~~4 hours for shield building bypass leakage~~ ~~AND~~ ~~24 hours for purge valve leakage]~~
~~E. [One or more penetration flow paths with one or more containment purge valves not within purge valve leakage limits.~~	~~E.1~~ AND	~~Isolate the affected penetration flow path by use of at least one [closed and de-activated automatic valve, closed manual valve, or blind flange].~~	~~24 hours~~

DOC L.8, 4.6.1.1.a

(4) (5)

(4)

Attachment 1, Volume 11, Rev. 0, Page 94 of 494

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	E.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 E.3 Perform SR 3.6.3.7 for the resilient seal purge valves closed to comply with Required Action E.1.	Once per [92] days]
3.6.3.1 Action d, 3.6.1.1 Action, 3.6.1.7 Action C D ~~F~~. Required Action and associated Completion Time not met.	D ~~F~~.1 Be in MODE 3. AND ~~F~~.2 Be in MODE 5.	6 hours 36 hours

4

Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual) 1
3.6.3

CTS

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE		FREQUENCY	
	SR ~~3.6.3.1~~	[Verify each [42] inch purge valve is sealed closed, except for one purge valve in a penetration flow path while in Condition E of this LCO.	~~31 days~~]	4
LCO 3.6.1.7, DOC M.3	SR 3.6.3.2 1	[Verify each [8] inch containment purge valve ~~is closed~~, except when the [8] inch containment 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. or maintenance activities INSERT 1	31 days]	4 7 4 4
4.6.1.1.a	SR 3.6.3.3 2	- NOTE - Valves and blind flanges in high radiation areas may be verified by use of administrative controls. Verify each containment isolation manual valve and blind flange that is located outside 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.	31 days	4
4.6.1.1.a, including footnote *	SR 3.6.3.4 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 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	4
Unit 1 4.6.3.1.3, Unit 2 4.6.3.1.3.1	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~~]	4 7

4

INSERT 1

, provided only valves in one containment purge supply penetration and one containment purge exhaust penetration are open.

Attachment 1, Volume 11, Rev. 0, Page 97 of 494

Containment Isolation Valves ~~(Atmospheric, Subatmospheric, Ice Condenser, and Dual)~~ (1)
3.6.3

CTS

SURVEILLANCE REQUIREMENTS (continued)

CTS	SURVEILLANCE		FREQUENCY	
	~~SR 3.6.3.6~~	~~[Cycle each weight or spring loaded check valve testable during operation through one complete cycle of full travel, and verify each check valve remains closed when the differential pressure in the direction of flow is ≤ [1.2] psid and opens when the differential pressure in the direction of flow is ≥ [1.2] psid and < [5.0] psid.~~	~~92 days]~~	(8)
	~~SR 3.6.3.7~~	~~[Perform leakage rate testing for containment purge valves with resilient seals.~~	~~184 days AND Within 92 days after opening the valve]~~	(4)
4.6.3.1.2	SR 3.6.3.~~8~~ 5	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]~~ 24 months	(4)(7)(9)
	~~SR 3.6.3.9~~	~~[Cycle each weight or spring loaded check valve not testable during operation through one complete cycle of full travel, and verify each check valve remains closed when the differential pressure in the direction of flow is ≤ [1.2] psid and opens when the differential pressure in the direction of flow is ≥ [1.2] psid and < [5.0] psid.~~	~~18 months]~~	(8)
	~~SR 3.6.3.10~~	~~[Verify each [ ] inch containment purge valve is blocked to restrict the valve from opening > [50]%.~~	~~[18] months]~~	(4)
	~~SR 3.6.3.11~~	~~[Verify the combined leakage rate for all shield building bypass leakage paths is ≤ [L_a] when pressurized to ≥ [psig].~~	~~In accordance with the Containment Leakage Rate Testing Program]~~	(5)

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.3, CONTAINMENT ISOLATION VALVES

1. The headings for ISTS 3.6.3 include the parenthetical expression (Atmospheric, Subatmospheric, Ice Condenser, and Dual). This identifying information is not included in the CNP 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. Therefore, necessary editorial changes were made.

2. The restriction in ACTIONS Note 1 concerning purge valves has been deleted, consistent with the current licensing basis.

3. The bracketed term "or more," added to ISTS 3.6.3 Condition A Note, Condition B Note, and Condition B, is not adopted. At CNP, only two valves in each penetration addressed by Conditions A and B are required. This is consistent with the current licensing basis.

4. All ISTS requirements (ACTIONS and Surveillance Requirements) related to containment purge valve leakage have been deleted. The containment purge valves at CNP do not have resilient seats, thus individual leakage limits do not apply. ISTS SR 3.6.3.1 has been deleted since the containment purge valves are not required to be sealed, and ISTS SR 3.6.3.10 has been deleted since the containment purge valves are not required to be blocked from full opening. Furthermore, ISTS SR 3.6.3.2 (ITS SR 3.6.3.1) has been modified to: a) allow the containment purge valves to also be open for maintenance activities; and b) allow only one containment purge supply penetration and one containment purge exhaust penetration to be open (i.e., both supply or both exhaust penetrations cannot be open at the same time). These changes are consistent with the current licensing basis. The remaining Surveillances have been renumbered due to these deletions.

5. Conditions, Surveillance Requirements and other references to shield building bypass are not retained. Shield building bypass is not part of the CNP design.

6. ISTS Condition C Note has been modified to delete the requirement that the penetrations with only one isolation valve be in a closed system. The CNP design includes only two types of penetrations with one containment isolation valve; a penetration that includes a closed system, and a penetration that is an instrument line penetration. The instrument line penetrations are similar to the Boiling Water Reactor excess flow check valve penetrations, which are allowed a 72 hour Completion Time in NUREG-1433 (and do not include the closed system words in the Condition Note). The CNP instrument line penetrations are very small in diameter (1/2 inch) and include an instrument at the end of the line to act as a penetration isolation boundary (which is analogous to a closed system). Therefore, allowing a 72 hour isolation time for these penetrations is acceptable.

7. The brackets are removed and the proper plant specific information/value is provided.

8. ISTS SR 3.6.3.6 and SR 3.6.3.9 have been deleted since these Surveillances are for plants with subatmospheric containments, and CNP has an ice condenser containment.

Attachment 1, Volume 11, Rev. 0, Page 99 of 494

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.3, CONTAINMENT ISOLATION VALVES

9. Typographical/grammatical error corrected to be consistent with similar words in SR 3.6.3.2.

Attachment 1, Volume 11, Rev. 0, Page 100 of 494

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

B 3.6 CONTAINMENT SYSTEMS

B 3.6.3 Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, 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 a containment 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 normally 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 analyses. One of these barriers may be a closed system. INSERT 1 These barriers (typically containment isolation valves) make up the Containment Isolation System. (2) (3) (3)

INSERT 1A

Automatic isolation signals are produced during accident conditions. Containment Phase "A" isolation occurs upon receipt of a safety injection signal. The Phase "A" isolation signal isolates nonessential process lines in order to minimize leakage of fission product radioactivity. Containment Phase "B" isolation occurs upon receipt of a containment pressure – High High signal and isolates the remaining process lines, except systems required for accident mitigation. In addition to the isolation signals listed above, the containment purge supply and exhaust valves ~~receive an isolation signal on a containment high radiation condition~~ INSERT 1B. As a result, the containment isolation valves (and blind flanges) help ensure that the containment atmosphere will be isolated from the environment in the event of a release of fission product radioactivity to the containment atmosphere as a result of a Design Basis Accident (DBA). (1) (1) (1)

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

---

1 **INSERT 1**

In addition, for one penetration both barriers are provided by a single blind flange, since the blind flange has two separate seals (each of the two seals is considered a barrier for the purposes of this LCO). An exception to the requirement for two barriers applies to those penetrations which carry instrument sensing lines. Such penetrations consist of single manual valve (normally open) and a closed system outside containment, which is considered an extension of the containment liner.

1 **INSERT 1A**

Input from Engineered Safety Features Actuation System (ESFAS)

1 **INSERT 1B**

isolate upon receipt of a Containment Radiation - High signal or a Safety Injection Input from ESFAS signal

BASES

BACKGROUND (continued)

Containment

Shutdown Purge System ([42] inch purge valves) Supply and Exhaust (3)

The Shutdown Purge System operates to supply outside air into the containment for ventilation and cooling or heating and may also be used to reduce the concentration of noble gases within containment prior to and during personnel access. The supply and exhaust lines each contain two isolation valves. ~~Because of their large size,~~ the [42] inch purge valves ~~in some units~~ are not qualified for automatic closure from their open position under DBA conditions. ~~Therefore,~~ However the [42] inch purge valves are normally maintained closed in MODES 1, 2, 3, and 4 to ensure the containment boundary is maintained.

INSERT 2

containment (4)

INSERT 3

INSERT 4

~~Minipurge System ([8] inch purge valves)~~

~~The Minipurge System operates to:~~

~~a. Reduce the concentration of noble gases within containment prior to and during personnel access and~~

~~b. Equalize internal and external pressures.~~

~~Since the valves used in the Minipurge System are designed to meet the requirements for automatic containment isolation valves, these valves may be opened as needed in MODES 1, 2, 3, and 4.~~ (3)

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 analyses of any event requiring isolation of containment is applicable to this LCO.

(3)

The DBAs that result in a release of radioactive material within containment are a loss of coolant accident (LOCA) (Ref. 1) ~~and a rod ejection accident (Ref. 1)~~. In the analyses 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 analyses assume that the [42] inch purge valves are closed at event initiation.~~ (3) (2) (3)

3 **INSERT 2**

In addition, it serves as a backup means of pressure relief, in the event that the Containment Pressure Relief System is out of service.

3 **INSERT 3**

(except for the reasons listed in the SR 3.6.3.1)

3 **INSERT 4**

and to minimize the time the associated penetrations are open

BASES

APPLICABLE SAFETY ANALYSES (continued)

and prior to core damage

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.~~ 3

INSERT 5

~~[The single failure criterion required to be imposed in the conduct of plant 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.]~~ 3

~~[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.]~~ 1

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

LCO

Containment isolation valves form a part of the containment boundary. The containment isolation valves' 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 [42] inch purge valves must be maintained sealed closed [or have blocks installed to prevent full opening]. [Blocked purge valves also actuate on an automatic signal.]~~ 1 The valves covered by this LCO are listed ~~along with~~ their associated stroke times ~~in the FSAR (Ref. 2)~~. 3

INSERT 6A

INSERT 6B

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

3 **INSERT 5**

The Containment Purge Supply and Exhaust System is designed in accordance with the requirements of NRC Branch Technical Specification CSB 6-4, Rev. 1. This includes, but is not limited to, an analysis of the impact of purging on Emergency Core Cooling System performance, an evaluation of the radiological consequences of a design basis accident while purging, and limiting containment purge operation to using no more than one supply path and one exhaust path at a time. The containment purge valves have been demonstrated capable of closing against the dynamic forces associated with a LOCA and are assured of receiving a containment ventilation isolation signal.

3 **INSERT 6A**

in the UFSAR (Ref. 3) and

3 **INSERT 6B**

are listed in the Inservice Testing Program

BASES

LCO (continued)

intact. These passive isolation valves/devices are those listed in Reference ~~2~~ 3. 3

~~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. 1

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.~~4~~ 3, "Containment Penetrations." 1

ACTIONS

The ACTIONS are modified by a Note allowing penetration flow paths~~,~~ ~~except for [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, the penetration flow path containing these valves may not be opened under administrative controls. A single purge valve in a penetration flow path may be opened to effect repairs to an inoperable valve, as allowed by SR 3.6.3.1.~~ 1 1

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. 5

BASES

ACTIONS (continued)

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

In the event the isolation valve leakage results in exceeding the overall containment leakage rate, Note 4 directs entry into the applicable Conditions and Required Actions of LCO 3.6.1.

A.1 and A.2

In the event one containment isolation valve in one or more penetration flow paths is inoperable, ~~(except for purge valve or shield building 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 a penetration flow path 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 4 hours. 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. (1)

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 ~~through a system walkdown~~ that those isolation devices outside containment and capable of being mispositioned are in the correct position. The Completion Time of "once per 31 days 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 (TSTF-440)

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 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 C provides the appropriate actions. 1 1

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.

B.1

With two ~~(or more)~~ containment isolation valves in one or more penetration flow paths inoperable, ~~except for purge valve or shield building 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 B.1, the affected penetration must be verified to be isolated on a periodic basis per Required Action 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 control and the probability of their misalignment is low.~~ 1 1 6

BASES

ACTIONS (continued)

Condition B is modified by a Note indicating this Condition is only applicable to penetration flow paths with two (or more) containment isolation valves. Condition A of this LCO addresses the condition of one containment isolation valve inoperable in this type of penetration flow path. 1

C.1 and C.2

With one or more penetration flow paths with one containment isolation valve inoperable, the inoperable valve flow path 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 flow path. Required Action C.1 must be completed within the 72 hour Completion Time. 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 maintaining containment integrity during MODES 1, 2, 3, and 4. In the event the affected penetration flow path is isolated in accordance with Required Action C.1, the affected penetration flow path must be verified to be isolated on a periodic basis. This periodic verification 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 for verifying that each affected penetration flow path is isolated is appropriate because the valves are operated under administrative controls and the probability of their misalignment is low.

INSERT 7 1

INSERT 8 1

Condition 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 Ref. 3.~~ This Note is necessary since this Condition is written to specifically address those penetration flow paths ~~in a closed system~~. 1

INSERT 9 1

Required Action 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

1 **INSERT 7**

for those penetrations with a closed system

1 **INSERT 8**

The specified time period is reasonable for those penetrations without a closed system considering the instrument to act as a penetration isolation boundary (hence, reliability) and the small pipe diameter (1/2 inch) of the affected penetration.

1 **INSERT 9**

with only one containment isolation valve, as shown in Reference 3

Attachment 1, Volume 11, Rev. 0, Page 112 of 494

BASES

ACTIONS (continued)

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.

[D.1

With the shield building bypass leakage rate (SR 3.6.3.11) [or purge valve leakage rate (SR 3.6.3.7)] not within limit, the assumptions of the safety analyses 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 shield building 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 the containment does not exist.] (1)

- REVIEWER'S NOTE -

[The bracketed options provided in ACTION D reflect options in plant design and options in adopting the associated leakage rate Surveillances.

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

BASES

ACTIONS (continued)

[E.1, E.2, and E.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 flow path 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, closed manual valve, or blind flange]. A purge valve with resilient seals utilized to satisfy Required Action E.1 must have been demonstrated to meet the leakage requirements of SR 3.6.3.7. The specified Completion Time is reasonable, considering that one containment purge valve remains closed so that a gross breach of containment does not exist. 1

In accordance with Required Action E.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, through a system walkdown, that those isolation devices outside 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 E.1, SR 3.6.3.7 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 3.6.3.7, 184 days, is based on an NRC initiative, Generic Issue B-20 (Ref. 4). 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.

BASES

ACTIONS (continued)

~~Required Action E.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.]~~ ①

D ~~F~~.1 and ~~F~~.2 ①

If ~~the~~ any Required Action~~s~~ and associated Completion Time~~s~~ ~~are~~ is not met, ⑦
the ~~plant~~ unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the ~~plant~~ unit 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~~ unit conditions from full power conditions in an orderly manner and without challenging ~~plant~~ unit systems. ③

SURVEILLANCE REQUIREMENTS

~~[SR 3.6.3.1~~

~~Each [42] inch containment purge valve is required to be verified sealed closed at 31 day intervals. This Surveillance is designed to ensure that a gross breach of containment is not caused by an inadvertent or spurious opening of a 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 tightness. The Frequency is a result of an NRC initiative, Generic Issue B-24 (Ref. 5), related to containment purge valve use during plant operations. In the event purge valve leakage requires entry into Condition E, the Surveillance permits opening one purge valve in a penetration flow path to perform repairs.]~~ ①

BASES

SURVEILLANCE REQUIREMENTS (continued)

(1) SR 3.6.3.7 (1) (1)

containment purge supply and exhaust (3)

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.~~ (1) The SR is not required to be met when the minipurge valves are open for the reasons stated. (3) The valves may be opened 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 3.6.3.4. (1) (2)

containment purge

or maintenance activities (1) (3)

SR 3.6.3.8 (1)

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 of the containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification ~~through a system walkdown~~, 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. The SR specifies that 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. TSTF-440

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 for ALARA reasons. Therefore, the

BASES

SURVEILLANCE REQUIREMENTS (continued)

probability of misalignment of these containment isolation valves, once they have been verified to be in the proper position, is small.

SR 3.6.3.~~4~~ 3 1

This SR requires verification that each containment isolation manual valve and blind flange located inside 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 of 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. The SR specifies that containment isolation valves that are open under administrative controls are not required to meet the SR during the time 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.

This 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, 3, and 4, 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~~ 4 1

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 analyses. ~~[~~The ~~isolation time and~~ Frequency of this SR ~~are~~ is in accordance with the Inservice Testing Program ~~or 92 days~~~~]~~. 8 1 4

~~[SR 3.6.3.6~~

~~In subatmospheric containments, the check valves that serve a containment isolation function are weight or spring loaded to provide positive closure in the direction of flow. This ensures that these check~~ 1

BASES

SURVEILLANCE REQUIREMENTS (continued)

valves will remain closed when the inside containment atmosphere returns to subatmospheric conditions following a DBA. SR 3.6.3.6 requires verification of the operation of the check valves that are testable during unit operation. The Frequency of 92 days is consistent with the Inservice Testing Program requirement for valve testing on a 92 day Frequency.] 1

[SR 3.6.3.7

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option [A][B], 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. 4). 1

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 (from 184 days) is a prudent measure after a valve has been opened.]

SR 3.6.3.~~8~~ 5 1

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures that each automatic containment isolation valve will actuate to its isolation position on a containment isolation signal. This surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The ~~18~~ 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a ~~plant~~ unit 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 this Surveillance when performed at the ~~18~~ 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. 1 3

BASES

SURVEILLANCE REQUIREMENTS (continued)

[SR 3.6.3.9

In subatmospheric containments, the check valves that serve a containment isolation function are weight or spring loaded to provide positive closure in the direction of flow. This ensures that these check valves will remain closed when the inside containment atmosphere returns to subatmospheric conditions following a DBA. SR 3.6.3.9 verifies the operation of the check valves that are not testable during unit operation. The Frequency of 18 months is based on such factors as the inaccessibility of these valves, the fact that the unit must be shut down to perform the tests, and the successful results of the tests on an 18 month basis during past unit operation.] (1)

[SR 3.6.3.10

- 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. (1)

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.]

[SR 3.6.3.11

This SR ensures that the combined leakage rate of all shield building 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. (1)

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~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.~~ (1)

~~[Bypass leakage is considered part of L_a.~~

~~- REVIEWER'S NOTE -~~

~~Unless specifically exempted.]]~~

REFERENCES

1. U FSAR, Section ~~[15]~~ 14.3.4

2. UFSAR, Section 14.2.6

3. ~~2.~~ U FSAR, ~~Section [6.2]~~ Table 5.4-1 (3)

~~3. Standard Review Plan 6.2.4.~~

~~4. Generic Issue B-20, "Containment Leakage Due to Seal Deterioration."~~

~~5. Generic Issue B-24.~~

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.3 BASES, CONTAINMENT ISOLATION VALVES

1. Changes are made to reflect those changes made to the ISTS. The subsequent requirements are renumbered or revised, where applicable, to reflect the changes.

2. The Bases are changed to eliminate a statement classifying check valves as active devices. Information Report SECY-77-439, dated August 17, 1977, states "Check valves are classified as active components for the purposes of functional specification, inservice inspection, testing, and valve design (re: Regulatory Guide 1.146). Check valves are classified as passive components for the purposes of single failure and system design." The reference in the ISTS 3.6.3 Bases that is deleted is part of a discussion that addresses failures of automatic valves for the purposes of single failure. This is not accurate for check valves at CNP.

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

4. The brackets have been removed and the proper plant specific information/value has been provided.

5. Typographical/grammatical error corrected.

6. The words in the ITS 3.6.3 ACTIONS B.1 Bases, concerning how Required Action A.2 works, has been deleted. This description is already in the ACTION A.1, A.2 Bases, and does not need to be repeated. This is consistent with many other Bases descriptions of ACTIONS, which do not include a description of other Conditions' Required Actions that may also be required when in another ACTION. This is also consistent with the BWR ISTS Bases, NUREG-1433 and NUREG-1434.

7. These changes have been made to be consistent with similar phrases in other parts of the ITS Bases and to be consistent with the ITS Condition.

8. The statement that the isolation times of the containment isolation valves are in the Inservice Testing Program has been deleted from ITS SR 3.6.3.4 (ISTS SR 3.6.3.5). The isolation times of the containment isolation valves are in the Inservice Testing Program, and this has already been stated in the second paragraph of the ISTS LCO Bases.

Specific No Significant Hazards Considerations (NSHCs)

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

There are no specific NSHC discussions for this Specification.

Attachment 1, Volume 11, Rev. 0, Page 123 of 494

ATTACHMENT 4

ITS 3.6.4, Containment Pressure

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

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

INTERNAL PRESSURE

LIMITING CONDITION FOR OPERATION

LCO 3.6.4 3.6.1.4 Primary containment internal pressure shall be maintained between -1.5 and +0.3 psig.

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 within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1 4.6.1.4 The primary containment internal pressure shall be determined to within the limits at least once per 12 hours.

ITS 3.6.4

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

INTERNAL PRESSURE

LIMITING CONDITION FOR OPERATION

LCO 3.6.4 3.6.1.4 Primary containment internal pressure shall be maintained between -1.5 and +0.3 psig.

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 within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1 4.6.1.4 The primary containment internal pressure shall be determined to within the limits at least once per 12 hours.

Attachment 1, Volume 11, Rev. 0, Page 127 of 494

DISCUSSION OF CHANGES
ITS 3.6.4, CONTAINMENT PRESSURE

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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-1431, Rev. 2, "Standard Technical Specifications-Westinghouse 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

Attachment 1, Volume 11, Rev. 0, Page 128 of 494

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

CTS

3.6 CONTAINMENT SYSTEMS

3.6.4A Containment Pressure (Atmospheric, Dual, and Ice Condenser) ①

LCO 3.6.1.4 LCO 3.6.4A Containment pressure shall be ≥ [-0.3] -1.5 psig and ≤ [+1.5] +0.3 psig. ① ②

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 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY	
4.6.1.4	SR 3.6.4A.1 Verify containment pressure is within limits.	12 hours	①

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.4, CONTAINMENT PRESSURE

1. The type of Containment (Atmospheric, Dual, and Ice Condenser) and the Specification designator "A" are deleted since they are unnecessary (only one Containment Pressure Specification is used in the CNP ITS). This information is provided in NUREG-1431, Rev. 2, 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 Subatmospheric Containment Pressure Specification (ISTS 3.6.4B) is not used and is not shown.

2. The brackets are removed and the proper plant specific information/value is provided.

Attachment 1, Volume 11, Rev. 0, Page 131 of 494

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

B 3.6 CONTAINMENT SYSTEMS

B 3.6.4~~A~~ Containment Pressure ~~(Atmospheric, Dual, and Ice Condenser)~~ 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~~ and steam line break (SLB). These limits also prevent the containment pressure from exceeding the containment design negative pressure differential with respect to the outside atmosphere ~~in the event of inadvertent actuation of the Containment Spray System~~ during normal operations. 2 4

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, relative to containment pressure, are the LOCA and SLB, which are analyzed using computer pressure transients. The worst case LOCA generates larger mass and energy release than the worst case SLB. Thus, the LOCA event bounds the SLB event from the containment long term peak pressure standpoint (Ref. 1). INSERT 1

The initial pressure 0.3 condition used in the containment analysis was ~~[17.7]~~ 15.0 psia ~~([3.0]~~ psig). This resulted in a maximum peak pressure from a LOCA of ~~[53.9]~~ 11.85 psig. The containment analysis (Ref. 1) shows that the maximum peak calculated containment pressure, P_a, results from the limiting LOCA. The maximum containment pressure resulting from the worst case LOCA, ~~[44.1]~~ 11.85 psig, does not exceed the containment design pressure, ~~(55)~~ 12 psig. 3

The containment was also designed for an external pressure load equivalent to ~~[-2.5]~~ -2.0 psig. ~~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 [-0.3] psig. This resulted in a minimum pressure inside containment of [-2.0] psig, which is less than the design load.~~ INSERT 2 3 4

4 **INSERT 1**

However, in localized areas, the SLB event results in higher short term subcompartment pressures than a LOCA (Ref. 1).

4 **INSERT 2**

The -1.5 psig limit is a conservative limit for normal operations. In addition, the -1.5 psig limit is assumed in the Transient Mass Distribution analysis, which analyzes the containment response during the blowdown phase of the large break LOCA (Ref. 2).

BASES

APPLICABLE SAFETY ANALYSES (continued)

For certain aspects of transient accident analyses, maximizing the calculated containment pressure is not conservative. In particular, the cooling effectiveness of the Emergency Core Cooling System during the core reflood phase of a LOCA analysis increases with increasing containment backpressure. Therefore, for the reflood phase, the containment backpressure is calculated in a manner designed to conservatively minimize, rather than maximize, the containment pressure response in accordance with 10 CFR 50, Appendix K (Ref. 2). 3 4

Containment pressure satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii). 4

LCO

Maintaining containment pressure at 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 at greater than or equal to the LCO lower pressure limit ensures that the containment will not exceed the design negative differential pressure following the inadvertent actuation of the Containment Spray System. 4

INSERT 3

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 analyses are maintained, the LCO is applicable in MODES 1, 2, 3, and 4. 2

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 pressure within the limits of the LCO is not required in MODE 5 or 6.

ACTIONS

A.1

When containment pressure is not within the limits of the LCO, it 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

If containment pressure cannot be restored to within limits within the required Completion Time, the ~~plant~~ unit must be brought to a MODE in which 4

4 **INSERT 3**

during normal operations. In addition, maintaining containment pressure at greater than or equal to the LCO lower pressure limit ensures that assumptions made in the blowdown phase of the large break LOCA analysis remain valid.

BASES

ACTIONS (continued)

the LCO does not apply. To achieve this status, the ~~plant~~ unit 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~~ unit systems. ④ ④

SURVEILLANCE REQUIREMENTS

SR 3.6.4A.1 ①

Verifying that containment pressure is within limits ensures that unit operation remains within the limits assumed in the containment analysis. The 12 hour Frequency of this SR was developed based on 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.

REFERENCES

1. ~~(U)~~FSAR, Section ~~6.2~~ 14.3.4. ④ ③

2. UFSAR, Section 5.2.2.2 ④

③ ~~2~~. 10 CFR 50, Appendix K. ④

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.4 BASES, CONTAINMENT PRESSURE

1. The type of Containment (Atmospheric, Dual, and Ice Condenser) and the Specification designator "A" are deleted since they are unnecessary (only one Containment Pressure Specification is used in the CNP ITS). This information is provided in NUREG-1431, Rev. 2, 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 Subatmospheric Containment Pressure Specification Bases (ISTS B 3.6.4B) is not used and is not shown.

2. Typographical/grammatical error corrected.

3. The brackets have been removed and the proper plant specific information/value has been provided.

4. 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.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.4, CONTAINMENT PRESSURE

There are no specific NSHC discussions for this Specification.

ATTACHMENT 5

ITS 3.6.5, Containment Air Temperature

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

ITS

A.1

CONTAINMENT SYSTEMS

AIR TEMPERATURE

LIMITING CONDITION FOR OPERATION

LCO 3.6.5

3.6.1.5 Primary containment average air temperature shall be maintained:

a. between 60 and 100°F in the containment upper compartment, and

b. between 60 and 120°F in the containment lower compartment.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTION A

With the containment average air temperature not conforming to the above limits, restore the air temperature to within the limits within 8 hours

ACTION B

or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

SR 3.6.5.1

4.6.1.5.1 The primary containment upper compartment average air temperature shall ~~be the arithmetical average of the temperatures at the following locations:~~

~~Location~~

~~a. UV - Nominal Elev. 712'0"~~

~~b. UV - Nominal Elev. 712'0"~~

~~c. UV - Nominal Elev. 624'10"~~

within limits

LA.1

SR 3.6.5.2

4.6.1.5.2 The primary containment lower compartment average air temperature shall be ~~the arithmetical average of the temperatures at the locations:~~

ITS 3.6.5

ITS

A.1

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.6.5.2

Location

a. LV Nominal Elev. 624' 10-1/2"

b. LV Nominal Elev. 624' 0"

c. LV Nominal Elev. 626' 6"

LA.1

SR 3.6.5.1, SR 3.6.5.2

4.6.1.5.3 The primary containment average air temperatures shall be determined at least once per 24 hours.

ITS 3.6.5

A.1

ITS

CONTAINMENT SYSTEMS

AIR TEMPERATURE

LIMITING CONDITION FOR OPERATION

LCO 3.6.5

3.6.1.5 Primary containment average air temperature shall be maintained:

a. between 60 and 100°F in the containment upper compartment, and

b. between 60 and 120°F in the containment lower compartment.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTION A

ACTION B

With the containment average air temperature not conforming to the above limits, restore the air temperature to within the limits within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

SR 3.6.5.1

4.6.1.5.1 The primary containment upper compartment average air temperature shall ~~be the arithmetical average of the temperatures at the following locations:~~ within limits

LA.1

Location

a. UV - Nominal Elev. 712' 0"

b. UV - Nominal Elev. 712' 0"

c. UV - Nominal Elev. 624' 10"

SR 3.6.5.2

4.6.1.5.2 The primary containment lower compartment average air temperature shall be ~~the arithmetical average of the temperatures at the following locations:~~ within limits

D. C. COOK - UNIT 2 3/4 6-7

ITS 3.6.5

A.1

ITS

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.6.5.2

~~Location~~

~~a. LV - Nominal Elev. 624' 10 1/2"~~

~~b. LV - Nominal Elev. 624' 0"~~

~~c. LV - Nominal Elev. 626' 6"~~

LA.1

SR 3.6.5.1, SR 3.6.5.2

4.6.1.5.3 The primary containment average air temperatures shall be determined at least once per 24 hours.

DISCUSSION OF CHANGES
ITS 3.6.5, CONTAINMENT AIR TEMPERATURE

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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-1431, Rev. 2, "Standard Technical Specifications-Westinghouse 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

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.6.1.5.1 and CTS 4.6.1.5.2 include specific locations where containment temperatures are to be measured and the method of determining the average temperatures. ITS SR 3.6.5.1 and ITS SR 3.6.5.2 do not include these details. 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

Attachment 1, Volume 11, Rev. 0, Page 147 of 494

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

CTS

3.6 CONTAINMENT SYSTEMS

3.6.5B Containment Air Temperature (Ice Condenser) 1

LCO 3.6.1.5 LCO 3.6.5B Containment average air temperature shall be: 1

60 100

a. ≥ [85] °F and ≤ [110] °F for the containment upper compartment and 2

60

b. ≥ [100] °F and ≤ [120] °F for the containment lower compartment. 2

~~- NOTE -~~
~~The minimum containment average air temperature in MODES 2, 3, and 4 may be reduced to [60] °F.~~ 3

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

ACTIONS

	CONDITION	REQUIRED ACTION		COMPLETION TIME
Action	A. Containment average air temperature not within limits.	A.1	Restore containment average air temperature to within limits.	8 hours
Action	B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours
		AND		
		B.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.6.1.5.1, 4.6.1.5.3	SR 3.6.5B.1	Verify containment upper compartment average air temperature is within limits.	24 hours	1

 1

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
4.6.1.5.2, 4.6.1.5.3	SR 3.6.5B.2	Verify containment lower compartment average air temperature is within limits.	24 hours	1

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.5, CONTAINMENT AIR TEMPERATURE

1. The type of Containment (Ice Condenser) and the Specification designator "B" are deleted since they are unnecessary (only one Containment Air Temperature Specification is used in the CNP ITS). This information is provided in NUREG-1431, Rev. 2, 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 Atmospheric and Dual Specification (ISTS 3.6.5A) and the Subatmospheric Specification (ISTS 3.6.5C) are not used and are not shown.

2. The brackets are removed and the proper plant specific information/value is provided.

3. The LCO Note that allows the minimum temperature limit to be reduced to 60°F in MODES 2, 3, and 4 has been deleted since it is unnecessary. The CTS already allow the minimum temperature to be 60°F in MODES 1, 2, 3, and 4; thus the ITS LCO 3.6.5 minimum temperature limit is 60°F, and a Note modifying the minimum temperature is not needed.

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

 (1)

B 3.6 CONTAINMENT SYSTEMS

B 3.6.5B Containment Air Temperature (Ice Condenser) (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~~ and steam line break (SLB). (2)

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 System and the Ice Bed ~~Cooling systems~~ during post accident conditions is dependent upon 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. Operation with containment temperature in excess of the LCO limit violates an initial condition assumed in the accident analysis. (3) (3)

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 analyses for containment (Ref. 1).

The limiting DBAs considered relative to containment air temperature ~~OPERABILITY~~ are the LOCA and SLB. The DBA LOCA and SLB are analyzed using computer codes designed to predict the resultant containment pressure transients. No two DBAs are assumed to occur simultaneously or consecutively. The postulated DBAs are analyzed with regard to Engineered Safety Feature (ESF) systems, assuming the loss of one ESF bus, which is the worst case single active failure, resulting in one train each of Containment Spray System, Residual Heat Removal System, and ~~Air Return System~~ Containment Air Recirculation/Hydrogen Skimmer (CEQ) System being rendered inoperable. (3) (3)

 1

BASES

APPLICABLE SAFETY ANALYSES (continued)

The limiting DBA for the maximum peak containment air temperature is an SLB. For the upper compartment, the initial containment average air temperature assumed in the design basis analyses (Ref. 1) is [110]°F. 57 For the lower compartment, the initial average containment air temperature assumed in the design basis analyses is [120]°F. This resulted in a maximum containment air temperature of [326]°F. 324.7 The design temperature is [250]°F. INSERT 1 4

INSERT 2 The temperature upper limits are also used to establish the environmental qualification operating envelope for both containment compartments. The maximum peak containment air temperature for both containment compartments was calculated to exceed the containment design temperature for only a ~~few seconds~~ short time during the transient. The basis of the containment design temperature, however, is to ensure the performance of safety related equipment inside containment (Ref. ~~2~~ 3). Thermal analyses showed that the time interval during which the containment air temperature exceeded the containment design temperature was short enough that the equipment surface temperatures remained below the design temperature. Therefore, it is concluded that the calculated transient containment air temperatures are acceptable for the DBA SLB. 3

The temperature upper limits are also used in the depressurization analyses to ensure that the minimum pressure limit is maintained following an inadvertent actuation of the Containment Spray System for both containment compartments.

The containment pressure transient is sensitive to the initial air mass in containment and, therefore, to the initial containment air temperature. The limiting DBA for establishing the maximum peak containment internal pressure is a LOCA. The temperature lower limits, [85]°F for the upper 60 compartment and [100]°F for the lower compartment, are used in this analysis to ensure that, in the event of an accident, the maximum containment internal pressure will not be exceeded in either containment compartment. 4

Containment ~~average~~ Air Temperature satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii). 3

TSTF - 401

LCO

During a DBA, with an initial containment average air temperature within the LCO temperature limits, the resultant ~~peak accident temperature is maintained below the containment design temperature. As a result, the~~ INSERT 2A ~~ability of containment to perform its design function is ensured. In MODES 3 and 4, containment air temperature may be as low as 60°F.~~ 5

4

INSERT 1

at P_a is 196°F for the containment upper compartment and 244°F for the containment lower compartment.

3

INSERT 2

The limiting DBA for the peak clad temperature analysis is a large break LOCA. For this analysis, the bounding range for the upper containment initial temperature is 60°F to 100°F and the bounding range for the lower containment initial is 60°F to 120°F.

TSTF-401

INSERT 2A

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.

Attachment 1, Volume 11, Rev. 0, Page 155 of 494

 (1)

BASES

LCO (continued)

because the resultant calculated peak containment accident pressure would not exceed the design pressure due to a lesser amount of energy released from the pipe break in these MODES. (5)

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 in the upper or lower compartment is not within the limit of the LCO, the average air temperature in the affected compartment must be restored to within limits 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.

B.1 and B.2

If the containment average air temperature cannot be restored to within its limits within the required Completion Time, the ~~plant~~ unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the ~~plant~~ unit 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~~ unit conditions from full power conditions in an orderly manner and without challenging ~~plant~~ unit systems. (3) (3) (3)

SURVEILLANCE REQUIREMENTS

SR 3.6.5B.1 and SR 3.6.5B.2 (1)

Verifying that containment average air temperature is within the LCO limits ensures that containment operation remains within the limits assumed for the containment analyses. In order to determine the containment average air temperature, ~~a weighted~~ 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 3 The 24 hour Frequency of these SRs is considered acceptable based on observed slow rates of temperature increase within (3) (3)

3 **INSERT 3**

In the upper compartment, two locations at a nominal elevation of 712 ft 0 inches and a third location at a nominal elevation of 624 ft 10 inches are used. In the lower compartment, the locations at nominal elevations 626 ft 6 inches, 624 ft 10 1/2 inches, and 624 ft 0 inches are used.

Attachment 1, Volume 11, Rev. 0, Page 157 of 494

 (1)

BASES

SURVEILLANCE REQUIREMENTS (continued)

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.

REFERENCES

1. (U)FSAR, Section ~~[6.2]~~ 14.3.4 (3)(4)

2. 10 CFR 50.49.

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.5 BASES, CONTAINMENT AIR TEMPERATURE

1. The type of Containment (Ice Condenser) and the Specification designator "B" are deleted since they are unnecessary (only one Containment Air Temperature Specification is used in the CNP ITS). This information is provided in NUREG-1431, Rev. 2 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 Atmospheric and Dual Specification (ISTS 3.6.5A) and the Subatmospheric Specification (ISTS 3.6.5C) are not used and are not shown.

2. Typographical/grammatical error corrected.

3. 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.

4. The brackets have been removed and the proper plant specific information/value has been provided.

5. Changes are made to reflect those changes made to the ISTS.

Attachment 1, Volume 11, Rev. 0, Page 159 of 494

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.5, CONTAINMENT AIR TEMPERATURE

There are no specific NSHC discussions for this Specification.

ATTACHMENT 6

ITS 3.6.6, Containment Spray System

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

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.6.6 3.6.2.1 Two independent containment spray systems shall be OPERABLE with each spray system capable of taking suction from the RWST and transferring suction to the containment sump. LA.1

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTION A, ACTION B: With one containment spray system inoperable, restore the inoperable spray system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the inoperable spray system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours. A.2

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each containment spray system shall be demonstrated OPERABLE:

SR 3.6.6.1 a. At least once per 31 days 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. A.3

SR 3.6.6.2 b. By verifying that each containment spray pump's developed head at the test flow point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5. L.1

Add proposed Note to SR 3.6.6.3

c. At least once per ~~18~~ 24 months by: L.2

SR 3.6.6.3 1. Verifying that each automatic valve in the flow path not locked, sealed, or otherwise secured in position actuates to its correct position on a actual or Containment Pressure -- High-High test signal. LA.2

Add proposed Note to SR 3.6.6.4

SR 3.6.6.4 2. Verifying that each spray pump starts automatically on a actual or Containment Pressure -- High-High test signal. L.3 LA.2

SR 3.6.6.5 d. At least once per 10 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed. L.3 LA.3 A.3

Attachment 1, Volume 11, Rev. 0, Page 164 of 494

A.1

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Attachment 1, Volume 11, Rev. 0, Page 165 of 494

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.6.6 3.6.2.1 Two ~~independent~~ containment spray systems shall be OPERABLE ~~with each spray system capable of taking suction from the RWST and transferring suction to the containment sump.~~ LA.1

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTION A With one containment spray system inoperable, restore the inoperable spray system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; ~~restore the inoperable spray system to OPERABLE status~~ A.2

ACTION B within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each containment spray system shall be demonstrated OPERABLE:

SR 3.6.6.1 a. At least once per 31 days 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. A.3

SR 3.6.6.2 b. By verifying that each containment spray pump's developed head at the test flow point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5. L.1

Add proposed Note to SR 3.6.6.3

24

c. At least once per ~~18~~ months by: L.2

not locked, sealed, or otherwise secured in position

SR 3.6.6.3 1. Verifying that each automatic valve in the flow path actuates to its correct position on a ~~Containment Pressure -- High-High~~ test signal. LA.2

actual or L.3

Add proposed Note to SR 3.6.6.4

SR 3.6.6.4 2. Verifying that each spray pump starts automatically on a ~~Containment Pressure -- High-High~~ test signal. LA.2

actual or L.3

SR 3.6.6.5 d. At least once per 10 years ~~by performing an air or smoke flow test through each spray header~~ and verifying each spray nozzle is unobstructed. LA.3

A.3

DISCUSSION OF CHANGES
ITS 3.6.6, CONTAINMENT SPRAY SYSTEM

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 CTS 3.6.2.1 Action states that with one Containment Spray System inoperable, if the Containment Spray System is not restored to OPERABLE status within 72 hours, then the unit must be in HOT STANDBY within the next 6 hours, and to either restore the inoperable Containment Spray System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours. With an inoperable containment spray train not restored to OPERABLE status in 72 hours, ITS 3.6.6 ACTION B requires the unit to be in MODE 3 within 6 hours and MODE 5 within 84 hours. ITS 3.6.6 does not contain the second phrase stating that the Containment Spray System (i.e., train) must be restored to OPERABLE status after the unit is in MODE 3, but combines the time allowed for restoration and to be in MODE 5 together into one Required Action to be in MODE 5.

This change is acceptable because the technical requirements have not changed. Restoration of 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.

A.3 CTS 3/4.6.2.1 is applicable in MODES 1, 2, 3, and 4. CTS 4.6.2.1.c.1 requires verification of the automatic actuation of the Containment Spray System valves. CTS 4.6.2.1.c.2 requires verification of the automatic actuation of the Containment Spray System pumps. The requirements for these Surveillances are included in ITS SR 3.6.6.3 and SR 3.6.6.4, respectively; however, a Note has been included in the SRs that states that in MODE 4, only the manual portion of the actuation signal is required. This changes the CTS by not requiring automatic actuation in MODE 4.

The purpose of CTS 3/4.6.2.1 is to ensure the Containment Spray System is OPERABLE to support the safety analysis. The purpose of CTS 4.6.2.1.c.1 is to ensure the Containment Spray System valves operate upon receipt of an actuation signal, while the purpose of CTS 4.6.2.1.c.2 is to ensure that the Containment Spray System pumps start upon receipt of an actuation signal. This change is acceptable because the requirements continue to ensure that the systems are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. CTS Table 3.3-3 (ITS Table 3.3.2-1) specifies the requirements for the Containment Spray Instrumentation, and includes three actuation Functions: Manual Initiation, Automatic Actuation Logic and Actuation Relays, and Containment Pressure - High High. The Manual

DISCUSSION OF CHANGES
ITS 3.6.6, CONTAINMENT SPRAY SYSTEM

Initiation and Automatic Actuation Logic and Actuation Relays Functions are required to be OPERABLE in MODES 1, 2, 3, and 4. The Containment Pressure - High High Function is only required to be OPERABLE in MODES 1, 2, and 3. The Applicability of the Automatic Actuation Logic and Actuation Relays Function is consistent with the Manual Initiation Function, since the relays associated with the automatic actuation logic are also used to support the Manual Initiation Function. The Containment Pressure - High High Function is the only automatic actuation Function and it is only required to be OPERABLE in MODES 1, 2, and 3. Therefore, this change to the Applicability in CTS 4.6.2.1.c.1 and CTS 4.6.2.1.c.2 is made for consistency with the Containment Spray Instrumentation requirements in CTS, which does not require automatic actuation in MODE 4. 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

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.6.2.1 states that two "independent" Containment Spray Systems shall be OPERABLE "with each spray system capable of taking suction from the RWST and transferring suction to the containment sump." ITS 3.6.6 requires two containment spray trains (i.e., systems) to be OPERABLE, but does not include the details of what constitutes OPERABILITY. This changes the CTS by moving the detail that the trains must be "independent" and the description of the capability of the trains (i.e., taking suction from the RWST and transferring suction to the containment sump) 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 that two containment spray trains shall be 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 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.

LA.2 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.6.2.1.c.1 and CTS 4.6.2.1.c.2 require

Attachment 1, Volume 11, Rev. 0, Page 168 of 494

DISCUSSION OF CHANGES
ITS 3.6.6, CONTAINMENT SPRAY SYSTEM

verification of the automatic actuation of containment spray components on a Containment Pressure - High-High signal. ITS SR 3.6.6.3 and SR 3.6.6.4 do not specify the name of the signal, but only specify an actuation signal. This changes the CTS by moving the detail concerning what type of signal is used to conduct the Surveillance Requirements 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 that appropriate containment spray pumps and valves start or actuate on an actuation signal. 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 the Bases 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.

LA.3 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.6.2.1.d states to perform "an air or smoke flow test through each spray header" to verify each spray nozzle is unobstructed. ITS SR 3.6.6.5 states to verify each spray nozzle is unobstructed. This changes the CTS by moving the details of how to perform the test 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 that spray nozzles are verified unobstructed. Also, this change is acceptable because these types of procedural details will be adequately controlled 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 procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 10 – 18 to 24 Month Surveillance Frequency Change, Non-Channel Calibration Type)* CTS 4.6.2.1.c requires each containment spray system to be demonstrated OPERABLE at least once per 18 months by verifying that each automatic valve in the flow path automatically actuates to its correct position and by verifying that each containment spray pump starts automatically. ITS SR 3.6.6.3 requires the same type of test to be performed on the containment spray valves while ITS SR 3.6.6.4 requires the same type of test on the containment spray pumps. The Frequency of testing for both ITS SR 3.6.6.3 and ITS SR 3.6.6.4 is 24 months. This changes the CTS by extending the Frequency

DISCUSSION OF CHANGES
ITS 3.6.6, CONTAINMENT SPRAY SYSTEM

of the Surveillance from 18 months (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

The purpose of CTS 4.6.2.1.c is to demonstrate that all active components will function as required if an accident were to occur. This change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for the containment spray automatic actuation test is acceptable because the system is tested in accordance with the Inservice Testing Program throughout the operating cycle. This testing ensures that the active components (pumps and valves) will function properly and will detect significant failures of the system. Additional justification for extending the Surveillance test interval is that the Containment Spray System, including the actuating logic, is designed to be single failure proof, therefore ensuring system availability in the event of a failure of one containment spray train. Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.2 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.6.2.1.c.1 requires verification that each automatic valve in the flow path actuates to its correct position on a Containment Pressure - High-High signal. ITS SR 3.6.6.3 requires verification that each automatic valve in the flow path that is not locked, sealed, or otherwise secured in position actuates to its correct position on an actual or simulated actuation signal. This changes the CTS by excluding those valves that are locked, sealed, or otherwise secured in position from this test. Removal of the Containment Pressure - High-High signal reference is addressed by DOC LA.2.

The purpose of CTS 4.6.2.1.c.1 is to ensure that the containment spray valves that are required to automatically actuate upon receipt of an actuation signal actuate to their correct position. 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. Those automatic valves that are locked, sealed, or otherwise secured in position are not required to actuate on a Containment Pressure - High High signal in order to perform their safety function because they are already in the required position. Testing such valves would not provide any

DISCUSSION OF CHANGES
ITS 3.6.6, CONTAINMENT SPRAY SYSTEM

additional assurance of OPERABILITY. Valves that are required to automatically 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.

L.3 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.6.2.1.c.1 requires verification of the automatic actuation of the Containment Spray System valves on a "test" signal. CTS 4.6.2.1.c.2 requires verification of the automatic actuation of the Containment Spray System pumps on a "test" signal. ITS SR 3.6.6.3 and ITS SR 3.6.6.4 specify that the signal may be from either an "actual" or simulated (i.e., test) signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal for the test.

The purpose of CTS 4.6.2.1.c.1 is to ensure the Containment Spray System valves operate upon receipt of an actuation signal while the purpose of CTS 4.6.2.1.c.2 is to ensure that the Containment Spray System pumps start 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.

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

CTS

3.6 CONTAINMENT SYSTEMS

3.6.6 Containment Spray System (Ice Condenser) 1

LCO 3.6.2.1

LCO 3.6.6 Two containment spray trains shall be OPERABLE. 1

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
Action	A. One containment spray train inoperable.	A.1 Restore containment spray train 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 84 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.6.2.1.a	SR 3.6.6.1	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	1
4.6.2.1.b	SR 3.6.6.2	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
4.6.2.1.c.1	SR 3.6.6.3	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]~~ 24 months	1 2

INSERT 1 4

4 **INSERT 1**

-NOTE-

In MODE 4, only the manual portion of the actuation signal is required.

Attachment 1, Volume 11, Rev. 0, Page 174 of 494

Containment Spray System (Ice Condenser) 3.6.6C ①

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
4.6.2.1.c.2	SR 3.6.6C.4 ① ④ INSERT 2	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	[18] 24 months	① ②
4.6.2.1.d	SR 3.6.6C.5 ①	Verify each spray nozzle is unobstructed.	~~[At first refueling]~~ ~~AND~~ 10 years	③

4 **INSERT 2**

-NOTE-

In MODE 4, only the manual portion of the actuation signal is required.

Attachment 1, Volume 11, Rev. 0, Page 176 of 494

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.6, CONTAINMENT SPRAY SYSTEM

1. The type of Containment Spray System (Ice Condenser) and the Specification designator "C" are deleted since they are unnecessary (only one Containment Spray Specification is used in the CNP ITS). This information is provided in NUREG-1431, Rev. 2, 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 Containment Spray and Cooling Systems Specifications for Atmospheric and Dual Containments (ISTS 3.6.6A and ISTS 3.6.6B), Quench Spray System Specification for a Subatmospheric Containment (ISTS 3.6.6D), and Recirculation Spray System Specification for Subatmospheric Containment (ISTS 3.6.6E) are not used and are not shown.

2. The brackets are removed and the proper plant specific information/value is provided.

3. CNP Units 1 and 2 have completed the first refueling outages. Therefore, the ISTS SR 3.6.6.5 bracketed Frequency of “At first refueling” is not needed and is removed.

4. ISTS SR 3.6.6.3 and ISTS SR 3.6.6.4 have been modified by a Note stating that in MODE 4, only the manual portion of the actuation signal is required. This change has been made to be consistent with ITS 3.3.2. CTS Table 3.3-3 (ITS Table 3.3.2-1) specifies the requirements for the Containment Spray Instrumentation, and includes three actuation Functions: Manual Initiation, Automatic Actuation Logic and Actuation Relays, and Containment Pressure - High High. The Manual Initiation and Automatic Actuation Logic and Actuation Relays Functions are required to be OPERABLE in MODES 1, 2, 3, and 4. The Containment Pressure - High High Function is only required to be OPERABLE in MODES 1, 2, and 3. The Applicability of the Automatic Actuation Logic and Actuation Relays Function is consistent with the Manual Initiation Function, since the relays associated with the automatic actuation logic are also used to support the Manual Initiation Function. The Containment Pressure - High High Function is the only automatic actuation Function and it is only required to be OPERABLE in MODES 1, 2, and 3. Therefore, this change to the Applicability in ISTS SR 3.6.6.3 and ISTS SR 3.6.6.4 is made for consistency with the Containment Spray Instrumentation Specification in both the CTS and ITS, which does not require automatic actuation in MODE 4.

Attachment 1, Volume 11, Rev. 0, Page 177 of 494

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

 1

B 3.6 CONTAINMENT SYSTEMS

B 3.6.6C Containment Spray System (Ice Condenser) 1

BASES

BACKGROUND

The Containment Spray System provides 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). The Containment Spray System is designed to meet 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)~~. INSERT 1 2

The Containment Spray System consists of two separate trains of equal capacity, each capable of meeting the system design basis spray coverage. Each train includes a containment spray pump, one containment spray heat exchanger, spray headers, nozzles, valves, and piping. Each train is powered from a separate Engineered Safety Feature (ESF) bus. The refueling water storage tank (RWST) supplies borated water to the Containment Spray System during the injection phase of operation. In the recirculation mode of operation, containment spray pump suction is transferred from the RWST to the containment recirculation sump~~(s)~~. 3

The diversion of a portion of the recirculation flow from each train of the Residual Heat Removal (RHR) System to additional redundant spray headers completes the Containment Spray System heat removal capability. Each RHR train is capable of supplying spray coverage, if required, to supplement the Containment Spray System.

(Containment Spray System only)

The Containment Spray System and RHR System provide a spray of cold or subcooled borated water into the upper and lower regions of containment and in dead ended volumes to limit the containment pressure and temperature during a DBA. The RWST solution temperature is an 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 Containment Spray System and RHR 3 3

2

INSERT 1

Plant Specific Design Criteria (PSDC) 41, "Engineered Safety Features Performance Capability," PSDC 42, "Emergency Safety Features Components Capability," PSDC 49, "Reactor Containment Design Basis," PSDC 52, "Containment Heat Removal Systems," PSDC 58, "Inspection of Containment Pressure – Reducing Systems," PSDC 59, "Testing of Containment Pressure – Reducing Systems," PSDC 60, "Testing of Containment Spray System," PSDC 61, "Testing of Operational Sequence of the Containment Pressure – Reducing Systems" (Ref. 1)

Attachment 1, Volume 11, Rev. 0, Page 180 of 494

BASES

BACKGROUND (continued)

heat exchangers. Each train of the Containment Spray System, supplemented by a train of RHR spray, provides adequate spray coverage to meet the system design requirements for containment heat removal.

INSERT 2 The Spray Additive System injects a sodium hydroxide (NaOH) solution into the spray. ~~The resulting alkaline pH of the spray enhances the ability of the spray to scavenge iodine fission products from the containment atmosphere. The NaOH added in 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 the occurrence of chloride and caustic stress corrosion on mechanical systems and components exposed to the fluid.~~ 3 9

High

The Containment Spray System is actuated either automatically by a containment High-3 pressure signal or manually. An automatic actuation opens the containment spray pump discharge valves, starts the two containment spray pumps, and begins the injection phase. A manual actuation of the Containment Spray System requires the operator to actuate two separate switches on the main control board to begin the same sequence. The injection phase continues until an RWST level Low-Low alarm is received. ~~The Low-Low alarm for the RWST actuates valves to align the containment spray pump suction to the containment sump and/or signals the operator to manually align the system to the recirculation mode.~~ The Containment Spray System in the 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 operation procedures.

INSERT 3 3
Pressure
a train 3
a
INSERT 4 3
operating 3

The RHR spray operation is initiated manually, when required by the emergency operating procedures, after the Emergency Core Cooling System (ECCS) is operating in the recirculation mode. The RHR sprays are available to supplement the Containment Spray System, if required, in limiting containment pressure. This additional spray capacity would typically be used after the ice bed has been depleted and in the event that containment pressure rises above a predetermined limit. The Containment Spray System is an ESF system. It is designed to ensure that the heat removal capability required during the post accident period can be attained.

The operation of the Containment Spray System, together with the ice condenser, is adequate to assure pressure suppression during the initial

3

INSERT 2

, by an eductor system, using the containment spray pump discharge flow as the motive force

3

INSERT 3

and the valves associated with the Spray Additive System tank

3

INSERT 4

When the RWST has decreased to a level indicating a sufficient volume has been transferred to containment, the operator aligns the containment spray pump suction to the containment recirculation sump.

Containment Spray System (Ice Condenser) 1
B 3.6.6C

BASES

BACKGROUND (continued)

Containment Air Recirculation/Hydrogen Skimmer (CEQ)

blowdown of steam and water from a DBA. During the post blowdown period, the Air Return System (ARS) is automatically started. The ARS returns upper compartment air through the divider barrier to the lower compartment. This serves to equalize pressures in containment and to continue circulating heated air and steam through the ice condenser, where heat is removed by the remaining ice. CEQ System 3

The Containment Spray System limits the temperature and pressure that could be expected following a DBA. Protection of containment integrity limits leakage of fission product radioactivity from containment to the environment.

APPLICABLE SAFETY ANALYSES

the Spray System 3

The limiting DBAs considered relative to containment ~~OPERABILITY~~ are the loss of coolant accident (LOCA) and the steam line break (SLB). The DBA LOCA and SLB are analyzed using computer codes designed to predict the resultant containment pressure and temperature transients. No two DBAs are assumed to occur simultaneously or consecutively. The postulated DBAs are analyzed, in 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, the RHR System, and the ARS being rendered inoperable (Ref. 2). 3

CEQ System

11.85 The DBA analyses show that the maximum peak containment pressure of [44.1] psig results from the LOCA analysis, and is calculated to be less than the containment design pressure. The maximum peak containment 4
324.7 atmosphere temperature of [385] °F results from the SLB analysis and was calculated to exceed the containment design temperature for a few seconds during the DBA SLB. The basis of the containment design temperature, however, is to ensure the OPERABILITY of safety related equipment inside containment (Ref. 3). Thermal analyses showed that the time interval during which the containment atmosphere temperature exceed the containment design temperature was short enough that the equipment surface temperatures remained below the design temperature. Therefore, it is concluded that the calculated transient containment atmosphere temperatures are acceptable for the DBA SLB. short time 4

The modeled Containment Spray System actuation from the containment analysis is based on a response time associated with exceeding the High containment High-3 ~~pressure~~ signal setpoint to achieving full flow through Pressure- the containment spray nozzles. A delayed response time initiation provides conservative analyses of peak calculated containment temperature and pressure responses. The Containment Spray System 3

 1

BASES

APPLICABLE SAFETY ANALYSES (continued) 115 includes

total response time of 45 seconds ~~is composed of~~ signal delay, diesel generator startup, and system startup time. 4 3

For certain aspects of transient accident analyses, maximizing the calculated containment pressure is not conservative. In particular, the ECCS cooling effectiveness during the core reflood phase of a LOCA analysis increases with increasing containment backpressure. For these calculations, the containment backpressure is calculated in a manner designed to conservatively minimize, rather than maximize, the calculated transient containment pressures in accordance with 10 CFR 50, Appendix K (Ref. 4).

~~Inadvertent actuation of the Containment Spray System is evaluated in the analysis, and the resultant reduction in containment pressure is calculated. The maximum calculated reduction in containment pressure resulted in a containment external pressure load of [1.2] psid, which is below the containment design external pressure load.~~ 6

The Containment Spray System satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

During a DBA, one train of Containment Spray System is required to provide the heat removal capability assumed in the safety analyses. Additionally, a minimum of one train of the Containment Spray System, with spray pH adjusted by the Spray Additive System, is required to scavenge iodine fission products from the containment atmosphere and ensure their retention in the containment sump water. To ensure that these requirements are met, two containment spray trains must be OPERABLE with power from two safety related, independent power supplies. Therefore, in the event of an accident, at least one train in each system operates.

exchangers train

Each containment spray ~~System~~ ~~typically~~ includes a spray pump, headers, valves, heat ~~enhancers~~, nozzles, piping, instruments, and controls to ensure an OPERABLE flow path capable of taking suction from the RWST upon an ESF actuation signal ~~and automatically transferring suction to the containment sump~~. 3 7 3

APPLICABILITY

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 System.

 (1)

BASES

APPLICABILITY (continued)

In MODES 5 and 6, the probability and consequences of these events are reduced because of the pressure and temperature limitations of these MODES. Thus, the Containment Spray System is not required to be OPERABLE in MODE 5 or 6.

ACTIONS

A.1

With one containment spray train inoperable, the affected train must be restored to OPERABLE status within 72 hours. The components in this degraded condition are capable of providing 100% of the heat removal and iodine removal needs after an accident. The 72 hour Completion Time was developed taking into account the redundant heat removal and iodine removal capabilities afforded by the OPERABLE train and the low probability of a DBA occurring during this period.

B.1 and B.2

If the affected containment spray train cannot be restored to OPERABLE status within the required Completion Time, the ~~plant~~ unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the ~~plant~~ unit must be brought to at least MODE 3 within 6 hours and to MODE 5 within 84 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required ~~plant~~ unit conditions from full power conditions in an orderly manner and without challenging ~~plant~~ unit systems. The extended interval to reach MODE 5 allows additional time and is reasonable when considering that the driving force for a release of radioactive material from the Reactor Coolant System is reduced in MODE 3. (3)

SURVEILLANCE REQUIREMENTS

SR 3.6.6C.1 (1)

Verifying the correct alignment of manual, power operated, and automatic valves, excluding check valves, in the Containment Spray System provides assurance that the proper flow path exists for Containment Spray System operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since they were verified in the correct position prior to being secured. INSERT 5 (11) This SR does not require any testing or valve manipulation. Rather, it involves verification, ~~through a system walkdown,~~ that those valves outside containment and capable of potentially being mispositioned, are in the correct position. TSTF-440

11 **INSERT 5**

This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves.

Attachment 1, Volume 11, Rev. 0, Page 186 of 494

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.6.2

to an unacceptable level 3

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. 3
Flow and differential head are normal tests of centrifugal pump OM performance required by ~~Section XI of~~ the ASME Code (Ref. 5). Since the containment spray pumps cannot be tested with flow through the spray headers, they are tested on bypass flow. This test confirms one point on the pump design curve and is indicative of overall performance. tests 7
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. 5

SR 3.6.6.3 and SR 3.6.6.4

These SRs require verification that each automatic containment spray valve actuates to its correct position and each containment spray pump starts upon receipt of an actual or simulated containment spray 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~~ 24 month Frequency is based on the need to perform these Surveillances under the conditions that apply during a ~~plant~~ unit outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillances when performed at the ~~18~~ 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. 3 4

INSERT 6 8

~~The surveillance of containment sump isolation valves is also required by SR 3.6.6.3. A single surveillance may be used to satisfy both requirements.~~ 3

SR 3.6.6.5

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. This SR ensures that each spray nozzle is unobstructed and that spray coverage of the containment during an accident is not degraded. Because of the passive design of the nozzle, a test at ~~the first refueling and at~~ 10 year intervals is considered adequate to detect obstruction of the spray nozzles. 8

8

INSERT 6

These Surveillances include a Note that states that in MODE 4, only the manual portion of the actuation signal is required. This is acceptable since the automatic portion of the actuation signal is not required to be OPERABLE by ITS 3.3.2, "Engineered Safety Features Actuation System (ESFAS) Instrumentation."

 (1)

BASES

REFERENCES

1. ~~10 CFR 50, Appendix A, GDC 38, GDC 39, GDC 40, GDC 41, GDC 42, and GDC 43.~~ UFSAR, Section 1.4.7 (2)
2. (4) UFSAR, Section ~~6.2~~ 14.3.4 (3) (4)
3. 10 CFR 50.49.
4. 10 CFR 50, Appendix K.
5. ASME, ~~Boiler and Pressure Vessel Code, Section XI~~. Operation and Maintenance Standards and Guides (OM Codes) (3)

Attachment 1, Volume 11, Rev. 0, Page 189 of 494

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.6 BASES, CONTAINMENT SPRAY SYSTEM

1. The type of Containment Spray System (Ice Condenser) and the Specification designator "C" are deleted since they are unnecessary (only one Containment Spray Specification is used in the CNP ITS). This information is provided in NUREG-1431, Rev. 2, 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 Containment Spray and Cooling Systems Specification Bases for Atmospheric and Dual Containments (ISTS B 3.6.6A and ISTS B 3.6.6B), Quench Spray System Specification Bases for a Subatmospheric Containment (ISTS B 3.6.6D), and Recirculation Spray System Specification Bases for Subatmospheric Containment (ISTS B 3.6.6E) are not used and are not shown.

2. CNP Units 1 and 2 were designed and under construction prior to the promulgation of 10 CFR 50, Appendix A. CNP Units 1 and 2 were designed and constructed to meet the intent of the proposed General Design Criteria, published in 1967. However, the CNP UFSAR contains discussions of the Plant Specific Design Criteria (PSDCs) used in the design of CNP Units 1 and 2. Bases references to the 10 CFR 50, Appendix A criteria have been replaced with references to the appropriate section and description in the UFSAR.

3. 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.

4. The brackets have been removed and the proper plant specific information/value has been provided.

5. The IST Program at CNP Units 1 and 2 is not required to provide information for trend performance. Therefore, these words have been deleted.

6. The Bases ASA section discussion of the inadvertent actuation of the Containment Spray System has been deleted because this incident does not describe how the Containment Spray System mitigates DBAs. In addition, analysis of an inadvertent Containment Spray actuation event is not part of the CNP licensing basis.

7. Typographical/grammatical error corrected

8. Changes are made to reflect those changes made to the Specification.

9. The statements describing explicit details of the design of the Spray Additive System have been deleted. These details are adequately covered by the Spray Additive System Specification (ITS 3.6.7), and do not need to be repeated in this Specification's Bases. The generic statement describing that the Spray Additive System injects sodium hydroxide solution using the Containment Spray System pumps is sufficient.

10. Editorial change made for clarity.

11. Changes are made to be consistent with similar statements in the Bases (e.g., B 3.7.5, B 3.7.7, and B 3.7.8).

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.6, CONTAINMENT SPRAY SYSTEM

There are no specific NSHC discussions for this Specification.

Attachment 1, Volume 11, Rev. 0, Page 192 of 494

ATTACHMENT 7

ITS 3.6.7, Spray Additive System

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

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

SPRAY ADDITIVE SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.6.7 3.6.2.2 The spray additive system shall be OPERABLE with:

SR 3.6.7.2, SR 3.6.7.3 a. A spray additive tank containing a volume between 4000 and 4600 gallons of between 30 and 34 percent 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.~~ LA.1

APPLICABILITY: MODES 1, 2, 3 and 4.

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. A.2

SURVEILLANCE REQUIREMENTS

4.6.2.2 The spray additive system shall be demonstrated OPERABLE:

SR 3.6.7.1 a. At least once per 31 days 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. At least once per 6 months by:

SR 3.6.7.2 1. Verifying the solution level in the tank, and

SR 3.6.7.3 2. Verifying the concentration of the NaOH solution ~~by chemical analysis~~. LA.2

ITS 3.6.7

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

L.1

SURVEILLANCE REQUIREMENTS (Continued)

24 | not locked, sealed, or otherwise secured in position | L.2

SR 3.6.7.4 c. At least once per 18 months by verifying that each automatic valve in the flow path actuates to its correct position on a actual or ~~Containment Pressure -- High-High~~ signal.

LA.3

L.3

SR 3.6.7.5 d. At least once per 5 years by verifying the flow rate from the spray additive tank ~~test line to each containment spray system with the spray pump operating on recirculation.~~

LA.4

ITS 3.6.7

A.1

ITS

CONTAINMENT SYSTEMS

SPRAY ADDITIVE SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.6.7 3.6.2.2 The spray additive system shall be OPERABLE with:

SR 3.6.7.2, SR 3.6.7.3 a. A spray additive tank containing a volume between 4000 and 4600 gallons of between 30 and 34 percent 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.~~ LA.1

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTION A 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;

ACTION B ~~restore the spray additive system to OPERABLE status~~ within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours. A.2

SURVEILLANCE REQUIREMENTS

4.6.2.2 The spray additive system shall be demonstrated OPERABLE:

SR 3.6.7.1 a. At least once per 31 days 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. At least once per 6 months by:

SR 3.6.7.2 1. Verifying the contained solution volume in the tank, and

SR 3.6.7.3 2. Verifying the concentration of the NaOH solution ~~by chemical analysis~~. LA.2

ITS 3.6.7

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

24 L.1

not locked, sealed, or otherwise secured in position L.2

SR 3.6.7.4 c. At least once per ~~18~~ months by verifying that each automatic valve in the flow path actuates to its correct position on a ~~Containment Pressure--High-High~~ test signal. LA.3

actual or L.3

SR 3.6.7.5 d. At least once per 5 years by verifying the flow rate from the spray additive tank ~~test line to each containment spray system with the spray pump operating on recirculation.~~ LA.4

Attachment 1, Volume 11, Rev. 0, Page 198 of 494

DISCUSSION OF CHANGES
ITS 3.6.7, SPRAY ADDITIVE SYSTEM

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 CTS 3.6.2.2 Action states that with the Spray Additive System inoperable, if the Spray Additive System is not restored to OPERABLE status within 72 hours, then the unit must be in HOT STANDBY within the next 6 hours, and to either restore the Spray Additive System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours. With an inoperable Spray Additive System not restored to OPERABLE status in 72 hours, ITS 3.6.7 ACTION B requires the unit to be in MODE 3 within 6 hours and MODE 5 within the 84 hours. ITS 3.6.7 does not contain the second phrase stating that the Spray Additive System (i.e., train) must be restored to OPERABLE status after the unit is in MODE 3, but combines the time allowed for restoration and to be in MODE 5 together into one Required Action to be in MODE 5.

This change is acceptable because the technical requirements have not changed. Restoration of 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.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.6.2.2.b states that, as part of the Spray Additive System, two spray additive eductors each capable of adding NaOH solution from the chemical additive tank to a containment spray system pump flow are required. ITS 3.6.7 states that the Spray Additive System shall be OPERABLE, but the details of what constitutes an OPERABLE system are moved to the Bases. This changes the CTS by moving the details of what constitutes a Spray Additive System to the Bases.

Attachment 1, Volume 11, Rev. 0, Page 199 of 494

DISCUSSION OF CHANGES
ITS 3.6.7, SPRAY ADDITIVE SYSTEM

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 have the Spray Additive System 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 design is being removed from the Technical Specifications.

LA.2 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.6.2.2.b.2 requires the verification of the concentration of the NaOH solution "by chemical analysis." ITS SR 3.6.7.3 also requires verification of the concentration of NaOH solution, but does not include the method to perform the verification. This changes the CTS by moving the specific method (by chemical analysis) to the Bases.

The removal of this detail for performing a Surveillance Requirement 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 the NaOH solution concentration. Also, this change is acceptable because this type 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.

LA.3 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.6.2.2.c requires verification that each automatic spray additive valve in the flow path actuates to its correct position on a Containment Pressure - High-High signal. ITS SR 3.6.7.4 does not specify the signal, but only specifies an actual or simulated actuation signal. This changes the CTS by moving the type of actuation signal to the Bases.

The removal of these details for performing a Surveillance Requirement 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 appropriate equipment actuates upon receipt of an actuation signal. 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.

Attachment 1, Volume 11, Rev. 0, Page 200 of 494

DISCUSSION OF CHANGES
ITS 3.6.7, SPRAY ADDITIVE SYSTEM

LA.4 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.6.2.2.d specifies that the spray additive flow test is accomplished by verifying flow rate from the spray additive tank test line to each Containment Spray System (i.e., train) with the spray pump operating on recirculation. ITS SR 3.6.7.5 states "Verify spray additive flow rate from each solution's flow path." This changes the CTS by moving the details regarding the test method to the Bases.

The removal of these details for performing a Surveillance Requirement 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 spray additive flow rate. 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.

<u>LESS RESTRICTIVE CHANGES</u>

L.1 *(Category 10 – 18 to 24 Month Surveillance Frequency Change, Non-Channel Calibration Type)* CTS 4.6.2.2.c requires verifying that each spray additive automatic valve in the flow path actuates to its correct position at least once per 18 months. ITS SR 3.6.7.4 requires the same type of test to be performed every 24 months. This changes the CTS by extending the Frequency of the Surveillance from 18 months (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

The purpose of CTS 4.6.2.2.c is to demonstrate that all active components will function as required if an accident were to occur. This change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for the spray additive automatic actuation test is acceptable because the valves are tested in accordance with the Inservice Testing Program throughout the operating cycle. This testing ensures that the active valves will function properly and will detect significant failures of the system. Additional justification for extending the Surveillance test interval is that the Spray Additive System, including the actuating logic, is designed to be single failure proof, therefore ensuring system availability in the event of a failure of one spray additive train. Based on the inherent system and component reliability and

Attachment 1, Volume 11, Rev. 0, Page 201 of 494

DISCUSSION OF CHANGES
ITS 3.6.7, SPRAY ADDITIVE SYSTEM

the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.2 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.6.2.2.c requires verification that each automatic valve in the spray additive flow path actuates to its correct position on a Containment Pressure - High High test signal. ITS SR 3.6.7.4 requires verification that each spray additive automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to its correct position on an actual or simulated actuation signal. This changes the CTS by excluding those valves that are locked, sealed, or otherwise secured in position from this test. Removal of the Containment Pressure - High High signal reference is discussed in DOC LA.3.

The purpose of CTS 4.6.2.2.c is to verify that appropriate valves automatically actuate when they receive 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. Proper position of valves is verified before they are locked, sealed, or otherwise secured in position. Administrative controls verify these valves are in their correct position before being locked, sealed, or otherwise secured, so they are not required to actuate on an actuation signal, and verification of their actuation is not required. The verification is to test that they actuate to their correct position, but these valves already are in their correct 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.

L.3 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* Unit 2 CTS 4.6.2.2.c requires verification of the automatic actuation of the Spray Additive System valves on a "test" signal. While Unit 1 CTS 4.6.2.2.c does not use the term "test," it is implied. ITS SR 3.6.7.4 specifies that the signal may be from either an "actual" or simulated (i.e., test) 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 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

Attachment 1, Volume 11, Rev. 0, Page 202 of 494

because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

Attachment 1, Volume 11, Rev. 0, Page 203 of 494

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

CTS

3.6 CONTAINMENT SYSTEMS

3.6.7 Spray Additive System (Atmospheric, Subatmospheric, Ice Condenser, and Dual) ①

3.6.2.2 LCO 3.6.7 The Spray Additive System shall be OPERABLE.

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
Action	A. Spray Additive System inoperable.	A.1 Restore Spray Additive System 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 84 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.6.2.2.a	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	
4.6.2.2.b.1	SR 3.6.7.2	Verify spray additive tank solution volume is ≥ ~~2568~~ 4000 gal and ≤ ~~4000~~ 4600 gal.	184 days	②
4.6.2.2.b.2	SR 3.6.7.3	Verify spray additive tank ~~[NaOH]~~ solution concentration is ≥ ~~[30]~~% and ≤ ~~[32]~~ 34% by weight.	184 days	②

CTS

SURVEILLANCE REQUIREMENTS (continued)

CTS		SURVEILLANCE	FREQUENCY	
4.6.2.2.c	SR 3.6.7.4	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]~~ 24 months	2
4.6.2.2.d	SR 3.6.7.5	Verify spray additive flow ~~[rate]~~ from each solution's flow path.	5 years	2

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.7, SPRAY ADDITIVE SYSTEM

1. The headings for ISTS 3.6.7 include the parenthetical expression (Atmospheric, Subatmospheric, Ice Condenser, and Dual). This identifying information is not included in the CNP 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. Therefore, necessary editorial changes were made.

2. The brackets are removed and the proper plant specific information/value is provided.

Attachment 1, Volume 11, Rev. 0, Page 207 of 494

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

B 3.6 CONTAINMENT SYSTEMS

B 3.6.7 Spray Additive System (Atmospheric, Subatmospheric, Ice Condenser, and Dual) 1

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 resulting from a Design Basis Accident (DBA). 2

aqueous

Radioiodine in its various forms is the fission product of primary concern in the evaluation of a DBA. It is absorbed by the ~~spray from the containment atmosphere~~. To enhance the iodine absorption capacity of the spray, the spray solution is adjusted to an alkaline pH that promotes iodine hydrolysis, in which iodine is converted to nonvolatile forms. Because of its stability when exposed to radiation and elevated temperature, sodium hydroxide (NaOH) is the preferred spray additive. The NaOH added to the spray also ensures a pH value of between 8.5 and 11.0 of the solution recirculated from the containment sump. This pH band minimizes the evolution of iodine as well as the occurrence of chloride and caustic stress corrosion on mechanical systems and components. 2

without chemical reaction 2

Although not credited,

7.0

10.0

Eductor Feed Systems Only 2

The Spray Additive System consists of one spray additive tank that is shared by the two trains of spray additive equipment. Each train of equipment provides a flow path from the spray additive tank to a containment spray pump and consists of an eductor for each containment spray pump, valves, instrumentation, and connecting piping. Each eductor draws the NaOH spray solution from the common tank using a portion of the borated water discharged by the containment spray pump as the motive flow. The eductor mixes the NaOH solution and the borated water and discharges the mixture into the spray pump suction line. ~~The eductors are designed to ensure that the pH of the spray mixture is between 8.5 and 11.0.~~ 2

2

containment

Gravity Feed Systems Only

The Spray Additive System consists of one spray additive tank, two parallel redundant motor operated valves in the line between the additive tank and the refueling water storage tank (RWST), instrumentation, and recirculation pumps. The NaOH solution is added to the spray water by a balanced gravity feed from the additive tank through the connecting piping into a weir within the RWST. There, it mixes with the borated water flowing to the spray pump suction. Because of the hydrostatic 2

BASES

BACKGROUND (continued)

balance between the two tanks, the flow rate of the NaOH is controlled by the volume per foot of height ratio of the two tanks. This ensures a spray mixture pH that is ≥ 8.5 and ≤ 11.0. 2

The Containment Spray System actuation signal opens the valves from the spray additive tank to the spray pump suctions ~~or the containment spray pump start signal opens the valves from the spray additive tank after a 5 minute delay~~. The 28% to 30% NaOH solution is drawn into the spray pump suctions. 30 34 2 The spray additive tank capacity provides for the addition of NaOH solution to all of the water sprayed from the RWST into containment. The percent solution and volume of solution sprayed into containment ensures a long term containment sump pH of ≥ 8.0 and ≤ 9.5. 7.0 10.0 2 This ensures the continued iodine retention effectiveness of the sump water during the recirculation phase of spray operation and also minimizes the occurrence of chloride induced stress corrosion cracking of the stainless steel recirculation piping.

APPLICABLE SAFETY ANALYSES

The Spray Additive System is essential to the removal of airborne iodine within containment following a DBA.

2
INSERT 1

Following the assumed release of radioactive materials into containment, the containment is assumed to leak at its design value volume following the accident. ~~The analysis assumes that 100% of containment is covered by the spray~~ (Ref. 1). 2

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 LCO 3.6.6, "Containment Spray ~~and Cooling~~ Systems."

minimum required volume of the 2

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.

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 provide NaOH injection into the spray flow until the Containment Spray System suction path is switched from the RWST to the containment sump, and to raise the average spray

2

INSERT 1

There are portions of the containment that are not sprayed (e.g., steam generator enclosures and pressurizer enclosure). In order to account for these unsprayed regions, the analysis assumes that removal of iodine takes place only in the sprayed regions, while mass transfer of iodine from unsprayed to sprayed regions accounts for the decrease in the iodine concentration in the unsprayed regions

BASES

LCO (continued)

minimizes the evolution of iodine

solution pH to a level conducive to iodine removal, namely, to between ~~7.2 and 11.0~~ 7.0 and 10.0. This pH range ~~maximizes the effectiveness of the iodine removal mechanism~~ without introducing conditions that may induce caustic stress corrosion cracking of mechanical system components. In addition, it is essential that valves in the Spray Additive System flow paths are properly positioned and that automatic valves are capable of activating to their correct positions. (5) (2)

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 MODE 5 or 6.

ACTIONS

A.1

If the Spray Additive System is inoperable, it must be restored to OPERABLE within 72 hours. The pH adjustment of the Containment Spray System flow for corrosion protection and iodine ~~removal~~ retention (2) enhancement is reduced in this condition. The Containment Spray System ~~would still be~~ is available ~~and~~ or would remove some iodine from the containment atmosphere in the event of a DBA. (3) 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. In addition, if it (15)

B.1 and B.2

If the Spray Additive System cannot be restored to OPERABLE status within the required Completion Time, the ~~plant~~ unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the ~~plant~~ unit 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~~ unit systems. (2) The extended interval to reach MODE 5 allows 48 hours for restoration of the Spray Additive System in MODE 3 and 36 hours to reach MODE 5. This is reasonable when considering ~~the reduced pressure and temperature~~ (4)
allows additional time and ... that the driving force (4)

BASES

ACTIONS (continued)

conditions in MODE 3 for the release of radioactive material from the Reactor Coolant System. 4

is reduced

SURVEILLANCE REQUIREMENTS

SR 3.6.7.1

6

INSERT 2

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, through a system walkdown, that those valves outside containment and capable of potentially being mispositioned are in the correct position. TSTF-440

SR 3.6.7.2

retention 2

To provide effective iodine removal, the containment spray must be an alkaline solution. Since the RWST 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 NaOH solution in the Spray Additive System. The 184 day Frequency was developed 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, so that there is high confidence that a substantial change in level would be detected. 2

SR 3.6.7.3

(by chemical analysis) 2

This SR provides verification of the NaOH 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 184 day Frequency is sufficient to ensure that the concentration level of NaOH 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.

6

INSERT 2

This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves.

Attachment 1, Volume 11, Rev. 0, Page 214 of 494

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.7.4

This SR provides verification that each automatic valve in the Spray Additive System flow path actuates to its correct position. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The 24 ~~[18]~~ month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit ~~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 24 ~~[18]~~ month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. 5 2 5

SR 3.6.7.5

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 every 5 years. This SR provides assurance that the correct amount of NaOH will be metered into the flow path upon Containment Spray System initiation. INSERT 3 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. 2

REFERENCES 1. U FSAR, Chapter 14.3.5.9 ~~[15]~~. 2 5

2

INSERT 3

The test is performed by verifying the flow rate from the spray additive tank test line to each Containment Spray System train with each containment spray pump operating in the recirculation mode.

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.7 BASES, SPRAY ADDITIVE SYSTEM

1. Changes are made to reflect those changes made to the ISTS.

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 were made to the ISTS Required Action A.1 Bases to modify the reference to the Containment Spray System and move it to the end of the paragraph. The ISTS Bases states that the Containment Spray System would still be available and would remove some iodine from the containment atmosphere in the event of a DBA. This statement may not always be true since both Containment Spray Systems could be inoperable while also operating within ISTS 3.6.7 ACTION A.

4. Changes are made to be consistent with similar statements in the Bases (e.g., B 3.6.6).

5. The brackets have been removed and the proper plant specific information/value has been provided.

6. Changes are made to be consistent with similar statements in the Bases (e.g., B 3.7.5, B 3.7.6, and B 3.7.8).

Attachment 1, Volume 11, Rev. 0, Page 217 of 494

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.7, SPRAY ADDITIVE SYSTEM

There are no specific NSHC discussions for this Specification.

Attachment 1, Volume 11, Rev. 0, Page 219 of 494

ATTACHMENT 8

ITS 3.6.8, Hydrogen Recombiners

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

ITS

A.1

ELECTRIC HYDROGEN RECOMBINERS - W

LIMITING CONDITION FOR OPERATION

LA.1

LCO 3.6.8 3.6.4.2 Two ~~independent~~ containment hydrogen recombiner systems shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

Add proposed Required Action A.1 Note — L.1

ACTION A, ACTION C: With one hydrogen recombiner system inoperable, restore the inoperable system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

Add proposed ACTION B — L.2

SURVEILLANCE REQUIREMENTS

4.6.4.2 Each hydrogen recombiner system shall be demonstrated OPERABLE:

SR 3.6.8.1 a. At least once per ~~18~~ 24 months by verifying during a recombiner system functional test ~~that the minimum heater sheath temperature increases to ≥ 700°F within 90 minutes and is maintained for at least 2 hours.~~ L.3 LA.2

b. At least once per ~~18~~ 24 months by: L.3

~~1. Performing a CHANNEL CALIBRATION of all recombiner instrumentation and control circuits.~~ L.4

SR 3.6.8.2 2. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiners ~~(i.e., loose wiring or structural connections, deposits of foreign materials, etc.)~~ LA.2

SR 3.6.8.1 3. Verifying during a recombiner system functional test ~~that the heater sheath temperature increases to ≥ 1200°F within 5 hours and is maintained for at least 4 hours.~~ LA.2

SR 3.6.8.3 4. Verifying the integrity of all heater electrical circuits by performing a continuity and resistance to ground test ~~following the above required functional test. The resistance to ground for any heater phase shall be ≥ 10,000 ohms.~~ LA.2

ITS 3.6.8

ITS

A.1

CONTAINMENT SYSTEMS

ELECTRIC HYDROGEN RECOMBINERS - W

LIMITING CONDITION FOR OPERATION

LA.1

LCO 3.6.8 3.6.4.2 Two independent containment hydrogen recombiner systems shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

Add proposed Required Action A.1 Note — L.1

ACTION A With one hydrogen recombiner system inoperable, restore the inoperable system to OPERABLE status within 30 days

ACTION C or be in at least HOT STANDBY within the next 6 hours.

Add proposed ACTION B — L.2

SURVEILLANCE REQUIREMENTS

4.6.4.2 Each hydrogen recombiner system shall be demonstrated OPERABLE:

24 — L.3

SR 3.6.8.1 a. At least once per 18 months by verifying during a recombiner system functional test that the minimum heater sheath temperature increases to ≥700 °F within 90 minutes and is maintained for at least 2 hours. — LA.2

24 — L.3

b. At least once per 18 months by:

1. Performing a CHANNEL CALIBRATION of all recombiner instrumentation and control circuits. — L.4

SR 3.6.8.2 2. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiners (i.e., loose wiring or structural connections, deposits of foreign materials, etc.). — LA.2

SR 3.6.8.1 3. Verifying during a recombiner system functional test that the heater sheath temperature increases to ≥ 1200°F within 5 hours and is maintained for at least 4 hours. — LA.2

SR 3.6.8.3 4. Verifying the integrity of all heater electrical circuits by performing a continuity and resistance to ground test following the above required functional test. The resistance to ground for any heater phase shall be ≥ 10,000 ohms. — LA.2

DISCUSSION OF CHANGES
ITS 3.6.8, HYDROGEN RECOMBINERS

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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-1431, Rev. 2, "Standard Technical Specifications-Westinghouse 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

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.6.4.2 states that two "independent" containment hydrogen recombiner systems shall be OPERABLE. ITS 3.6.8 also states that two hydrogen recombiners shall be OPERABLE, but does not specify that the hydrogen recombiners are "independent." This changes the CTS by moving the detail that the hydrogen recombiners are "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 still retains the requirement that two hydrogen recombiners shall be 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 design is being removed from the Technical Specifications.

LA.2 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.6.4.2.a, CTS 4.6.4.2.b.2, CTS 4.6.4.2.b.3, and CTS 4.6.4.2.b.4 include details for performance of functional tests, a resistance to ground test, and a visual examination. ITS SR 3.6.8.1, ITS SR 3.6.8.2, and ITS SR 3.6.8.3 together require that each of these three types of tests be performed. This changes CTS by moving the detail of how these tests are performed to the Bases.

Attachment 1, Volume 11, Rev. 0, Page 224 of 494

DISCUSSION OF CHANGES
ITS 3.6.8, HYDROGEN RECOMBINERS

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 the functional test, visual examination, and resistance to ground test. 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

L.1 *(Category 13 - Addition of LCO 3.0.4 Exception)* CTS 3.6.4.2 states, in part, that with one hydrogen recombiner system inoperable, the inoperable system must be restored to OPERABLE status within 30 days or a shutdown is required. Thus, CTS 3.0.4 would preclude changing MODES with a hydrogen recombiner inoperable. ITS 3.6.8 Required Action A.1 specifies the same requirements as the CTS, except ITS Required Action A.1 Note states that "LCO 3.0.4 is not applicable." This changes the CTS by allowing entry into the MODE of Applicability with one hydrogen recombiner system inoperable.

The purpose of CTS 3.6.4.2 is to provide the capability for controlling bulk hydrogen concentration in containment to less than the lower flammable concentration following a design basis accident (DBA). This change is acceptable because the 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 Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. The change allows entry into the MODE of Applicability with one hydrogen recombiner inoperable. If the hydrogen recombiner is not restored to OPERABLE status within 30 days, the unit must be shutdown. During this time period the other hydrogen recombiner must be OPERABLE. Therefore, the capability for controlling bulk hydrogen concentration in containment to less than the lower flammable concentration following a DBA is maintained. This change is designated as less restrictive because the Required Action Note allows entry into the MODE of Applicability with one inoperable hydrogen recombiner system.

L.2 *(Category 3 – Relaxation of Completion Time)* CTS 3.6.4.2 does not provide an Action for two inoperable hydrogen recombiners. Thus, CTS 3.0.3 is required to be entered when both hydrogen recombiners are inoperable. ITS 3.6.8 ACTION B requires that with two hydrogen recombiners inoperable, to verify by administrative means that the hydrogen control function is maintained within one hour, and to restore one hydrogen recombiner to OPERABLE status within

DISCUSSION OF CHANGES
ITS 3.6.8, HYDROGEN RECOMBINERS

7 days. A shutdown is only required if the hydrogen control function is not maintained within 1 hour or if one hydrogen recombiner is not restored to OPERABLE status within 7 days. This changes the CTS by allowing both hydrogen recombiners to be inoperable for 7 days, provided the hydrogen control function is maintained, prior to requiring a unit shutdown, instead of entering CTS 3.0.3 immediately.

The purpose of CTS 3.6.4.2 is to provide the capability for controlling bulk hydrogen concentration in containment to less than the lower flammable concentration following a Design Basis Accident. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the alternate hydrogen control function. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. The change allows 7 days to restore at least one inoperable hydrogen recombiner to OPERABLE status when both hydrogen recombiners are inoperable, instead of entering LCO 3.0.3. The criteria for allowing this additional restoration time verifies that an alternate means of performing the hydrogen control function is available. The alternate means of performing the hydrogen control function is described in letter AEP:NRC:00500, dated January 12, 1981. The description explains that the alternate means of hydrogen control ensures that failure of both recombiner systems will not leave the containment without hydrogen control capability. Seven days is a reasonable time to allow two hydrogen recombiners to be inoperable because the hydrogen control function is maintained and because of the low probability of a LOCA that would generate hydrogen in the amounts capable of exceeding the flammability limit. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

L.3 *(Category 10 – 18 to 24 Month Surveillance Frequency Change, Non-Channel Calibration Type)* CTS 4.6.4.2.a requires the performance of a recombiner functional test to ensure the minimum heater sheath temperatures increase to ≥ 700°F within 90 minutes and is maintained for at least 2 hours. CTS 4.6.4.2.b.3 requires the performance of a recombiner system functional test to ensure the heater sheath temperatures increase to ≥ 1200°F within 5 hours and is maintained for at least 4 hours. CTS 4.6.4.2.b.2 requires the verification through visual examination that there is no evidence of abnormal conditions within the recombiners. CTS 4.6.4.2.b.4 requires the verification of the integrity of all heater electrical circuits by performing a continuity and resistance to ground test following the required functional tests. These tests are required to be performed every 18 months. ITS SR 3.6.8.1, SR 3.6.8.2, and SR 3.6.8.3 require the same testing requirements, however the Surveillance Frequency has been changed to 24 months. This changes the CTS by extending the Frequency of the Surveillance from 18 months (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

Attachment 1, Volume 11, Rev. 0, Page 226 of 494

DISCUSSION OF CHANGES
ITS 3.6.8, HYDROGEN RECOMBINERS

The purpose of CTS 4.6.4.2 is to verify the OPERABILITY of the containment hydrogen recombiner systems. This change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for the containment hydrogen recombiners is acceptable because the containment hydrogen recombiners are designed to be single failure proof, therefore ensuring system availability in the event of a failure of one hydrogen recombiner. Based on the inherent system and component reliability, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data revealed that there were a number of tests indicated as failures. These failures were reviewed and there were no failures indicative of a time-based failure mechanism that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.4 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.6.4.2.b.1 requires performing a CHANNEL CALIBRATION of all instrumentation and control circuits on each hydrogen recombiner once per 18 months. ITS 3.6.8 does not include this requirement. This changes the CTS by deleting a Surveillance Requirement.

The purpose of CTS 4.6.4.2.b.1 is to verify that the hydrogen recombiner instrumentation and control circuits respond correctly to known inputs. This change is acceptable because the deleted Surveillance Requirement is not necessary to be in Technical Specifications 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 give confidence that the equipment can perform its assumed safety function. The requirement to perform the functional test, visual examination, and resistance to ground test is retained and is adequate to verify that each hydrogen recombiner will perform its function when required. The hydrogen recombiners are manually initiated since flammable limits would not be reached until several days after a DBA. A CHANNEL CALIBRATION is still required as part of ITS 3.3.3 for the hydrogen analyzers, which are used to determine when to manually initiate the hydrogen recombiners. 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)

CTS

3.6 CONTAINMENT SYSTEMS

3.6.8 Hydrogen Recombiners ~~(Atmospheric, Subatmospheric, Ice Condenser, and Dual) (if permanently installed)~~ 1

3.6.4.2 LCO 3.6.8 Two hydrogen recombiners shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
Action	A. One hydrogen recombiner inoperable.	A.1 - NOTE - LCO 3.0.4 is not applicable. Restore hydrogen recombiner to OPERABLE status.	 30 days
DOC L.2	B. Two hydrogen recombiners inoperable.	B.1 Verify by administrative means that the hydrogen control function is maintained. AND B.2 Restore one hydrogen recombiner to OPERABLE status.	1 hour ~~AND~~ ~~Once per 12 hours thereafter~~ 3 7 days 2
Action	C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours

CTS

Hydrogen Recombiners ~~(Atmospheric, Subatmospheric, Ice Condenser, and Dual)~~ 1
3.6.8

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE		FREQUENCY
4.6.4.2.a, 4.6.4.2.b.3	SR 3.6.8.1	Perform a system functional test for each hydrogen recombiner.	~~[18]~~ 24 months 2
4.6.4.2.b.2	SR 3.6.8.2	Visually examine each hydrogen recombiner enclosure and verify there is no evidence of abnormal conditions.	~~[18]~~ 24 months 2
4.6.4.2.b.4	SR 3.6.8.3	Perform a resistance to ground test for each heater phase.	~~[18]~~ 24 months 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.8, HYDROGEN RECOMBINERS

1. The headings for ISTS 3.6.8 include the parenthetical expression (Atmospheric, Subatmospheric, Ice Condenser, and Dual (if permanently installed)). This identifying information is not included in the CNP 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. Therefore, necessary editorial changes were made.

2. The brackets are removed and the proper plant specific information/value is provided.

3. The hydrogen control function is maintained by one train of the Distributed Ignition System, one train of the Containment Spray System, and one train of the Containment Air Recirculation/Hydrogen Skimmer System, which are in the ITS. Therefore, as discussed in the second Reviewer's Note to Bases ACTIONS B.1 and B.2, the periodic 12 hour verification is not required.

Attachment 1, Volume 11, Rev. 0, Page 231 of 494

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

B 3.6 CONTAINMENT SYSTEMS

B 3.6.8 Hydrogen Recombiners (Atmospheric, Subatmospheric, Ice Condenser, and Dual) (if permanently installed) (1)

BASES

BACKGROUND

The function of the hydrogen recombiners is to eliminate the potential breach of containment due to a hydrogen oxygen reaction.

Per 10 CFR 50.44, "Standards for Combustible Gas Control Systems in Light-Water-Cooled Reactors" (Ref. 1) and GDC 41, "Containment Atmosphere Cleanup" (Ref. 2), hydrogen recombiners are required to reduce the hydrogen concentration in the containment following a loss of coolant accident (LOCA) or steam line break (SLB). The recombiners accomplish this by recombining hydrogen and oxygen to form water vapor. The vapor remains in containment, thus eliminating any discharge to the environment. The hydrogen recombiners are manually initiated since flammable limits would not be reached until several days hours after a Design Basis Accident (DBA). (2) (3) (3)

Two 100% capacity independent hydrogen recombiner systems are provided. Each consists of controls located in the control room, a power supply and a recombiner. Recombination is accomplished by heating a hydrogen air mixture above 1150°F. The resulting water vapor and discharge gases are cooled prior to discharge from the recombiner. A single recombiner is capable of maintaining the hydrogen concentration in containment below the 4.1 4.0 volume percent (v/o) flammability limit. Two recombiners are provided to meet the requirement for redundancy and independence. Each recombiner is powered from a separate Engineered Safety Features bus, and is provided with a separate power panel and control panel. (3) (3)

APPLICABLE SAFETY ANALYSES

The hydrogen recombiners provide for the capability of controlling the bulk hydrogen concentration in containment to less than the lower flammable concentration of 4.1 4.0 v/o following a DBA. This control would prevent a containment wide hydrogen burn, thus ensuring the pressure and temperature assumed in the analyses are not exceeded. The limiting DBA relative to hydrogen generation is a LOCA. Hydrogen may accumulate in containment following a LOCA as a result of: (3)

a. A metal steam reaction between the zirconium fuel rod cladding and the reactor coolant; (3) (4)

BASES

APPLICABLE SAFETY ANALYSES (continued)

b. Radiolytic decomposition of water in the Reactor Coolant System (RCS) and the containment sump, (3)

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 (3)

d. Corrosion of metals exposed to containment spray and Emergency Core Cooling System solutions.

(4)

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 (2) are used to maximize the amount of hydrogen calculated. (3)

Based on the conservative assumptions used to calculate the hydrogen concentration versus time after a LOCA, the hydrogen concentration in the primary containment would reach 3.5 v/o about ~~6 days~~ (12 hours) after the LOCA and 4.0 v/o about ~~2 days~~ (13 hours) later if no recombiner was functioning (Ref. 3). Initiating the hydrogen recombiners when the primary containment hydrogen concentration reaches 3.5 v/o will maintain the hydrogen concentration in the primary containment below flammability limits (Ref. 4). (3)

The hydrogen recombiners are designed such that, with the conservatively calculated hydrogen generation rates discussed above, a single recombiner is capable of limiting the peak hydrogen concentration in containment to less than 4.0 v/o (Ref. 4). The Hydrogen Purge System is similarly designed such that one of two redundant trains is an adequate backup to the redundant hydrogen recombiners. (5)

The hydrogen recombiners satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii). (3)

LCO

Two hydrogen recombiners must be OPERABLE. This ensures operation of at least one hydrogen recombiner in the event of a worst case single active failure.

Operation with at least one hydrogen recombiner ensures that the post LOCA hydrogen concentration can be prevented from exceeding the flammability limit.

BASES

APPLICABILITY

In MODES 1 and 2, two hydrogen recombiners are required to control the hydrogen concentration within containment below its flammability limit of (4.1) 4.0 v/o following a LOCA, assuming a worst case single failure. (3)

In MODES 3 and 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 hydrogen recombiners is low. Therefore, the hydrogen recombiners are not required in MODE 3 or 4.

In MODES 5 and 6, the probability and consequences of a LOCA are low, due to the pressure and temperature limitations in these MODES. Therefore, hydrogen recombiners are not required in these MODES.

ACTIONS

A.1

With one containment hydrogen recombiner inoperable, the inoperable recombiner must be restored to OPERABLE status within 30 days. In this condition, the remaining OPERABLE hydrogen recombiner is adequate to perform the hydrogen control function. However, the overall reliability is reduced because a single failure in the OPERABLE recombiner could result in reduced hydrogen control capability. The 30 day Completion Time is based on the availability of the other hydrogen recombiner, the small probability of a LOCA ~~or SLB~~ occurring (that would generate an amount of hydrogen that exceeds the flammability limit), and 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. (3)

Required Action A.1 has been modified by a Note that states the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one recombiner is inoperable. This allowance is based on the availability of the other hydrogen recombiner, the small probability of a LOCA ~~or SLB~~ occurring (that would generate an amount of hydrogen that exceeds the flammability limit), and 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.

BASES

ACTIONS (continued)

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.~~ ⑥

With two hydrogen recombiners 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 Recombiner/Hydrogen Ignitor System/ Hydrogen Mixing System/ Containment Air Dilution System/ Containment Inerting System]~~. INSERT 1A ⑦
The 1 hour Completion Time allows a reasonable period of time to verify that a loss of hydrogen control function does not exist.

function is maintained ⑨

~~- 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 once per 12 hours thereafter to ensure its continued availability.~~ ⑥

~~[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.~~ ③-⑤ If the ability to perform the hydrogen control function is maintained, continued operation is permitted with two hydrogen recombiners inoperable for up to 7 days. Seven days is a reasonable time to allow two hydrogen recombiners 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. ①

⑧ INSERT 1

C.1

~~If the inoperable hydrogen recombiner(s) cannot be restored to OPERABLE status within the required Completion Time,~~ the ~~plant~~ unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the ~~plant~~ unit must be brought to at least MODE 3 within 6 hours. The Completion Time of 6 hours is reasonable, based on operating ③

7

INSERT 1A

one train of the Distributed Ignition System, one train of the Containment Spray System, and one train of the Containment Air Recirculation/Hydrogen Skimmer System are OPERABLE

8

INSERT 1

If any Required Action and associated Completion Time is not met,

Attachment 1, Volume 11, Rev. 0, Page 237 of 494

BASES

ACTIONS (continued)

experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging ~~plant~~ unit systems. 3

SURVEILLANCE REQUIREMENTS

SR 3.6.8.1

Performance of a system functional test for each hydrogen recombiner ensures the recombiners are operational and can attain and sustain the temperature necessary for hydrogen recombination. In particular, this SR verifies that the minimum heater sheath temperature increases to ≥ 700°F in ≤ 90 minutes. ~~After reaching 700°F, the power is increased to maximum power for approximately 2 minutes and power is verified to be ≥ 60 kW.~~ INSERT 2 3

Operating experience has shown that these components usually pass the Surveillance when performed at the ~~[18]~~ 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. 6

SR 3.6.8.2 INSERT 3 3

This SR ensures there are no physical problems that could affect recombiner operation. Since the recombiners are mechanically passive, they are not subject to mechanical failure. The only credible failure involves loss of power, blockage of the internal flow, missile impact, etc.

A visual inspection is sufficient to determine abnormal conditions that could cause such failures. The ~~[18]~~ 24 month Frequency for this SR was developed considering the incidence of hydrogen recombiners failing the SR in the past is low. 6

SR 3.6.8.3

This SR requires performance of a resistance to ground test for each heater phase to ensure that there are no detectable grounds in any heater phase. This is accomplished by verifying that the resistance to ground for any heater phase is ≥ 10,000 ohms. INSERT 4 3

The ~~[18]~~ 24 month Frequency for this Surveillance was developed considering the incidence of hydrogen recombiners failing the SR in the past is low. 6

3 **INSERT 2**

and is maintained ≥2 hours, and it verifies that the minimum heater sheath temperature increases to ≥ 1200°F in ≤ 5 hours and is maintained ≥ 4 hours.

3 **INSERT 3**

(e.g., loose wiring or structural connections, deposits of foreign material, etc.)

3 **INSERT 4**

following the completion of SR 3.6.8.1.

Attachment 1, Volume 11, Rev. 0, Page 239 of 494

1

BASES

REFERENCES

1. 10 CFR 50.44.

2. 10 CFR 50, Appendix A, GDC 41. 2

Safety

2. 3. Regulatory Guide 1.7, Revision 1. March 1971 3

4. a FSAR Section 6. 14.3.6.4 3

9

3. UFSAR, Figure 14.3.6-10.

3

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.8 BASES, HYDROGEN RECOMBINERS

1. Changes are made to be consistent with the changes made to the Specification.

2. CNP Units 1 and 2 were designed and under construction prior to the promulgation of 10 CFR 50, Appendix A. CNP Units 1 and 2 were designed and constructed to meet the intent of the proposed General Design Criteria, published in 1967. However, the CNP UFSAR contains discussions of the Plant Specific Design Criteria (PSDCs) used in the design of CNP Units 1 and 2. Bases references to the 10 CFR 50, Appendix A criteria have been replaced with references to the appropriate section of the UFSAR.

3. 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.

4. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

5. The statement in the Applicable Safety Analyses Section concerning the design of the Hydrogen Purge System, which is a backup to the hydrogen recombiners (ISTS only), has been deleted since it is not appropriate to be discussed in this section of the Bases. The backup is discussed in the Bases for ACTIONS B.1 and B.2, since Required Action B.1 requires a backup to be maintained.

6. Reviewer’s Notes are deleted.

7. The brackets have been removed and the proper plant specific information/value has been provided.

8. The words in the ISTS do not convey the complete intent of the actual ISTS Condition and when the Condition should be entered. Therefore, to be consistent with the actual ISTS Condition words, the Bases have been modified.

9. Changes have been made to be consistent with the ISTS Required Action.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.8, HYDROGEN RECOMBINERS

There are no specific NSHC discussions for this Specification.

ATTACHMENT 9

ITS 3.6.9, Distributed Ignition System

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

ITS 3.6.9

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

DISTRIBUTED IGNITION SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.6.9 — 3.6.4.3 Both trains of the Distributed Ignition System shall be OPERABLE. — Add second part of LCO 3.6.9 — L.1

APPLICABILITY: MODES 1 and 2.

ACTION:

ACTION A — With one train of the Distributed Ignition System inoperable:

a. Restore the inoperable train to OPERABLE status within 7 days, or

b. Perform surveillance requirement 4.6.4.3a once per 7 days on the OPERABLE train ~~until the inoperable train is restored to OPERABLE status~~. — A.2

ACTION B — With no OPERABLE hydrogen igniter in one containment region, restore one hydrogen igniter in the affected containment region to OPERABLE status within 7 days,

ACTION C — or be in HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.3 Each train of the Distributed Ignition System shall be demonstrated OPERABLE:

SR 3.6.9.1 — a. Once per ~~92~~ 184 days by energizing the supply breakers and verifying that at least 34 ~~of 35~~ igniters are energized. — LA.1 — L.3

SR 3.6.9.2 — b. Once per ~~92~~ 184 days, by verifying at least one hydrogen igniter is OPERABLE in each containment region. — L.1

SR 3.6.9.3 — c. Once per ~~18~~ 24 months by verifying the temperature of each igniter is a minimum 1700°F. — L.2

Attachment 1, Volume 11, Rev. 0, Page 246 of 494

ITS 3.6.9

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

DISTRIBUTED IGNITION SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.6.9

3.6.4.3 Both trains of the Distributed Ignition System shall be OPERABLE.

Add second part of LCO 3.6.9 — L.1

APPLICABILITY: MODES 1 and 2.

ACTION:

ACTION A

With one train of the Distributed Ignition System inoperable:

a. Restore the inoperable train to OPERABLE status within 7 days, or

b. Perform surveillance requirement 4.6.4.3a once per 7 days on the OPERABLE train ~~until the inoperable train is restored to OPERABLE status~~. — A.2

ACTION B

ACTION C

With no OPERABLE hydrogen igniter in one containment region, restore one hydrogen igniter in the affected containment region to OPERABLE status within 7 days, or be in HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.3 Each train of the Distributed Ignition System shall be demonstrated OPERABLE:

SR 3.6.9.1

a. Once per ~~92~~ days by energizing the supply breakers and verifying that at least 34 ~~of 35~~ igniters are energized. — LA.1

184 — L.3

SR 3.6.9.2

b. Once per ~~92~~ days, by verifying at least one hydrogen igniter is OPERABLE in each containment region. — L.1

SR 3.6.9.3

c. Once per ~~18~~ months by verifying the temperature of each igniter is a minimum 1700°F.

24 — L.2

DISCUSSION OF CHANGES
ITS 3.6.9, DISTRIBUTED IGNITION SYSTEM (DIS)

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 CTS 3.6.4.3 Action b requires the performance of the Surveillance Requirement 4.6.4.3.a once per 7 days on the OPERABLE train until the inoperable train is restored to OPERABLE status. ITS 3.6.9 Required Action A.2 requires the performance of SR 3.6.9.1 on the OPERABLE train once per 7 days under the same conditions. This changes the CTS by deleting the detail that the Surveillance Requirement must be performed until the inoperable train is restored to OPERABLE status.

The purpose of CTS 3.6.4.3 Action b is to ensure the Surveillance Requirement is performed once per 7 days as long as the unit is operating in the Actions. ITS LCO 3.0.2 states that if the LCO is met prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required unless otherwise stated. Since the requirement of CTS 3.6.4.3 Action b is stated in ITS LCO 3.0.2 and it is applicable to ITS 3.6.9, the explicit statement in the Required Action is not necessary. 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

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.6.4.3.a requires the energization of the supply breakers to each train of the Distributed Ignition System (DIS) and the verification that at least 34 of 35 ignitors are energized. ITS SR 3.6.9.1 does not specify the total numbers of ignitors (i.e., 35). This changes the CTS by moving details of the total number of ignitors 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

Attachment 1, Volume 11, Rev. 0, Page 248 of 494

DISCUSSION OF CHANGES
ITS 3.6.9, DISTRIBUTED IGNITION SYSTEM (DIS)

protection of public health and safety. The ITS still retains the requirement to energize each DIS train power supply breaker and verify $\geq$ 34 ignitors are energized in each train. 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.

LESS RESTRICTIVE CHANGES

L.1 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.6.4.3 requires both trains of the Distributed Ignition System (DIS) to be OPERABLE. CTS 4.6.4.3.b requires verification that each DIS train have at least one OPERABLE hydrogen ignitor in each region. Thus, this Surveillance Requirement effectively defines that OPERABILITY of a DIS train includes one hydrogen ignitor per containment region. ITS 3.6.9 requires both Distributed Ignition System trains to be OPERABLE and that each containment region shall have at least one OPERABLE hydrogen ignitor. ITS SR 3.6.9.2 also requires verification that at least one hydrogen ignitor is OPERABLE in each containment region. This changes the CTS by requiring only one OPERABLE hydrogen ignitor in each containment region, instead of the current requirement of one OPERABLE hydrogen ignitor per DIS train in each containment region.

The purpose of CTS 3.6.4.3 is to that the hydrogen in the containment can be burned in a controlled manner. This change is acceptable because the requirements continue to ensure that the structures, systems, and components are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. When one DIS train does not have an OPERABLE hydrogen ignitor in a containment region, the other DIS train is still providing an OPERABLE hydrogen ignitor in the containment region. This remaining hydrogen ignitor is capable of burning the hydrogen in the associated containment region in a controlled manner. In addition, if during a DBA this remaining hydrogen ignitor fails, there would always be ignition capability in the adjacent containment regions that would provide redundant capability by flame propagation to the containment region with no OPERABLE hydrogen ignitors. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.2 *(Category 10 – 18 to 24 Month Surveillance Frequency Change, Non-Channel Calibration Type)* CTS 4.6.4.3.c requires verification that the temperature of each ignitor is a minimum of 1700°F every 18 months. ITS SR 3.6.9.3 requires the same verification every 24 months. This changes the CTS by extending the Frequency of the Surveillance from 18 months (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

DISCUSSION OF CHANGES
ITS 3.6.9, DISTRIBUTED IGNITION SYSTEM (DIS)

The purpose of CTS 4.6.4.3.c is to ensure the surface temperature of each glow plug is measured to be greater than 1700°F to demonstrate that a temperature sufficient for ignition is achieved. This change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for the DIS temperature verification is acceptable because the DIS is verified to OPERABLE during the cycle by energizing the supply breakers and verifying at least 34 ignitors are energized. The DIS is a relatively simple, manually initiated system that does not interface or interact with other systems and is only dependent on power to operate. Thus, there are limited failure mechanisms that could impact the system. The primary operating element associated with the DIS is analogous to a glow plug that provides a localized ignition source for the hydrogen generated in the containment following certain accidents. Additional justification for extending the Surveillance test interval is that the DIS is designed to be single failure proof, therefore ensuring system availability in the event of a failure of one DIS train. Based on the inherent system and component simplicity and reliability, testing during the cycle, system redundancy, and results of the failure analysis evaluation, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.3 *(Category 9 – Surveillance Frequency Change Using GL 91-04 Guidelines, Non-24 Month Type Change)* CTS 4.6.4.3.a requires energizing the supply breakers and verifying at least 34 ignitors per train are energized and CTS 4.6.4.3.b requires verifying at least one hydrogen ignitor per train is OPERABLE in each containment region. These tests are required every 92 days. ITS SR 3.6.9.1 and SR 3.6.9.2 require the performance of similar Surveillances (as modified by DOC L.1), but at a Frequency of 184 days. This changes the CTS by extending the Frequency of the Surveillances from 92 days (i.e., a maximum of 115 days accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 184 days (i.e., a maximum of 230 days accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

The purpose of CTS 4.6.4.3.a and b is to ensure the Distributed Ignition System will function as designed during an analyzed event. An evaluation of the surveillance interval extension was performed, based on the same approach described in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using

DISCUSSION OF CHANGES
ITS 3.6.9, DISTRIBUTED IGNITION SYSTEM (DIS)

this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for these Surveillances is acceptable because the Distributed Ignition System is a relatively simple, manually initiated system that does not interface or interact with other systems and is only dependent on electrical power to operate. Thus there are limited failure mechanisms that could impact the system. The primary operating element associated with the Distributed Ignition System is analogous to a glow plug that provides a localized ignition source for the hydrogen generated in the containment following certain accidents. In addition, there are two independent and redundant trains, each of which is fully capable of performing the required safety function. The surveillance history was reviewed and did not indicate any failures that would impact the ability of the system to carry out its required safety function. Therefore, based on the inherent system and component simplicity and reliability, system redundancy, and the results of the failure analysis evaluation, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 184 day Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (230 days) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

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

D HIS ~~(Ice Condenser)~~ 1
3.6.~~10~~ 9

CTS

3.6 CONTAINMENT SYSTEMS Distributed

3.6.~~10~~ 9 ~~(Hydrogen)~~ Ignition System (~~H~~IS) ~~(Ice Condenser)~~ D 1

3.6.4.3 LCO 3.6.~~10~~ 9 Two ~~H~~IS trains shall be OPERABLE. 1

INSERT 1 2

APPLICABILITY: MODES 1 and 2.

ACTIONS

CTS	CONDITION	REQUIRED ACTION		COMPLETION TIME
Action	A. One ~~H~~IS train inoperable. D	A.1	Restore ~~H~~IS train to OPERABLE status. D	7 days
		OR		
		A.2	Perform SR 3.6.~~10~~ 9.1 on the OPERABLE train.	Once per 7 days
Action	B. One containment region with no OPERABLE hydrogen ignitor.	B.1	Restore one hydrogen ignitor in the affected containment region to OPERABLE status.	7 days
Action	C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	6 hours

1 1

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE		FREQUENCY	
4.6.4.3.a	SR 3.6.~~10~~ 9.1	Energize each ~~H~~IS D train power supply breaker and verify ≥ ~~[32]~~ 34 ignitors are energized in each train.	~~92~~ 184 days	1 3
4.6.4.3.b	SR 3.6.~~10~~ 9.2	Verify at least one hydrogen ignitor is OPERABLE in each containment region.	~~92~~ 184 days	1 4

2

INSERT 1

AND

Each containment region shall have at least one OPERABLE hydrogen ignitor.

D HIS (Ice Condenser) 1
3.6.9

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY
4.6.4.3.c	SR 3.6.9.3	Energize each hydrogen ignitor and verify temperature is ≥ 1700°F.	~~18~~ 24 months

1 3 9

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.9, DISTRIBUTED IGNITION SYSTEM (DIS)

1. The ISTS 3.6.10 title “Hydrogen Ignition System” has been changed to “Distributed Ignition System” consistent with the CNP site specific terminology. The headings for ISTS 3.6.10 include the parenthetical expression (Ice Condenser). This identifying information is not included in the CNP 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, the CNP design does not include the Hydrogen Mixing System. Therefore, ISTS 3.6.9 is not included in the ITS and ISTS 3.6.10 is renumbered as ITS 3.6.9.

2. The second part of the LCO has been added to ensure consistency between the LCO, ACTIONS, and Surveillance Requirements. The ISTS LCO, Actions, and Surveillances do not match up since there is no explicit statement in the LCO requiring at least one hydrogen ignitor to be OPERABLE in each containment region. LCO 3.0.1 requires LCOs to be met during the MODES or other specified conditions in the Applicability. LCO 3.0.2 states that upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met. Currently, if one ignitor is inoperable in each train and the inoperable ignitors are in the same containment region, the LCO is still met. Thus, ACTION B is not required to be entered since the LCO is still met. Therefore, the inclusion of the second portion of the LCO ensures consistency between the LCO, ACTIONS, and Surveillance Requirements.

3. The brackets are removed and the proper plant specific information/value is provided.

4. The Frequency of ITS SR 3.6.9.1 and SR 3.6.9.2 has been changed from 92 days to 184 days. The technical justification for this change is consistent with the guidelines of Generic Letter 91-04, and is discussed in ITS 3.6.9 DOC L.3.

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

D HIS (Ice Condenser) 1
B 3.6.10 9

B 3.6 CONTAINMENT SYSTEMS Distributed 1

B 3.6.10 9 Hydrogen Ignition System (HIS) (Ice Condenser) D

BASES

BACKGROUND

The HIS reduces the potential for breach of primary containment due to a hydrogen oxygen reaction in post accident environments. The HIS is required by 10 CFR 50.44, "Standards for Combustible Gas Control Systems in Light-Water-Cooled Reactors" (Ref. 1), and Appendix A, GDC 41, "Containment Atmosphere Cleanup" (Ref. 2) to reduce the hydrogen concentration in the primary containment following a degraded core accident. The HIS ~~must be capable of handling~~ an amount of hydrogen equivalent to that generated from a metal water reaction involving 75% of the fuel cladding surrounding the active fuel region (excluding the plenum volume). D 1 2 D 1

10 CFR 50.44 (Ref. 1) requires units with ice condenser containments to install suitable hydrogen control systems that would accommodate an amount of hydrogen equivalent to that generated from the reaction of 75% of the fuel cladding with water. The HIS provides this required capability. This requirement was placed on ice condenser units because of their small containment volume and low design pressure (compared with pressurized water reactor dry containments). Calculations indicate that if hydrogen equivalent to that generated from the reaction of 75% of the fuel cladding with water were to collect in the primary containment, the resulting hydrogen concentration would be far above the lower flammability limit such that, if ignited from a random ignition source, the resulting hydrogen burn would seriously challenge the containment and safety systems in the containment. D 1

D
The HIS is based on the concept of controlled ignition using thermal ignitors, designed to be capable of functioning in a post accident environment, seismically supported, and capable of actuation from the control room. A total of [64] 70 ignitors are distributed throughout the various regions of containment in which hydrogen could be released or to which it could flow in significant quantities. The ignitors are arranged in two independent trains such that each containment region has at least two ignitors, one from each train, controlled and powered redundantly so that ignition would occur in each region even if one train failed to energize. 1 3

D
When the HIS is initiated, the ignitor elements are energized and heat up to a surface temperature ≥ [1700]°F. At this temperature, they ignite the hydrogen gas that is present in the airspace in the vicinity of the ignitor. The HIS depends on the dispersed location of the ignitors so that local 1 3 1
D

BASES

BACKGROUND (continued)

pockets of hydrogen at increased concentrations would burn before reaching a hydrogen concentration significantly higher than the lower flammability limit. Hydrogen ignition in the vicinity of the ignitors is assumed to occur when the local hydrogen concentration reaches [8.0] volume percent (v/o) and results in [85]% of the hydrogen present being consumed. (3)

APPLICABLE SAFETY ANALYSES

The D~~H~~IS causes hydrogen in containment to burn in a controlled manner as it accumulates following a degraded core accident (Ref. 6). Burning occurs at the lower flammability concentration, where the resulting temperatures and pressures are relatively benign. Without the system, hydrogen could build up to higher concentrations that could result in a violent reaction if ignited by a random ignition source after such a buildup. (1) (2)

The hydrogen ignitors are not included for mitigation of a Design Basis Accident (DBA) because an amount of hydrogen equivalent to that generated from the reaction of 75% of the fuel cladding with water is far in excess of the hydrogen calculated for the limiting DBA loss of coolant accident (LOCA). The hydrogen concentration resulting from a DBA can be maintained less than the flammability limit using the hydrogen recombiners. The hydrogen ignitors, however, have been shown by probabilistic risk analysis to be a significant contributor to limiting the severity of accident sequences that are commonly found to dominate risk for units with ice condenser containments. The Distributed ~~hydrogen~~ ignit~~ors~~ion System satisfies Criterion 4 of 10 CFR 50.36(c)(2)(ii). (1)

LCO

Two D~~H~~IS trains must be OPERABLE with power from two independent, safety related power supplies. (1)

~~For this unit,~~ An OPERABLE D~~H~~IS train consists of [~~33~~ 34] of [~~33~~ 35] ignitors Capable of being energized ~~on the train~~. (3) (4) (5) (7)

Operation with at least one D~~H~~IS train ensures that the hydrogen in containment can be burned in a controlled manner. Unavailability of both D~~H~~IS trains could lead to hydrogen buildup to higher concentrations, which could result in a violent reaction if ignited. The reaction could take place fast enough to lead to high temperatures and overpressurization of containment and, as a result, breach containment or cause containment leakage rates above those assumed in the safety analyses. Damage to safety related equipment located in containment could also occur. (1)

INSERT 1 (1)

1

INSERT 1

Each containment region must contain at least one OPERABLE hydrogen ignitor. This ensures there is at least one OPERABLE hydrogen ignitor from one of the two DIS trains.

Attachment 1, Volume 11, Rev. 0, Page 260 of 494

D HIS ~~Ice Condenser~~ 1
B 3.6.10 9

BASES D 1

APPLICABILITY

Requiring OPERABILITY in MODES 1 and 2 for the HIS ensures its immediate availability after safety injection and scram actuated on a LOCA initiation. In the post accident environment, the two HIS subsystems are required to control the hydrogen concentration within containment to near its flammability limit of ~~4.1~~ 4.0 v/o assuming a worst case single failure. This prevents overpressurization of containment and damage to safety related equipment and instruments located within containment. D 1 2

In MODES 3 and 4, both the hydrogen production rate and the total hydrogen production after a LOCA would be significantly less than that calculated for the DBA LOCA. Also, because of the limited time in these MODES, the probability of an accident requiring the HIS is low. Therefore, the HIS is not required in MODES 3 and 4. D 1

In MODES 5 and 6, the probability and consequences of a LOCA are reduced due to the pressure and temperature limitations of these MODES. Therefore, the HIS is not required to be OPERABLE in MODES 5 and 6. D 1

ACTIONS

A.1 and A.2 D 1

With one HIS train inoperable, the inoperable train must be restored to OPERABLE status within 7 days or the OPERABLE train must be verified OPERABLE frequently by performance of SR 3.6.9.1. The 7 day Completion Time is based on the low probability of the occurrence of a degraded core event that would generate hydrogen in amounts equivalent to a metal water reaction of 75% of the core cladding, the length of time after the event that operator action would be required to prevent hydrogen accumulation from exceeding this limit, and the low probability of failure of the OPERABLE HIS train. Alternative Required Action A.2, by frequent surveillances, provides assurance that the OPERABLE train continues to be OPERABLE. 9 1 D 1 5

B.1

Condition B is one containment region with no OPERABLE hydrogen ignitor. Thus, while in Condition B, or in Conditions A and B simultaneously, there would always be ignition capability in the adjacent containment regions that would provide redundant capability by flame propagation to the region with no OPERABLE ignitors.

BASES

ACTIONS (continued)

Required Action B.1 calls for the restoration of one hydrogen ignitor in each region to OPERABLE status within 7 days. The 7 day Completion Time is based on the same reasons given under Required Action A.1.

C.1

INSERT 2

The unit must be placed in a MODE in which the LCO does not apply ~~if the HIS subsystem(s) cannot be restored to OPERABLE status within the associated Completion Time~~. This is done by placing the unit in 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~~ unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.10.1

This SR confirms that ≥ [32] of 33 hydrogen ignitors can be successfully energized in each train. The ignitors are simple resistance elements. Therefore, energizing provides assurance of OPERABILITY. The allowance of one inoperable hydrogen ignitor is acceptable because, although one inoperable hydrogen ignitor in a region would compromise redundancy in that region, the containment regions are interconnected so that ignition in one region would cause burning to progress to the others (i.e., there is overlap in each hydrogen ignitor's effectiveness between regions). The Frequency of 92 days has been shown to be acceptable through operating experience.

SR 3.6.10.2

This SR confirms that the two inoperable hydrogen ignitors allowed by SR 3.6.10.1 (i.e., one in each train) are not in the same containment region. The Frequency of 92 days is acceptable based on the Frequency of SR 3.6.10.1, which provides the information for performing this SR.

SR 3.6.10.3

A more detailed functional test is performed every 18 months to verify system OPERABILITY. Each glow plug is visually examined to ensure that it is clean and that the electrical circuitry is energized. All ignitors (glow plugs), including normally inaccessible ignitors, are visually checked for a glow to verify that they are energized. Additionally, the surface temperature of each glow plug is measured to be ≥ [1700]°F to demonstrate that a temperature sufficient for ignition is achieved. The

6

INSERT 2

If any Required Action and associated Completion Time is not met,

Attachment 1, Volume 11, Rev. 0, Page 263 of 494

BASES

SURVEILLANCE REQUIREMENTS (continued) (24) (3)

[18] month Frequency is based on the need to perform this Surveillance (unit) (4) 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 (24) (3) components usually pass the SR when performed at the [18] month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

REFERENCES

1. 10 CFR 50.44.
2. 10 CFR 50, Appendix A, GDC 41. (2)
(2) 3. (U)FSAR, Section [6.2] 14.3.6.6 (4) (3)

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.9 BASES, DISTRIBUTED IGNITION SYSTEM (DIS)

1. Changes have been made to be consistent with changes made to the Specification.

2. CNP Units 1 and 2 were designed and under construction prior to the promulgation of 10 CFR 50, Appendix A. CNP Units 1 and 2 were designed and constructed to meet the intent of the proposed General Design Criteria, published in 1967. However, while the CNP UFSAR contains discussions of the Plant Specific Design Criteria (PSDCs) used in the design of CNP Units 1 and 2, there is no specific PSDC concerning containment atmosphere cleanup (hydrogen). Therefore, Bases references to the 10 CFR 50, Appendix A criteria have been deleted.

3. The brackets are removed and the proper plant specific information/value is provided.

4. 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.

5. Typographical/grammatical error corrected.

6. The words in the ISTS do not convey the complete intent of the actual ISTS Condition and when the Condition should be entered. Therefore, to be consistent with the actual ISTS Condition words, the Bases have been modified.

7. Changes have been made to be consistent with the ISTS.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.9, DISTRIBUTED IGNITION SYSTEM (DIS)

There are no specific NSHC discussions for this Specification.

Attachment 1, Volume 11, Rev. 0, Page 267 of 494

ATTACHMENT 10

ITS 3.6.10, CEQ System

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

ITS 3.6.10

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

CONTAINMENT AIR RECIRCULATION SYSTEMS

LIMITING CONDITION FOR OPERATION

LCO 3.6.10 3.6.5.6 Two ~~independent~~ containment air recirculation systems shall be OPERABLE. LA.1

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTION A — With one containment air recirculation system inoperable, restore the inoperable system to OPERABLE status within 72 hours

ACTION B — or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.6 Each containment air recirculation system shall be demonstrated OPERABLE at least once per 3 months on a ~~STAGGERED TEST BASIS~~ by: L.1

SR 3.6.10.1, SR 3.6.10.4 — a. Verifying that the return air fan starts on an actual or simulated ~~auto-start~~ signal after a 120 ± 12 seconds delay, the motor operated valve in the suction line to the containment's lower compartment opens ~~when the return air fan starts~~ actual or simulated signal, and the return air fan operates for at least 15 minutes (applicable in MODES 1, 2, and 3 only), L.2 LA.2 L.2

SR 3.6.10.2 — b. Verifying that with the return air fan discharge backdraft damper locked closed and the fan motor energized, the static pressure between the fan discharge and the backdraft damper is ≥ 4.0 inches, water gauge,

SR 3.6.10.3 — c. Verifying that with the fan off, the return air fan damper opens when a force of ≤ 11 lbs is applied to the counterweight, and

~~d. Verifying that the return air fan can be manually started from the control room, and the motor operated valve in the suction line to the containment's lower compartment opens when the return air fan starts.~~ L.3

ITS

A.1

CONTAINMENT AIR RECIRCULATION SYSTEMS

LIMITING CONDITION FOR OPERATION

LCO 3.6.10 3.6.5.6 Two ~~independent~~ containment air recirculation systems shall be OPERABLE. LA.1

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTION A — With one containment air recirculation system inoperable, restore the inoperable system to OPERABLE status within 48 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. L.4

ACTION B

SURVEILLANCE REQUIREMENTS

4.6.5.6 Each containment air recirculation system shall be demonstrated OPERABLE at least once per 92 days on a ~~STAGGERED TEST BASIS~~ by: L.1

SR 3.6.10.1, SR 3.6.10.4 a. Verifying that the return air fan starts on an actual or simulated ~~auto-start~~ signal after a 120 ± 12 seconds delay, the motor operated valve in the suction line to the containment's lower compartment opens ~~when the return air fan starts~~, and the return air fan operates for at least 15 minutes (applicable in MODES 1, 2, and 3 only). L.2 actual LA.2 or simulated signal L.2

SR 3.6.10.2 b. Verifying that with the return air fan discharge backdraft damper locked closed and the fan motor energized, the static pressure between the fan discharge and the backdraft damper is ≥ 4.0 inches, water gauge.

SR 3.6.10.3 c. Verifying that with the fan off, the return air fan damper opens when a force of ≤ 11 lbs is applied to the counterweight.

~~d. Verifying that the return air fan can be manually started from the control room, and the motor operated valve in the suction line to the containment's lower compartment opens when the return air fan starts.~~ L.3

DISCUSSION OF CHANGES
ITS 3.6.10, CONTAINMENT AIR RECIRCULATION/HYDROGEN SKIMMER (CEQ) SYSTEM

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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-1431, Rev. 2, "Standard Technical Specifications-Westinghouse 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

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.6.5.6 requires two "independent" containment air recirculation systems (referred to as the Containment Air Recirculation/Hydrogen Skimmer (CEQ) System in the ITS) to be OPERABLE. ITS 3.6.10 requires two Containment Air Recirculation/Hydrogen Skimmer (CEQ) trains to be OPERABLE, but does not specify that the trains are "independent." This changes the CTS by moving the detail that the trains are "independent" 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 that two Containment Air Recirculation/Hydrogen Skimmer (CEQ) trains shall be 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 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.

LA.2 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.6.5.6.a requires verification that the motor operated valve in the suction line to the containment's lower compartment opens "when the return air fan starts." ITS SR 3.6.10.4 requires verification that the

DISCUSSION OF CHANGES
ITS 3.6.10, CONTAINMENT AIR RECIRCULATION/HYDROGEN SKIMMER (CEQ) SYSTEM

motor operated valve in the suction line to the containment lower compartment opens on an "actual" or simulated actuation signal. ITS SR 3.6.10.4 does not specify the name of the actual signal, but specifies an actual actuation signal. This changes the CTS by moving the type of actuation signal to the Bases. The change to allow a simulated signal is discussed in DOC L.2.

The removal of this detail for performing a Surveillance Requirement 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 that appropriate valves actuate on an actuation signal. Also, this change is acceptable because this type 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 the Bases 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

L.1 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.6.5.6 states that each Containment Air Recirculation System shall be demonstrated OPERABLE at least once per 3 months "on a STAGGERED TEST BASIS." The Surveillance Frequency for ITS SR 3.6.10.1, SR 3.6.10.2, SR 3.6.10.3, and SR 3.6.10.4 is also 92 days, but does not include the "STAGGERED TEST BASIS" requirement. This changes the CTS by deleting the requirement to test on a STAGGERED TEST BASIS.

The purpose of CTS 4.6.5.6 is to demonstrate the OPERABILITY of the Containment Air Recirculation System. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The intent of a requirement for staggered testing is to increase reliability of the component/system being tested. A number of studies have been performed which have demonstrated that staggered testing has negligible impact on component reliability. These analytical and subjective analyses have determined that staggered testing 1) is operationally difficult, 2) has negligible impact on component reliability, 3) is not as significant as initially thought, 4) has no impact on failure frequency, 5) introduces additional stress on components such as DGs potentially causing increased component failures rates and component wearout, 6) results in reduced redundancy testing, and 7) increases likelihood of human error by increasing testing intervals. Therefore, the Containment Air Recirculation System staggered testing requirements have been deleted. This change is designated as less restrictive because the intervals between performances of the Surveillances for the two trains can be larger or smaller under the ITS than under the CTS.

DISCUSSION OF CHANGES
ITS 3.6.10, CONTAINMENT AIR RECIRCULATION/HYDROGEN SKIMMER (CEQ) SYSTEM

L.2 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.6.5.6.a requires verification of the automatic actuation of the return air fan on an auto-start signal (i.e., simulated) and that the motor operated valve in the suction line to the containment's lower compartment opens when the return air fan starts (i.e., an actual signal). ITS SR 3.6.10.1 requires verification that each Containment Air Recirculation/Hydrogen Skimmer (CEQ) System fan starts on an "actual" or simulated actuation signal. ITS SR 3.6.10.4 requires verification that the motor operated valve in the suction line to the containment lower compartment opens 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 change from "when the return air fans starts" to "actual" signal is discussed in DOC LA.2.

The purpose of CTS 4.6.5.6.a is to ensure that the CEQ System fan starts and the motor operated valve moves to the correct position 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" 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.

L.3 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.6.5.6.d requires the return air fan to be manually started from the control room, and to verify the motor operated valve in the suction line to the containment's lower compartment opens when the return air fan starts. The ITS does not include this requirement. This changes the CTS by deleting a Surveillance Requirement.

The purpose of CTS 4.6.5.6.d is to confirm that the CEQ System can be manually initiated from the control room. This change is acceptable because the deleted Surveillance Requirement is not necessary to verify the equipment used to meet the LCO can perform its required safety function. Thus, the 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. The manual initiation test has been deleted. The CEQ System is assumed to initiate automatically in response to a containment high pressure signal. Manual initiation is not assumed. This change is designated as less restrictive because the Surveillance which is required in the CTS will not be required in the ITS.

L.4 *(Category 3 – Relaxation of Completion Time)* (Unit 2 only) CTS 3.6.5.6 Action states that with one CEQ train inoperable, restore the inoperable train to OPERABLE status within 48 hours. ITS 3.6.10 Required Action A.1 states to restore the inoperable CEQ train to OPERABLE status within 72 hours under the same conditions. This changes the Unit 2 CTS by extending the Completion Time for restoration of an inoperable CEQ Train from 48 hours to 72 hours.

Attachment 1, Volume 11, Rev. 0, Page 274 of 494

DISCUSSION OF CHANGES
ITS 3.6.10, CONTAINMENT AIR RECIRCULATION/HYDROGEN SKIMMER (CEQ) SYSTEM

The purpose of the CTS 3.6.5.6 Action is to provide an adequate period of time to restore an inoperable CEQ Train to OPERABLE status. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. The Completion Time for restoration of an inoperable CEQ Train has been extended from 48 hours to 72 hours. This proposed time is also consistent with the time to restore an inoperable CEQ train in the Unit 1 Technical Specifications. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the Unit 2 CTS.

Attachment 1, Volume 11, Rev. 0, Page 275 of 494

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

CEQ System ARS (Ice Condenser) ①
3.6.14 10

CTS

3.6 CONTAINMENT SYSTEMS Containment Air Recirculation / Hydrogen Skimmer (CEQ) System ①

3.6.14 ~~Air Return System (ARS)~~ ~~(Ice Condenser)~~

② 10 CEQ ①

3.6.5.6 LCO 3.6.14 Two ARS trains shall be OPERABLE.

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

ACTIONS CEQ ①

	CONDITION	REQUIRED ACTION	COMPLETION TIME
Action	A. One ARS train inoperable.	A.1 Restore ARS train 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 INSERT 1 ④

	SURVEILLANCE		FREQUENCY	
		CEQ System		①
4.6.5.6.a	SR 3.6.~~14~~ 10.1	Verify each ARS fan starts on an actual or simulated actuation signal, after a delay of ≥ ~~[9.0] minutes~~ 108 seconds and ≤ ~~[11.0] minutes~~ 132 seconds, and operates for ≥ 15 minutes.	~~[92]~~ days	②
4.6.5.6.b	SR 3.6.~~14~~ 10.2 ①	~~Verify, with the ARS fan dampers closed, each ARS fan motor current is ≥ [20.5] amps and ≤ [35.5] amps [when the fan speed is ≥ [840] rpm and ≤ [900] rpm].~~ INSERT 2 ③ CEQ System ①	92 days	
4.6.5.6.c	SR 3.6.~~14~~ 10.3 ①	Verify, with the ARS fan not operating, each ARS fan damper opens when ≤ ~~[~~11.0~~]~~ lb is applied to the counterweight.	92 days	②

4 **INSERT 1**

-NOTE-
Only required to be met in MODES 1, 2, and 3.
----

3 **INSERT 2**

Verify, with the return air fan discharge backdraft damper locked closed and the fan motor energized, the static pressure between the fan discharge and the backdraft damper is ≥ 4.0 inches water gauge.

CEQ System

~~ARS (Ice Condenser)~~ (1)

3.6.~~14~~ 10

CTS

SURVEILLANCE REQUIREMENTS (continued)

		SURVEILLANCE (10) INSERT 3 (4)	FREQUENCY (1)
4.6.5.6.a	SR 3.6.~~14~~.4	~~[~~Verify ~~each~~ the motor operated valve in the hydrogen ~~collection~~ skimmer header ~~that is not locked, sealed, or otherwise secured in position,~~ opens on an actual or simulated actuation signal ~~after a delay of ≥ [9.0] minutes and ≤ [11.0] minutes.~~	92 days ~~]~~ (2)

4 **INSERT 3**

-NOTE-
Only required to be met in MODES 1, 2, and 3.

Attachment 1, Volume 11, Rev. 0, Page 280 of 494

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.10, CONTAINMENT AIR RECIRCULATION/HYDROGEN SKIMMER (CEQ) SYSTEM

1. The ISTS 3.6.14 title "Air Return System (ARS)" has been changed to "Containment Air Recirculation/Hydrogen Skimmer (CEQ) System" consistent with the CNP site specific terminology. The headings for ISTS 3.6.14, include the parenthetical expression (Ice Condenser). This identifying information is not included in the CNP 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, many Containment Specifications in the NUREG are not included in the CNP ITS due to design differences. Therefore, ISTS 3.6.14 is renumbered as ITS 3.6.10.

2. The brackets are removed and the proper plant specific information/value is provided.

3. ISTS SR 3.6.14.2 has been replaced with ITS SR 3.6.10.2. This proposed Surveillance is consistent with the current licensing basis. The purpose of ISTS SR 3.6.14.2 is to confirm the operating condition of the fans, which is indicative of overall fan motor performance. The proposed Surveillance performs the same function.

4. The Applicability of ISTS SR 3.6.14.1 and SR 3.6.14.4 (ITS SR 3.6.10.1 and SR 3.6.10.4) has been modified to only require the Surveillances to be met in MODES 1, 2, and 3. This allowance is consistent with the current licensing basis in CTS 4.6.5.6.a. Also, this is acceptable since ISTS 3.3.2 (ITS 3.3.2) does not require the automatic initiation Functions to be OPERABLE in MODE 4, and while ISTS 3.3.2 (ITS 3.3.2) requires the Manual Initiation Function to be OPERABLE in MODE 4, the performance of a TADOT every 24 months is required and this will ensure the Manual Initiation Function is OPERABLE in MODE 4.

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

ARS (Ice Condenser) CEQ System (1)
B 3.6.14 10

B 3.6 CONTAINMENT SYSTEMS

B 3.6.14 10 ~~Air Return System (ARS) (Ice Condenser)~~ Containment Air Recirculation/Hydrogen Skimmer (CEQ) System

BASES

BACKGROUND

CEQ System

The ARS is designed to assure the rapid return of air from the upper to the lower containment compartment after the initial blowdown following a Design Basis Accident (DBA). The return of this air to the lower compartment and subsequent recirculation back up through the ice condenser assists in cooling the containment atmosphere and limiting post accident pressure and temperature in containment to less than design values. Limiting pressure and temperature reduces the release of fission product radioactivity from containment to the environment in the event of a DBA. (1)

CEQ System   portion of the CEQ   two   CEQ System

The ARS provides post accident hydrogen mixing in selected areas of containment. The ~~associated~~ hydrogen skimmer System consists of hydrogen ~~collection~~ skimmer headers routed to potential hydrogen pockets in containment, terminating on the suction side of either of the two ARS fans at the header isolation valves. The minimum design flow from each potential hydrogen pocket is sufficient to limit the local concentration of hydrogen. (2)

CEQ System   two upper compartment headers   (1)

The ARS consists of two separate trains of equal capacity, each capable of meeting the design bases. Each train includes a 100% capacity air return fan, ~~associated~~ damper, and hydrogen ~~collection~~ skimmer headers with isolation valves. Each train is powered from a separate Engineered Safety Features (ESF) bus. (2)

(5)   an   a   skimmer

INSERT 1

~~The ARS fans are automatically started and the hydrogen collection header isolation valves are opened by the containment pressure High-High signal 10 minutes after the containment pressure reaches the pressure setpoint.~~ (2)

INSERT 1A

~~The time delay ensures that no energy released during the initial phase of a DBA will bypass the ice bed through the ARS fans or Hydrogen Skimmer System.~~ (2)

After starting, the fans displace air from the upper compartment to the lower compartment, thereby returning the air that was displaced by the high energy line break blowdown from the lower compartment and equalizing pressures throughout containment. After discharge into the lower compartment, air flows with steam produced by residual heat through the ice condenser doors into the ice condenser compartment where the steam portion of the flow is condensed. The air flow returns to the upper compartment through the top deck doors in the upper portion of the ice condenser compartment. The ARS fans operate continuously

CEQ System

2

INSERT 1

The CEQ fans are automatically started by the Containment Pressure - High signal in approximately 2 minutes after the containment pressure reaches the pressure setpoint. This also supports the required ice melt during a small break loss of coolant accident (LOCA) to ensure adequate containment recirculation sump inventory for initiation of the recirculation mode. The hydrogen skimmer header isolation valve opens when the CEQ System fan starts.

2

INSERT 1A

the core reflood time assumed in the LOCA peak clad temperature analysis is met.

CEQ System

ARS (Ice Condenser) (1)
B 3.6.14 (10)

BASES

BACKGROUND (continued)

after actuation, circulating air through the containment volume and purging all potential hydrogen pockets in containment. ~~When the containment pressure falls below a predetermined value, the ARS fans are automatically de-energized. Thereafter, the fans are automatically cycled on and off if necessary to control any additional containment pressure transients.~~ (3)

CEQ System

The ARS also functions, after all the ice has melted, to circulate any steam still entering the lower compartment to the upper compartment where the Containment Spray System can cool it. (1)

CEQ System

The ARS ~~is an ESF system.~~ It is designed to ensure that the heat removal capability required during the post accident period can be attained. The operation of the ARS, in conjunction with the ice bed, the Containment Spray System, and the Residual Heat Removal (RHR) System spray, provides the required heat removal capability to limit post accident conditions to less than the containment design values. (1) (2)

APPLICABLE SAFETY ANALYSES

The limiting DBAs considered relative to containment temperature and pressure are the ~~loss of coolant accident (~~LOCA~~)~~ and the steam line break (SLB). The LOCA and SLB are analyzed using computer codes designed to predict the resultant containment pressure and temperature transients. DBAs are assumed not to occur simultaneously or consecutively. The postulated DBAs are analyzed, in regard to ESF systems, assuming the loss of one ESF bus, which is the worst case single active failure and results in one train each of the Containment Spray System, RHR System, and ARS being inoperable (Ref. 1). The DBA analyses show that the maximum peak containment pressure results from the LOCA analysis and is calculated to be less than the containment design pressure. (2) (1)

CEQ System

For certain aspects of transient accident analyses, maximizing the calculated containment pressure is not conservative. In particular, the cooling effectiveness of the Emergency Core Cooling System during the core reflood phase of a LOCA analysis increases with increasing containment backpressure. For these calculations, the containment backpressure is calculated in a manner designed to conservatively minimize, rather than maximize, the calculated transient containment pressures, in accordance with 10 CFR 50, Appendix K (Ref. 2).

The analysis for minimum internal containment pressure (i.e., maximum external differential containment pressure) assumes inadvertent simultaneous actuation of both the ARS and the Containment Spray (4)

CEQ System

ARS (Ice Condenser) (1)
B 3.6.14 (10)

BASES

APPLICABLE SAFETY ANALYSES (continued)

System. The containment vacuum relief valves are designed to accommodate inadvertent actuation of either or both systems. (4)

CEQ System

The modeled ARS actuation ~~from the~~ containment analysis is based upon a response time associated with exceeding the containment pressure High-High signal setpoint to achieving full ARS air flow. ~~A delayed response time initiation provides conservative analyses of peak calculated containment temperature and pressure responses.~~ The ARS total response time of 600 seconds ~~consists of~~ the built in signal delay. (1)

FUNCTION CEQ System 132 includes INSERT 2

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

LCO

CEQ System

In the event of a DBA, one train of the ARS with the Hydrogen Skimmer System is required to provide the minimum air recirculation for heat removal and hydrogen mixing assumed in the safety analyses. To ensure this requirement is met, two trains of the ARS with the Hydrogen Skimmer System must be OPERABLE. This will ensure that at least one train will operate, assuming the worst case single failure occurs ~~which is in the ESF power supply~~. (1) (2)

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause an increase in containment pressure and temperature requiring the operation of the ARS. Therefore, the LCO is applicable in MODES 1, 2, 3, and 4. (1)

CEQ System

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 ARS is not required to be OPERABLE in these MODES. (1)

CEQ System

ACTIONS

A.1

If one of the required trains of the ARS is inoperable, it must be restored to OPERABLE status within 72 hours. The components in this degraded condition are capable of providing 100% of the flow and hydrogen skimming needs after an accident. The 72 hour Completion Time was developed taking into account the redundant flow and hydrogen skimming capability of the OPERABLE ARS train and the low probability of a DBA occurring in this period. (5) (1)

CEQ

(1)

1 **INSERT 2**

The response time band ensures that containment temperature and pressure profiles are as assumed in the overall accident analyses (i.e., containment structural response and peak clad temperature analyses).

Attachment 1, Volume 11, Rev. 0, Page 287 of 494

CEQ System

ARS (Ice Condenser) 1

B 3.6.14 10

BASES

ACTIONS (continued) 1

B.1 and B.2 CEQ

unit

If the ARS 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. unit unit 2

10 1

SURVEILLANCE REQUIREMENTS

SR 3.6.14.1 CEQ System

108 seconds 132 seconds 6

Verifying that each ARS fan starts on an actual or simulated actuation signal, after a delay ≥ 9.0 minutes and ≤ 11.0 minutes, and operates for ≥ 15 minutes is sufficient to ensure that all fans are OPERABLE and that all associated controls and time delays 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 was developed considering the known reliability of fan motors and controls and the two train redundancy available. 6

INSERT 3 1

10 1

SR 3.6.14.2

INSERT 4

~~Verifying ARS fan motor current to be at rated speed with the return air dampers closed confirms one operating condition of the fan. This test is indicative of overall fan motor performance. Such inservice tests confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance.~~ The Frequency of 92 days conforms with the testing requirements for similar ESF equipment and considers the known reliability of fan motors and controls and the two train redundancy available.

10 1

SR 3.6.14.3

Verifying the OPERABILITY of the return air damper provides assurance that the proper flow path will exist when the fan is started. By applying the correct counterweight, the damper operation can be confirmed. The Frequency of 92 days was developed considering the importance of the dampers, their location, physical environment, and probability of failure. Operating experience has also shown this Frequency to be acceptable.

1

INSERT 3

This SR has been modified by a Note that states that this Surveillance is only required to be met in MODES 1, 2, and 3. This allowance is necessary since the specified delay (i.e., $\geq$ 108 seconds and $\leq$ 132 seconds) is only applicable to the automatic actuation signal (i.e., Containment Pressure - High), which is only required to be OPERABLE in MODES 1, 2, and 3. In addition, LCO 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," requires the CEQ System Manual Initiation Function to be OPERABLE in MODE 4 and requires the performance of a TADOT every 24 months. This requirement will ensure the Manual Initiation Function can actuate the required equipment in MODE 4.

1

INSERT 4

Verifying, with the return air fan discharge backdraft damper locked closed and the fan motor energized, the static pressure between the fan discharge and the backdraft damper is $\geq$ 4.0 inches water gauge confirms one operating condition of the fan. This test is indicative of overall fan motor performance. Such tests confirm component OPERABLITY and detect incipient failures by indicating abnormal performance.

Attachment 1, Volume 11, Rev. 0, Page 289 of 494

CEQ System

ARS (Ice Condenser) 1

B 3.6.14 10

BASES

SURVEILLANCE REQUIREMENTS (continued) 1

10

1 SR 3.6.14.4 6

Verifying the OPERABILITY of the motor operated valve in the Hydrogen Skimmer System hydrogen collection header to the lower containment compartment provides assurance that the proper flow path will exist when the valve receives an actuation signal. ~~This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. This Surveillance also confirms that the time delay to open is within specified tolerances.~~ The 92 day Frequency was developed considering the known reliability of the motor operated valves and controls and the two train redundancy available. Operating experience has also shown this Frequency to be acceptable. 2 1 6

INSERT 5 1

REFERENCES 1. 4 FSAR, Section ~~6.2~~ 14.3.4. 6

2. 10 CFR 50, Appendix K.

Attachment 1, Volume 11, Rev. 0, Page 290 of 494

1 **INSERT 5**

This SR has been modified by a Note that states that this Surveillance is only required to be met in MODES 1, 2, and 3. This allowance is acceptable since, in MODE 4, automatic operation is not required. LCO 3.3.2 requires only the CEQ System Manual Initiation Function to be OPERABLE in MODE 4 and requires the performance of a TADOT every 24 months. This requirement will ensure the Manual Initiation Function can actuate the required equipment in MODE 4.

Attachment 1, Volume 11, Rev. 0, Page 291 of 494

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.10 BASES, CONTAINMENT AIR RECIRCULATION/HYDROGEN SKIMMER (CEQ) SYSTEM

1. Changes have been made to be consistent with changes made to the Specification.

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 CEQ fans are not automatically de-energized, but must be manually stopped after an automatic actuation. In addition, there is no current predetermined pressure value at which the fans are secured, post accident. Long term operation of the fans would be at the discretion of the plant evaluation team. Therefore, these statements have been deleted.

4. The ISTS 3.614 (ITS 3.6.10) Bases ASA section discussion of the inadvertent actuation of both the ARS and the Containment Spray System has been deleted since this incident does not describe how the system mitigates DBAs and is outside of the CNP current licensing basis to consider.

5. The word "required" has been deleted because there are only two trains of the CEQ System and both are required. This is consistent with the use of the word "required" in the ISTS.

6. The brackets are removed and the proper plant specific information/value is provided.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.10, CONTAINMENT AIR RECIRCULATION/HYDROGEN SKIMMER (CEQ) SYSTEM

There are no specific NSHC discussions for this Specification.

Attachment 1, Volume 11, Rev. 0, Page 294 of 494

ATTACHMENT 11

ITS 3.6.11, Ice Bed

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

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

3/4.6.5 ICE CONDENSER

ICE BED

LIMITING CONDITION FOR OPERATION

LCO 3.6.11 3.6.5.1 The ice bed shall be OPERABLE with: Add proposed boron concentration upper limit M.1

SR 3.6.11.6 a. The stored ice having boron concentration of at least 1800 ppm ~~(the boron being in the form of sodium tetraborate)~~, and a pH of 9.0 to 9.5 ~~at 25°C~~, LA.1

SR 3.6.11.4 b. Flow channels through the ice condenser,

SR 3.6.11.1 c. A maximum ice bed temperature of ≤ 27°F,

SR 3.6.11.2 d. ~~Ice baskets containing at least 1144 lbs of ice (end-of-cycle), and~~

e. ~~1944 ice baskets.~~

APPLICABILITY: MODES 1, 2, 3 and 4. Add proposed total mass and zone requirements L.1

ACTION:

ACTION A, ACTION B: With the ice bed inoperable, restore the ice bed to OPERABLE status within 48 hours ~~or be in at least HOT~~ STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

LA.2

4.6.5.1 The ice condenser shall be determined OPERABLE:

SR 3.6.11.1 a. At least once per 12 hours ~~by using the ice bed temperature monitoring system~~ to verify that the maximum ice bed temperature is ≤ 27°F.

b. At least once per 18 months by: 54 for SR 3.6.11.6 L.2

Add proposed SR 3.6.11.6 Note

SR 3.6.11.6 1. Chemical analyses which verify that at least 9 representative samples of stored ice have a boron concentration of at least 1800 ppm ~~(the boron being in the form of sodium tetraborate)~~, and a pH of 9.0 to 9.5 ~~at 25°C~~ M.2 LA.1

SR 3.6.11.2 2. ~~Weighing a representative sample of at least 144 ice baskets and verifying that each ice basket contains at least 1144 lbs of ice (end-of-cycle). The representative sample shall include 6 baskets from each of the 24 ice condenser bays and~~

Add proposed boron concentration upper limit M.1

Add proposed total mass and zone requirements L.1

L.3

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

Add proposed total mass and zone requirements L.1

SR 3.6.11.2

~~shall be constituted of one basket each from Radial Rows 1, 2, 4, 6, 8 and 9 (or from the same row of an adjacent bay if a basket from a designated row cannot be obtained for weighing) within each bay. If any basket is found to contain less than 1144 pounds of ice (end-of-cycle), a representative sample of 20 additional baskets from the same bay shall be weighed. The minimum average weight of ice from the 20 additional baskets and the discrepant basket shall not be less than 1144 pounds/basket (end-of-cycle) at a 95% level of confidence.~~

SR 3.6.11.3

~~The ice condenser shall also be subdivided into 3 groups of baskets, as follows: Group 1 - bays 1 through 8, Group 2 - bays 9 through 16, and Group 3 - bays 17 through 24. The minimum average ice weight of the sample baskets from Radial Rows 1, 2, 4, 6, 8 and 9 in each group shall not be less than 1144 pounds/basket (end-of-cycle) at a 95% level of confidence.~~

Add proposed ice mass requirement L.1

SR 3.6.11.2

~~The minimum total ice condenser ice weight at a 95% level of confidence shall be calculated using all ice basket weights determined during this weighing program and shall not be less than 2,222,000 pounds (end-of-cycle).~~

SR 3.6.11.4

3. Verifying, by a visual inspection ~~of at least two flow passages per ice condenser bay, that the accumulation of frost or ice on the top deck floor grating, on the intermediate deck and on flow passages between ice baskets and past lattice frames is restricted to a nominal thickness of 3/8 inches. If one flow passage per bay is found to have an accumulation of frost or ice greater than this thickness, a representative sample of 20 additional flow passages from the same bay shall be visually inspected. If these additional flow passages are found acceptable, the surveillance program may proceed considering the single deficiency as unique and acceptable. More than one restricted flow passage per bay is evidence of abnormal degradation of the ice condenser.~~

accumulation of ice on structural members comprising flow channels through the ice bed is ≤ 15% blockage of the total flow area for each safety analysis section

L.4

L.1

~~c. At least once per 18 months by verifying, by a visual inspection, each ice condenser bay, that the accumulation of frost or ice on the lower inlet plenum support structures and turning vanes is restricted to a nominal thickness of 3/8 inches. An accumulation of frost and ice greater than this thickness is evidence of abnormal degradation of the ice condenser.~~

L.4

SR 3.6.11.5

d. ~~At least once per 40 months by lifting and visually inspecting the accessible portions of at least two ice baskets from each 1/3 of the ice condenser and verifying that the ice baskets are free of detrimental structural wear, cracks, corrosion or other damage. The ice baskets shall be raised at least 12 feet for this inspection.~~

Add proposed ice basket wear/damage requirements L.1

Add proposed SR 3.7.11.7 M.3

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

3/4.6.5 ICE CONDENSER

ICE BED

LIMITING CONDITION FOR OPERATION

Add proposed boron concentration upper limit — M.1

LCO 3.6.11 3.6.5.1 The ice bed shall be OPERABLE with:

SR 3.6.11.6 a. The stored ice having boron concentration of at least 1800 ppm ~~(the boron being in the form of sodium tetraborate)~~, and a pH of 9.0 to 9.5 ~~at 25°C~~, — LA.1

SR 3.6.11.4 b. Flow channels through the ice condenser,

SR 3.6.11.1 c. A maximum ice bed temperature of ≤ 27°F,

SR 3.6.11.2 d. ~~Ice baskets containing at least 1144 lbs of ice (end-of-cycle), and~~

e. ~~1944 ice baskets.~~

Add proposed total mass and zone requirements — L.1

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTION A, ACTION B — With the ice bed inoperable, restore the ice bed to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.1 The ice condenser shall be determined OPERABLE:

SR 3.6.11.1 a. At least once per 12 hours ~~by using the ice bed temperature monitoring system~~ to verify that the maximum ice bed temperature is ≤ 27°F. — LA.2

b. At least once per 18 months by:

54 for SR 3.6.11.6 — L.2

Add proposed SR 3.6.11.6 Note — L.3

SR 3.6.11.6 1. Chemical analyses which verify that at least 9 representative samples of stored ice have a boron concentration of at least 1800 ppm ~~(the boron being in the form of sodium tetraborate)~~, and a pH of 9.0 to 9.5 ~~at 25°C~~. — M.2, LA.1

SR 3.6.11.2 2. ~~Weighing a representative sample of at least 144 ice baskets and verifying that each ice basket contains at least 1144 lbs of ice (end-of-cycle). The representative sample shall include 6 baskets from each of the 24 ice condenser bays and~~

Add proposed boron concentration upper limit — M.1

Add proposed total mass and zone requirements — L.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

Add proposed total mass and zone requirements — L.1

SR 3.6.11.2

shall be constituted of one basket each from Radial Rows 1, 2, 4, 6, 8 and 9 (or from the same row of an adjacent bay if a basket from a designated row cannot be obtained for weighing) within each bay. If any basket is found to contain less than 1144 pounds of ice (end-of-cycle), a representative sample of 20 additional baskets from the same bay shall be weighed. The minimum average weight of ice from the 20 additional baskets and the discrepant basket shall not be less than 1144 pounds/basket (end-of-cycle) at a 95% level of confidence.

SR 3.6.11.3

The ice condenser shall also be subdivided into 3 groups of baskets, as follows: Group 1 - bays 1 through 8, Group 2 - bays 9 through 16, and Group 3 - bays 17 through 24. The minimum average ice weight of the sample baskets from Radial Rows 1, 2, 4, 6, 8 and 9 in each group shall not be less than 1144 pounds/basket (end-of-cycle) at a 95% level of confidence.

Add proposed ice mass requirement — L.1

SR 3.6.11.2

The minimum total ice condenser ice weight at a 95% level of confidence shall be calculated using all ice basket weights determined during this weighing program and shall not be less than 2,222,000 pounds (end-of-cycle).

SR 3.6.11.4

3. Verifying, by a visual inspection of at least two flow passages per ice condenser bay, that the accumulation of frost or ice on the top deck floor grating, on the intermediate deck and on flow passages between ice baskets and past lattice frames is restricted to a nominal thickness of 3/8 inches. If one flow passage per bay is found to have an accumulation of frost or ice greater than this thickness, a representative sample of 20 additional flow passages from the same bay shall be visually inspected. If these additional flow passages are found acceptable, the surveillance program may proceed considering the single deficiency as unique and acceptable. More than one restricted flow passage per bay is evidence of abnormal degradation of the ice condenser.

accumulation of ice on structural members comprising flow channels through the ice bed is ≤ 15% blockage of the total flow area for each safety analysis section

L.4

L.1

c. At least once per 18 months by verifying, by a visual inspection, each ice condenser bay, that the accumulation of frost or ice on the lower plenum support structures and turning vanes is restricted to a nominal thickness of 3/8 inches. An accumulation of frost or ice greater than this thickness is evidence of abnormal degradation of the ice condenser.

L.4

SR 3.6.11.5

d. At least once per 40 months by lifting and visually inspecting the accessible portions of at least two ice baskets from each 1/3 of the ice condenser and verifying that the ice baskets are free of detrimental structural wear, cracks, corrosion or other damage. The ice baskets shall be raised at least 12 feet for this inspection.

Add proposed ice basket wear/damage requirements — L.1

Add proposed SR 3.7.11.7 — M.3

DISCUSSION OF CHANGES
ITS 3.6.11, ICE BED

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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-1431, Rev. 2, "Standard Technical Specifications-Westinghouse 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

M.1 CTS 3.6.5.1.a and CTS 4.6.5.1.b.1 specify a lower limit $\geq$ 1800 ppm for stored ice boron concentration. ITS SR 3.6.11.6 specifies an upper and lower limit ($\geq$ 1800 ppm and $\leq$ 2300 ppm) for stored boron concentration. This changes the CTS by adding an upper boron concentration limit for stored ice.

The purpose of the minimum boron concentration limit in CTS 3.6.5.1.a and CTS 4.6.5.1.b.1 is to assure reactor subcriticality in a post loss of coolant accident (LOCA) environment. The purpose of the new upper boron concentration limit is to assure the bounding value in the hot leg switchover timing calculation. This change is acceptable because the new limit will help assure the condenser ice boron concentration is within the limits assumed in the safety analysis. This change is designated as more restrictive, because it adds the upper limit to the ice condenser boron concentration requirements.

M.2 CTS 4.6.5.1.b.1 requires a chemical analyses to be performed on at least 9 representative samples of stored ice. ITS SR 3.6.11.6 requires a chemical analysis of the stored ice in at least one randomly selected ice basket from each ice condenser bay. This changes the CTS to require 24 samples (at least one randomly selected ice basket from each ice condenser bay) instead of requiring 9 representative samples.

The purpose of CTS 4.6.5.1.b.1 is to assure the chemical analyses is performed on a sufficient number of representative samples of stored ice. This change is acceptable because the proposed sampling requirement provides a better representation of the overall ice bed (i.e., at least one ice basket from each condenser bay instead of 9 representative samples). The change has been designated as more restrictive because it is more explicit on the sampling requirements and requires an increased number of ice bed samples for chemical analyses.

M.3 CTS 4.6.5.1 does not contain an explicit verification, by chemical analysis, that ice added to the ice condenser meets the boron concentration and pH requirements of CTS 3.6.5.1.a. ITS SR 3.6.11.7 requires this SR to be conducted during each ice addition. This changes the CTS by adding the ITS requirement of SR 3.6.11.7.

Attachment 1, Volume 11, Rev. 0, Page 301 of 494

DISCUSSION OF CHANGES
ITS 3.6.11, ICE BED

The purpose of ITS SR 3.6.11.7 is to ensure the initial ice fill and any subsequent ice additions meet the boron concentration and pH requirements of SR 3.6.11.6. This SR is modified by a Note that allows the chemical analysis to be performed on either the liquid solution or on the resulting ice. If ice is obtained from offsite sources, the chemical analysis data must be obtained for the ice supplied. This change is acceptable because it provides additional assurance that the ice added is acceptable. This change is designated as more restrictive, because it adds a Surveillance Requirement to the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.6.5.1.a and 4.6.5.1.b.1 specify that the boron being used to meet the lower limit for stored ice boron concentration is in the form of sodium tetraborate and that the pH limit is normalized to 25°C. ITS SR 3.6.11.6 specifies an upper and lower limit (≥ 1800 ppm and ≤ 2300 ppm) for stored boron concentration, but does not include the form of the boron (i.e., sodium tetraborate). ITS SR 3.6.11.6 also specifies the pH limit, but does not state that it is normalized to 25°C. This changes the CTS by moving the details that the boron must be in the form of sodium tetraborate and that the pH is normalized to 25°C to the Bases. The addition of the boron concentration upper limit is discussed in DOC M.1.

The removal of these details, which are related to system design limits, 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 3.6.11.6 still retains the requirement concerning the boron concentration limits and pH limits. 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 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 limits is being removed from the Technical Specifications.

LA.2 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.6.5.1.a requires the verification that the maximum ice bed temperature is ≤ 27°F using the ice bed temperature monitoring system. ITS SR 3.6.11.1 requires the verification that the maximum ice bed temperature is ≤ 27°F. This changes the CTS by moving the detail concerning the system to be used to evaluate whether the ice bed temperature is ≤ 27°F to the Bases.

DISCUSSION OF CHANGES
ITS 3.6.11, ICE BED

The removal of this detail for performing the Surveillance Requirement 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 the maximum ice bed temperature is $\leq$ 27°F. 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 the Bases 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

L.1 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 3.6.5.1.d and e requires that ice baskets contain at least 1144 lbs of ice and that there be 1944 ice baskets. CTS 4.6.5.1.b.2 requires weighing a sample of at least 144 ice baskets and verifying each ice basket contains 1144 lbs of ice (end of cycle). CTS 4.6.5.1.b.2 specifies the locations of the ice basket to be sampled and if any ice basket contains less than 1144 lbs of ice, additional ice baskets must be weighed. It also requires the weighed baskets to be divided into three sub-groups, with each sub-group averaging 1144 lbs of ice per ice basket. Furthermore, a total ice weight of the 1944 baskets (2,222,000 lbs end of cycle) is also required to a 95% confidence level, and includes a maintenance allowance for mass determination accuracy. CTS 4.6.5.1.b.3 requires a verification, by a visual inspection of at least two flow passages per ice condenser bay, that the accumulation of frost or ice on the top deck floor grating, on the intermediate deck, and on flow passages between ice baskets and past lattice frames is restricted to a nominal thickness of 3/8 inches. If one flow passage per bay is found to have an accumulation of frost or ice greater than this thickness, a representative sample of 20 additional flow passages from the same bay shall be visually inspected. If these additional flow passages are found acceptable, the surveillance program may proceed considering the single deficiency as unique and acceptable. More than one restricted flow passage per bay is evidence of abnormal degradation of the ice condenser. CTS 4.6.5.1.d requires lifting (at least 12 feet) and visually inspecting the accessible portions of at least two ice baskets from each one-third of the ice condenser and verifying that the ice baskets are free of detrimental structural wear, cracks, corrosion or other damage. ITS SR 3.6.11.2 requires a verification of the total ice mass (2,200,000 lbs) by calculating the mass of stored ice in each of three radial zones by selecting, at random, 30 ice baskets in each zone. It also verifies each zone contains the required ice mass. ITS SR 3.6.11.3 requires a verification that each basket sampled in ITS SR 3.6.11.2 contains a minimum ice mass. ITS SR 3.6.11.4 requires a verification, by inspection, accumulation of ice on structural members comprising flow channels through the ice bed is $\leq$ 15% blockage of the total flow area for each safety analysis section. ITS SR 3.6.11.5 requires a visual inspection, for detrimental structural wear, cracks, corrosion, or other damage, two ice baskets from each group of bays (total of three groups). The Bases for ITS SR 3.6.11.5 includes clarifying guidance that indicates the

Attachment 1, Volume 11, Rev. 0, Page 303 of 494

intent of the inspection is to perform an inspection of the full-length of the basket. This changes the CTS in the following ways: for SR 3.6.11.2 - a) modifies the stored ice mass to 2,200,000 lbs by specifying the design basis value and removing the maintenance allowance for mass determination accuracy; and b) redefines the ice mass statistical sampling plan to include the entire ice bed (1944 baskets), divides the ice bed into three radial zones, and modifies the sample size to at least 30 baskets in each radial zone; for SR 3.6.11.3 - a) removes the reference to azimuthal distribution verification, and b) adds a new acceptance criteria value for minimum ice mass in each basket sampled by SR 3.6.11.2; and for SR 3.6.11.5 - a) removes the inherent reference to CTS 3.6.5.1.b.2 that provided the definition of azimuthal distribution, b) adds the current sampling distribution methodology directly to the SR for clarity, and c) removes the requirement to raise the ice basket at least 12 feet for the inspection.

The basic requirement for verification of ice condenser ice bed ice mass is to ensure a sufficient ice mass is available to provide a heat sink in the event of an energy release in containment from a loss-of-coolant accident (LOCA) or a steam line break (SLB). For these design basis accidents (DBAs), the ice would absorb energy and limit containment peak pressure and temperature during the accident transient. Limiting the pressure and temperature reduces the release of fission product radioactivity from containment to the environment in the event of a DBA.

The proposed change of the total stored ice mass (ITS SR 3.6.11.2) provides consistency with the design basis analysis. The acceptance criteria value is reduced by relocation of the mass determination accuracy to the Bases. The Bases state that the Surveillance is performed in the as-found condition (before ice bed maintenance and after ice bed sublimation). The current acceptance criteria value consists of the DBA analysis value and a one percent mass determination accuracy (weighing error) value, and the Surveillance is performed in the as-found condition (before ice bed maintenance and after ice bed sublimation for the cycle). The as-found performance of this Surveillance shows adequacy of total ice mass for the current operational cycle. As such, when the proposed SR change is coupled with the change to the SR Bases, there is no net change in total stored ice mass. Ice Condenser Utility Group (ICUG) operational history shows that sublimation rates vary within the ice bed requiring specific effort to maintain the ice bed mass inventory each outage. The ongoing process of monitoring the varying sublimation rates during the operating cycle and replenishing ice bed mass as needed is the basis for the Active Ice Mass Management (AIMM) concept. The maintenance effort (AIMM) restores the ice bed mass and distribution characteristics required for continued operation. Therefore, the proposed change provides a clear tie to the design basis while crediting plant specific AIMM maintenance practices.

The proposed statistical sampling plan change (ITS SR 3.6.11.2) increases the parent population to include all ice baskets contained within the ice bed, stratifies that population into three radial zones that contain rows of ice baskets exhibiting similar characteristics, and requires at least 30 random sample ice baskets for ice mass verification in each radial zone. The stratified sampling allows sub-populations to be defined that have similar mean mass characteristics resulting in better estimates of total ice mass. A 30-ice basket random sample from each

DISCUSSION OF CHANGES
ITS 3.6.11, ICE BED

radial zone maintains a 95% confidence level for calculation of total stored ice. The modified sampling methodology provides the validation of total ice mass and verification of ice mass distribution within the ice bed, in lieu of a limited azimuthal row-group Surveillance. The proposed ice bed sub-populations (radial zones) and sample size directly applies ICUG ice bed historical operating experience, provides clear linkage to statistical sampling methodology provided in NUREG-1475, "Applying Statistics," and supports validation of total stored ice for the long-term/overall DBA analysis.

The proposed change to remove limited azimuthal row-group ice distribution verification is replaced by the change in statistical sampling (ITS SR 3.6.11.3). As stated above, the change in statistical sampling and crediting of AIMM processes provides inherent verification of ice mass distribution, making azimuthal row-group distribution verification redundant. A new minimum blowdown ice mass acceptance criteria value is added for each of the ice baskets sampled. The new acceptance criteria value (minimum blowdown ice mass for each basket sampled) ensures that an anomalous gross degradation of the ice bed does not exist, supports the DBA analysis during the blowdown phase, and directly applies the blowdown data from the original Westinghouse Waltz-Mill testing as described in the UFSAR.

The proposed change to the inspection of flow channels for accumulated ice (ITS SR 3.6.11.4) replaces the manner in which the inspection is performed and the acceptance criteria. The allowable 15% buildup of ice is based on the analysis of the sub-compartment response to a design basis LOCA with partial blockage of the ice condenser flow channels. The analysis did not perform detailed flow area modeling, but lumped the condenser bays into six sections ranging from 2.75 bays to 6.5 bays. Individual bays are acceptable with > 15% blockage, as long as 15% blockage is not exceeded for any analysis section. In addition, to provide a 95% confidence that flow blockage does not exceed the allowed 15%, the visual inspection must be made for at least 54 (33%) of the 162 flow channels per bay.

The proposed change to the ice basket wear/damage SR (ITS SR 3.6.11.5) only provides clarification of the sampling methodology. Currently the Surveillance implicitly references the ice mass verification Surveillance for sampling methodology. Because the ice mass verification sampling methodology is proposed to change, the implicit reference is being removed and the current sampling methodology is completely defined.

The change to an 18 month Frequency for both the ice mass verification and the ice distribution SRs does not result in an overall reduction in the end-of-cycle ice mass. The process of replenishing the ice bed mass and the monitoring of varying sublimation rates during the operating cycle is the basis for AIMM. AIMM restores the ice bed mass and distribution characteristics required for continued operation. This includes sublimation allowances and ice mass determination accuracy. ICUG historical operating experience has shown that the ice condenser can meet and even exceed its design function without performing these Surveillances on a 9-month frequency. Additionally, this change in Frequency places performance of these SRs within the current time frame of the unit refueling outages.

Attachment 1, Volume 11, Rev. 0, Page 305 of 494

DISCUSSION OF CHANGES
ITS 3.6.11, ICE BED

Overall, ice condenser OPERABILITY is assured by numerous means during operation of the plant. The ice bed temperature is monitored at least once every 12 hours to ensure temperatures are $\leq$ 27°F (ITS SR 3.6.11.1). There are alarms in the control room that will indicate to the operator if any recorded temperature monitoring point within the ice bed approaches 27°F. The CNP staff performs walkdowns of the refrigeration system (chillers, air handling units, and glycol circulation pumps) to evaluate its ability to function. Inspections are required of intermediate deck doors to ensure they are not impaired. This activity ensures that no abnormal degradation of the ice condenser is occurring due to condensation or frozen drain lines in localized areas.

L.2 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.6.5.1.b.1 requires the chemical analyses on the stored ice to be performed once every 18 months. ITS SR 3.6.11.6 requires the chemical analyses on the stored ice to be performed once every 54 months. This changes the CTS by extending the Frequency of the Surveillance from 18 months to 54 months.

The purpose of CTS 4.6.5.1.b.1 is to ensure the boron concentration and pH of the stored ice is within the appropriate limits. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. This change extends the test from 18 months to 54 months. The change to 54 months is acceptable since the sodium tetraborate has been proven effective in maintaining the boron content for long storage periods, and it also enhances the ability of the solution to remove and retain fission product iodine. In addition, the change is acceptable since a new Surveillance has been added (SR 3.6.11.7) that requires a chemical analysis of any new ice added to the ice bed and a verification that the ice meets the boron concentration and pH limits of SR 3.6.11.6. The addition of this new Surveillance is discussed in DOC M.3. This change is designated as less restrictive because Surveillance will be performed less frequently under the ITS than under the CTS.

L.3 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.6.5.1.b.1 requires a verification by chemical analyses that the 9 representative samples of stored ice have a boron concentration of at least 1800 ppm and a pH of 9.0 to 9.5 at 25°C. ITS SR 3.6.11.6 requires the verification, by chemical analysis of the stored ice in at least one randomly selected ice basket from each ice condenser bay, that ice bed boron concentration is $\geq$ 1800 ppm and $\leq$ 2300 ppm and pH is $\geq$ 9.0 and $\leq$ 9.5. In addition, a Note is included that allows the boron concentration and pH values obtained from the individual samples to be averaged. This changes the CTS by allowing the chemical analysis to average the boron concentration and pH values of the samples instead of requiring each sample to meet the requirements. Other changes to CTS 4.6.5.1.b.1 are discussed in DOCs M.1, M.2, and LA.1.

The purpose of CTS 4.6.5.1.b.1 is to ensure the ice contains the appropriate boron concentration and pH so that when it melts after a DBA it meets the requirement for borated water for the ECCS recirculation mode of operation and for the Containment Spray mode. This change is acceptable because it has been

Attachment 1, Volume 11, Rev. 0, Page 306 of 494

DISCUSSION OF CHANGES
ITS 3.6.11, ICE BED

determined that the relaxed Surveillance Requirement acceptance criteria continues to ensure the ice bed can perform its required function. This change allows the chemical analysis results to be averaged in determining whether the boron concentration and pH limits are satisfied instead of evaluating each sample individually. The allowance to average the values is acceptable since during a DBA the ice would melt and mix with the reactor coolant to form a suction source in the containment recirculation sump. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.4 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.6.5.1.c requires a visual inspection every 18 months, of each ice condenser bay, to ensure the accumulation of frost or ice on the lower inlet plenum support structures and turning vanes is restricted to the specified thickness. CTS 4.6.5.1.b.3 requires the inspection of the top deck floor grating, on the intermediate deck and on flow passages between ice baskets and past lattice frames for accumulation of frost or ice. The ITS does not include these Surveillance Requirements; it only requires this inspection of the "flow channels," which includes the area between ice baskets, past lattice frames, and wall panels, as indicated in the Bases for ITS SR 3.6.11.4. This changes the CTS by deleting the requirement to inspect the top deck floor grating, the intermediate deck, and the lower support structures and turning vanes for accumulation of frost or ice.

The purpose of CTS 4.6.5.1.c and CTS 4.6.5.1.b.3 is to ensure the flow area for the steam air mixture through the ice bed is sufficient to ensure the appropriate flow. This change is acceptable because the deleted Surveillance Requirements are not necessary to verify that the blockage criteria assumed in the safety analysis are met. Thus, appropriate portions of the flow path (i.e., flow channel) will continue to be tested in a manner and at a Frequency necessary to give confidence that the assumptions in the safety analysis are protected. Due to significantly larger flow area in the regions of the top deck floor grating, the lower inlet plenum support structures, and turning vanes, a significant amount of buildup of ice on these structures would be required to degrade air and steam flow. Therefore, these structures are excluded as part of a flow channel for application of the 15% blockage criteria. 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)

Ice Bed (Ice Condenser) 3.6.15 11 1

CTS

3.6 CONTAINMENT SYSTEMS

3.6.15 11 Ice Bed (Ice Condenser) 1

LCO 3.6.5.1

LCO 3.6.15 The ice bed shall be OPERABLE.

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
Action	A. Ice bed inoperable.	A.1 Restore ice bed to OPERABLE status.	48 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 1

	SURVEILLANCE		FREQUENCY
LCO 3.6.5.1.c, 4.6.5.1.a	SR 3.6.15.1 11	Verify maximum ice bed temperature is ≤ [27]°F. 2	12 hours
LCO 3.6.5.1.d, 4.6.5.1.b.2	SR 3.6.15.2 11	~~Verify total weight of stored ice is ≥ [2,721,600] lb by: a. Weighing a representative sample of ≥ 144 ice baskets and verifying each basket contains ≥ [1400] lb of ice and b. Calculating total weight of stored ice, at a 95% confidence level, using all ice basket weights determined in SR 3.6.15.2.a.~~ INSERT 1 TSTF 429	9 months 18 TSTF 429

1

3.6.11

TSTF-429

INSERT 1

2

Verify total mass of stored ice is ≥ [2,200,000] lbs by calculating the mass of stored ice, at a 95% confidence level, in each of three Radial Zones as defined below, by selecting a random sample of ≥ 30 ice baskets in each Radial Zone, and

3

Verify:

a 1. Zone A ([radial rows 7, 8, and 9]) has a total mass ≥ [733,400] lbs ;

b 2. Zone B ([radial rows 4, 5, and 6]) has a total mass ≥ [733,400] lbs ; and

c 3. Zone C ([radial rows 1, 2, and 3]) has a total mass ≥ [733,400] lbs.

3 2

Attachment 1, Volume 11, Rev. 0, Page 310 of 494

CTS

SURVEILLANCE REQUIREMENTS (continued)

CTS	SURVEILLANCE		FREQUENCY
4.6.5.1.b.2	SR 3.6.15.3 (11)	~~Verify azimuthal distribution of ice at a 95% confidence level by subdividing weights, as determined by SR 3.6.15.2.a, into the following groups: a. Group 1 - bays 1 through 8, b. Group 2 - bays 9 through 16, and c. Group 3 - bays 17 through 24. The average ice weight of the sample baskets in each group from radial rows 1, 2, 4, 6, 8, and 9 shall be ≥ [1400] lb.~~ INSERT 2 (TSTF-429)	9 months (18) (TSTF-429) ① ① ②
LCO 3.6.5.1.b, 4.6.5.1.b.3	SR 3.6.15.4 (11)	Verify, by visual inspection, accumulation of ice on structural members comprising flow channels through the ice bed is ≤ 15 percent blockage of the total flow area for each safety analysis section.	18 months
LCO 3.6.5.1.a, 4.6.5.1.b.1	SR 3.6.15.6 (11) (6)	- NOTE - The requirements of this SR are satisfied if the boron concentration and pH values obtained from averaging the individual sample results are within the limits specified below. Verify, by chemical analysis of the stored ice in at least one randomly selected ice basket from each ice condenser bay, that ice bed: a. Boron concentration is a ≥ [1800] ppm and ≤ 2000 2300 ppm; and b. pH is ≥ [9.0] and ≤ [9.5].	[54] months ① ② ②
4.6.5.1.d	SR 3.6.15.6 (11) (5)	Visually inspect, for detrimental structural wear, cracks, corrosion, or other damage, two ice baskets from each azimuthal group of bays. ~~See SR 3.6.15.3.~~ INSERT 3	40 months (TSTF-429) ①

TSTF-429

INSERT 2

Verify that the ice mass of each basket sampled in SR 3.6.15.2 is ≥ 600 lbs.

11

1

TSTF-429

INSERT 3

as defined below:

a. Group 1 - bays 1 through 8;

b. Group 2 - bays 9 through 16; and

c. Group 3 - bays 17 through 24.

Attachment 1, Volume 11, Rev. 0, Page 312 of 494

Ice Bed ~~(Ice Condenser)~~ (1)
3.6.15 (11)

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.6.15.7 (11)	- NOTE - The chemical analysis may be performed on either the liquid solution or on the resulting ice. Verify, by chemical analysis, that ice added to the ice condenser meets the boron concentration and pH requirements of SR 3.6.15.6. (11) (6)	Each ice addition

(1)

DOC M.3

(1)

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.11, ICE BED

1. The headings for ISTS 3.6.15 include the parenthetical expression (Ice Condenser). This identifying information is not included in the CNP 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, many Containment Specifications in the NUREG are not included in the CNP ITS due to design differences. Therefore, ISTS 3.6.15 is renumbered as ITS 3.6.11. In addition, the SRs have been put in the proper order, based on the Frequency.

2. The brackets are removed and the proper plant specific information/value is provided.

3. Minor editorial corrections have been made to the changes made by approved TSTF-429, Rev. 3 to be consistent with the format of the ITS.

Attachment 1, Volume 11, Rev. 0, Page 314 of 494

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

B 3.6 CONTAINMENT SYSTEMS

B 3.6.15 11 Ice Bed (Ice Condenser) 1

BASES

a minimum of 2,200,000 TSTF-429 6

BACKGROUND

The ice bed consists of over 2,721,600 lb of ice stored ~~in 1944 baskets~~ within the ice condenser. The Its primary purpose of the ice bed is to provide a large heat sink in the event of a release of energy from a Design Basis Accident (DBA) in containment. The ice would absorb energy and limit containment peak pressure and temperature during the accident transient. Limiting the pressure and temperature reduces the release of fission product radioactivity from containment to the environment in the event of a DBA.

The ice condenser is an annular compartment enclosing approximately 300° of the perimeter of the upper containment compartment, but penetrating the operating deck so that a portion extends into the lower containment compartment. The lower portion has a series of hinged doors exposed to the atmosphere of the lower containment compartment, which, for normal unit operation, are designed to remain closed. At the top of the ice condenser is another set of doors exposed to the atmosphere of the upper compartment, which also remain closed during normal unit operation. Intermediate deck doors, located below the top deck doors, form the floor of a plenum at the upper part of the ice condenser. These doors also remain closed during normal unit operation. The upper plenum area is used to facilitate surveillance and maintenance of the ice bed.

The ice baskets contain the ice within the ice condenser. The ice bed is considered to consist of the total volume from the bottom elevation of the ice baskets to the top elevation of the ice baskets. The ice baskets position the ice within the ice bed in an arrangement to promote heat transfer from steam to ice. This arrangement enhances the ice condenser's primary function of condensing steam and absorbing heat energy released to the containment during a DBA.

In the event of a DBA, the ice condenser inlet doors (located below the operating deck) open due to the pressure rise in the lower compartment. This allows air and steam to flow from the lower compartment into the ice condenser. The resulting pressure increase within the ice condenser causes the intermediate deck doors and the top deck doors to open, which allows the air to flow out of the ice condenser into the upper compartment. Steam condensation within the ice condenser limits the pressure and temperature buildup in containment. A divider barrier (i.e., operating deck and extensions thereof) TSTF-429

BASES

BACKGROUND (continued)

separates the upper and lower compartments and ensures that the steam is directed into the ice condenser.

INSERT 1

The ice, together with the containment spray, is adequate to absorb at least twice the initial blowdown of steam and water from a ~~DBA and~~ the additional heat loads that would enter containment during several hours following the initial blowdown. The additional heat loads would come from the residual heat in the reactor core, the hot piping and components, and the secondary system, including the steam generators. During the post blowdown period, the ~~Air Return System (ARS)~~ Containment Air Recirculation/Hydrogen Skimmer (CEQ) System returns upper compartment air through the divider barrier to the lower compartment. This serves to equalize pressures in containment and to continue circulating heated air and steam from the lower compartment through the ice condenser where the heat is removed by the remaining ice. (2) (2)

As ice melts, the water passes through the ice condenser floor drains into the lower compartment. Thus, a second function of the ice bed is to be a large source of borated water (via the containment sump) for long term Emergency Core Cooling System (ECCS) and Containment Spray System heat removal functions in the recirculation mode.

A third function of the ice bed and melted ice is to remove fission product iodine that may be released from the core during a DBA. Iodine removal occurs during the ice melt phase of the accident and continues as the melted ice is sprayed into the containment atmosphere by the Containment Spray System. The ice is adjusted to an alkaline pH ~~that facilitates removal of radioactive iodine from the containment atmosphere~~ INSERT 1A. The alkaline pH also minimizes the occurrence of the chloride and caustic stress corrosion on mechanical systems and components exposed to ECCS and Containment Spray System fluids in the recirculation mode of operation. (2)

It is important for ~~the~~ ice to exist in the ice baskets, the ice to be appropriately ~~be uniformly~~ distributed around the 24 ice condenser bays, and for open flow paths to exist around ice baskets. This is especially important during the initial blowdown so that the steam and water mixture entering the lower compartment do not pass through only part of the ice condenser, depleting the ice there while bypassing the ice in other bays. TSTF-429

Two phenomena that can degrade the ice bed during the long service period are:

a. Loss of ice by melting or sublimation; and (3)

2

INSERT 1

loss of coolant accident (LOCA) or at least twice the energy released from a feedwater or main steam line break. The excess capacity is necessary to absorb

2

INSERT 1A

using sodium tetraborate, to assist in minimizing evolution of iodine from the containment sump

 1

BASES

BACKGROUND (continued)

H

b. Obstruction of flow passages through the ice bed due to buildup of frost or ice. Both of these degrading phenomena are reduced by minimizing air leakage into and out of the ice condenser. TSTF-429

The ice bed limits the temperature and pressure that could be expected following a DBA, thus limiting leakage of fission product radioactivity from containment to the environment.

APPLICABLE SAFETY ANALYSES

The limiting DBAs considered relative to containment temperature and pressure are the loss of coolant accident (LOCA) and the steam line break (SLB). The LOCA and SLB are analyzed using computer codes designed to predict the resultant containment pressure and temperature transients. DBAs are not assumed to occur simultaneously or consecutively.

Although the ice condenser is a passive system that requires no electrical power to perform its function, the Containment Spray System and the ARS also function to assist the ice bed in limiting pressures and temperatures. Therefore, the postulated DBAs are analyzed in regards to containment Engineered Safety Feature (ESF) systems, assuming the loss of one ESF bus, which is the worst case single active failure and results in one train each of the Containment Spray System and ARS being inoperable. 2

CEQ System

2

The limiting DBA analyses (Ref. 1) show that the maximum peak containment pressure results from the LOCA analysis and is calculated to be less than the containment design pressure. For certain aspects of the transient accident analyses, maximizing the calculated containment pressure is not conservative. In particular, the cooling effectiveness of the ECCS during the core reflood phase of a LOCA analysis increases with increasing containment backpressure. For these calculations, the containment backpressure is calculated in a manner designed to conservatively minimize, rather than maximize, the calculated transient containment pressures, in accordance with 10 CFR 50, Appendix K (Ref. 2). The maximum peak containment atmosphere temperature results from the SLB analysis and is discussed in the Bases for LCO 3.6.5, "Containment Air Temperature." 4

In addition to calculating the overall peak containment pressures, the DBA analyses include calculation of the transient differential pressures that occur across subcompartment walls during the initial blowdown phase of the accident transient. The internal containment walls and

Attachment 1, Volume 11, Rev. 0, Page 319 of 494

BASES

APPLICABLE SAFETY ANALYSES (continued)

structures are designed to withstand these local transient pressure differentials for the limiting DBAs.

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

LCO

The ice bed LCO requires the existence of the required quantity of stored ice, appropriate distribution of the ice and the ice bed, open flow paths through the ice bed, and appropriate chemical content and pH of the stored ice. The stored ice functions to absorb heat during the blowdown phase and long term phase of a DBA, thereby limiting containment air temperature and pressure. The chemical content and pH of the stored ice provides core SDM (boron content) and assists in removing radioactive iodine from the containment atmosphere when the melted ice is recirculated through the ECCS and the Containment Spray System, respectively. 2

TSTF-429

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause an increase in containment pressure and temperature requiring the operation of the ice bed. Therefore, 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. Therefore, the ice bed is not required to be OPERABLE in these MODES.

ACTIONS

A.1

If the ice bed is inoperable, it must be restored to OPERABLE status within 48 hours. The Completion Time was developed based on operating experience, which confirms that due to the very large mass of stored ice, the parameters comprising OPERABILITY do not change appreciably in this time period. ~~Because of this fact, the Surveillance Frequencies are long (months), except for the ice bed temperature, which is checked every 12 hours.~~ If a degraded condition is identified, even for temperature, with such a large mass of ice it is not possible for the degraded condition to significantly degrade further in a 48 hour period. Therefore, 48 hours is a reasonable amount of time to correct a degraded condition before initiating a shutdown. 5

B.1 and B.2

If the ice bed cannot be restored to OPERABLE status within the required Completion Time, the ~~plant~~ unit must be brought to a MODE in which the 2

Ice Bed (Ice Condenser) 1
B 3.6.~~15~~ 11

BASES

ACTIONS (continued)

LCO does not apply. To achieve this status, the ~~plant~~ unit 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~~ unit conditions from full power conditions in an orderly manner and without challenging ~~plant~~ unit systems. 2

SURVEILLANCE REQUIREMENTS

SR 3.6.~~15~~ 11.1 1

Verifying that the maximum temperature of the ice bed is ≤ ~~[27]~~°F ensures that the ice is kept well below the melting point. The 12 hour Frequency was based on operating experience, which confirmed that, due to the large mass of stored ice, it is not possible for the ice bed temperature to degrade significantly within a 12 hour period and was also based on assessing the proximity of the LCO limit to the melting temperature. 6 2

Furthermore, the 12 hour Frequency is considered adequate in view of indications in the control room, including the alarm, to alert the operator to an abnormal ice bed temperature condition. This SR may be satisfied by use of the Ice Bed Temperature Monitoring System.

SR 3.6.~~15~~ 11.2 1

INSERT 2

~~The weighing program is designed to obtain a representative sample of the ice baskets. The representative sample shall include 6 baskets from each of the 24 ice condenser bays and shall consist of one basket from radial rows 1, 2, 4, 6, 8, and 9. If no basket from a designated row can be obtained for weighing, a basket from the same row of an adjacent bay shall be weighed.~~

~~The rows chosen include the rows nearest the inside and outside walls of the ice condenser (rows 1 and 2, and 8 and 9, respectively), where heat transfer into the ice condenser is most likely to influence melting or sublimation. Verifying the total weight of ice ensures that there is adequate ice to absorb the required amount of energy to mitigate the DBAs.~~

~~If a basket is found to contain < [1400] lb of ice, a representative sample of 20 additional baskets from the same bay shall be weighed. The average weight of ice in these 21 baskets (the discrepant basket and the 20 additional baskets) shall be ≥ [1400] lb at a 95% confidence level.~~

TSTF-429

B 3.6.11

TSTF-429

INSERT 2

Ice mass determination methodology is designed to verify the total as-found (pre-maintenance) mass of ice in the ice bed, and the appropriate distribution of that mass, using a random sampling of individual baskets. The random sample will include at least 30 baskets from each of three defined Radial Zones (at least 90 baskets total). Radial Zone A consists of baskets located in rows [7, 8, and 9] (innermost rows adjacent to the Crane Wall), Radial Zone B consists of baskets located in rows [4, 5, and 6] (middle rows of the ice bed), and Radial Zone C consists of baskets located in rows [1, 2, and 3] (outermost rows adjacent to the Containment Vessel).

radial

structure

8 6 2 8

The Radial Zones chosen include the row groupings nearest the inside and outside walls of the ice bed and the middle rows of the ice bed. These groupings facilitate the statistical sampling plan by creating sub-populations of ice baskets that have similar mean mass and sublimation characteristics.

discussed in Reference 2, except visual estimation which is precluded by Reference 3.

9

Methodology for determining sample ice basket mass will be either by direct lifting or by alternative techniques. Any method chosen will include procedural allowances for the accuracy of the method used. [The number of sample baskets in any Radial Zone may be increased once by adding 20 or more randomly selected baskets to verify the total mass of that Radial Zone.]

(Ref. 3)

8 9

In the event the mass of a selected basket in a sample population (initial or expanded) cannot be determined by any available means (e.g., due to surface ice accumulation or obstruction), a randomly selected representative alternate basket may be used to replace the original selection in that sample population. If employed, the representative alternate must meet the following criteria:

a. Alternate selection must be from the same bay-Zone (i.e., same bay, same Radial Zone) as the original selection, and

;

8 3

b. Alternate selection cannot be a repeated selection (original or alternate) in the current Surveillance, and cannot have been used as an analyzed alternate selection in the three most recent Surveillances.

The complete basis for the methodology used in establishing the 95% confidence level in the total ice bed mass is documented in Reference 4 and approved in Reference 5.

2 3 2

The total ice mass and individual Radial Zone ice mass requirements defined in this Surveillance, and the minimum ice mass per basket requirement defined by SR 3.6.15.3, are the minimum requirements for OPERABILITY. Additional ice mass beyond the SRs is maintained to address sublimation. This sublimation allowance is generally applied to baskets in each Radial Zone, as appropriate, at the beginning of an operating cycle to ensure sufficient ice is available at the end of the operating cycle for the ice condenser to perform its intended design function.

11

8 1 8

The Frequency of 18 months was based on ice storage tests, and the typical sublimation allowance maintained in the ice mass over and above the minimum ice mass assumed in the safety analyses. Operating and maintenance experience has verified that, with

TSTF-429

INSERT 2
(continued)

the 18 month Frequency, the minimum mass and distribution requirements in the ice bed are maintained.

(1)

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~Weighing 20 additional baskets from the same bay in the event a Surveillance reveals that a single basket contains < [1400] lb ensures that no local zone exists that is grossly deficient in ice. Such a zone could experience early melt out during a DBA transient, creating a path for steam to pass through the ice bed without being condensed. The Frequency of 9 months was based on ice storage tests and the allowance built into the required ice mass over and above the mass assumed in the safety analyses. Operating experience has verified that, with the 9 month Frequency, the weight requirements are maintained with no significant degradation between surveillances.~~

TSTF-429

SR 3.6.~~15~~.3 (11)

INSERT 3

~~This SR ensures that the azimuthal distribution of ice is reasonably uniform, by verifying that the average ice weight in each of three azimuthal groups of ice condenser bays is within the limit. The Frequency of 9 months was based on ice storage tests and the allowance built into the required ice mass over and above the mass assumed in the safety analyses. Operating experience has verified that, with the 9 month Frequency, the weight requirements are maintained with no significant degradation between surveillances.~~

TSTF-429

SR 3.6.~~15~~.4 (11)

(1)

This SR ensures that the flow channels through the ice bed have not accumulated ice blockage that exceeds 15 percent of the total flow area through the ice bed region. The allowable 15 percent buildup of ice is based on the analysis of the sub-compartment response to a design basis LOCA with partial blockage of the ice condenser flow channels. The analysis did not perform detailed flow area modeling, but lumped the ice condenser bays into six sections ranging from 2.75 bays to 6.5 bays. Individual bays are acceptable with greater than 15 percent blockage, as long as 15 percent blockage is not exceeded for any analysis section.

To provide a 95 percent confidence that flow blockage does not exceed the allowed 15 percent, the visual inspection must be made for at least 54 (33 percent) of the 162 flow channels per ice condenser bay. The visual inspection of the ice bed flow channels is to inspect the flow area, by looking down from the top of the ice bed, and where view is achievable up from the bottom of the ice bed. Flow channels to be inspected are determined by random sample. As the most restrictive ice bed flow passage is found at a lattice frame elevation, the 15 percent blockage criteria only applies to "flow channels" that comprise the area:

B 3.6.11

TSTF-429

INSERT 3

11

Verifying that each selected sample basket from SR 3.6.~~15~~.2 contains at least 600 lbs of ice in the as-found (pre-maintenance) condition ensures that a significant localized degraded mass condition is avoided. 1

8

Reference

2

This SR establishes a per basket limit to ensure any ice mass degradation is consistent with the initial conditions of the DBA by not significantly affecting the containment pressure response. ~~Ref.~~ ~~4~~ provides insights through sensitivity runs that demonstrate that the containment peak pressure during a DBA is not significantly affected by the ice mass in a large localized region of baskets being degraded below the required safety analysis mean, when the Radial Zone and total ice mass requirements of SR 3.6.~~15~~.2 are satisfied. Any basket identified as containing less than 600 lbs of ice requires appropriately entering ~~the TS Required~~ Action for an inoperable ice bed due to the potential that it may represent a significant condition adverse to quality. 2 11 8 1 8

A

2

As documented in ~~Ref.~~ ~~4~~, maintenance practices actively manage individual ice basket mass above the required safety analysis mean for each Radial Zone. Specifically, each basket is serviced to keep its ice mass above [1132] lbs for ~~Radial~~ Zone A, [1132] lbs for ~~Radial~~ Zone B, and [1132] lbs for ~~Radial~~ Zone C. If a basket sublimates below the safety analysis mean value, this instance is identified within the ~~plant's~~ corrective action program, including evaluating maintenance practices to identify the cause and correct any deficiencies. These maintenance practices provide defense in depth beyond compliance with the ice bed surveillance requirements by limiting the occurrence of individual baskets with ice mass less than the required safety analysis mean. 8 2 8 6 8 CNP 2 8

Insert Page B 3.6.15-6

1

BASES

SURVEILLANCE REQUIREMENTS (continued) 3

5

a. between ice baskets, and

b. past lattice frames and wall panels.

Due to significantly larger flow area in the regions of the upper deck grating and the lower inlet plenum support structures and turning vanes, a gross buildup of ice on these structures would be required to degrade air and steam flow. Therefore, these structures are excluded as part of a flow channel for application of the 15 percent blockage criteria. Industry experience has shown that removal of ice from the excluded structures during the refueling outage is sufficient to ensure they remain operable throughout the operating cycle. Removal of any gross ice buildup on the excluded structures is performed following outage maintenance activities.

Operating experience has demonstrated that the ice bed is the region that is the most flow restrictive, due to the normal presence of ice accumulation of lattice frames and wall panels. The flow area through the ice basket support platform is not a more restrictive flow area because it is easily accessible from the lower plenum and is maintained clear of ice accumulation. There is no mechanistically credible method for ice to accumulate on the ice basket support platform during plant operation. Plant and industry experience has shown that the vertical flow area through the ice basket support platform remains clear of ice accumulation that could produce blockage. Normally only a glaze may develop or exist on the ice basket support platform which is not significant to blockage of flow area. Additionally, outage maintenance practices provide measures to clear the ice basket support platform following maintenance activities of any accumulation of ice that could block flow areas.

on

TSTF-429

unit 2

Frost buildup or loose ice is not to be considered as flow channel blockage, whereas attached ice is considered blockage of a flow channel. Frost is the solid form of water that is loosely adherent, an can be brushed off with the open hand. 7

d

1 move to page B 3.6.15-9 as INSERT A

SR 3.6.15.9 11 6 1

Verifying the chemical composition of the stored ice ensures that the stored ice has a boron concentration ≥ [1800] ppm and ≤ [2000] ppm as sodium tetraborate and a high pH, ≥ [9.0] and ≤ [9.5], in order to meet the requirement for borated water when the melted ice is used in the ECCS recirculation mode of operation. Additionally, the minimum boron concentration setpoint is used to assure reactor subcriticality in a post

2300 6

at 25°C 2 2

limit

Attachment 1, Volume 11, Rev. 0, Page 326 of 494

 1

11

BASES

SURVEILLANCE REQUIREMENTS (continued) 2

limit

LOCA environment, while the maximum boron concentration is used as the bounding value in the hot leg switchover timing calculation (Ref. 6). 4 2

This is accomplished by obtaining at least 24 ice samples. Each sample is taken approximately one foot from the top of the ice of each randomly selected ice basket in each ice condenser bay. The SR is modified by a NOTE that allows the boron concentration and pH value obtained from averaging the individual samples' analysis results to satisfy the requirements of the SR. If either the average boron concentration or average pH value is outside their prescribed limit, then entry into ACTION Condition A is required. Sodium tetraborate has been proven effective in maintaining the boron content for long storage periods, and it also enhances the ability of the solution to remove and retain fission product iodine. ~~The high pH is required to enhance the effectiveness of the ice and the melted ice in removing iodine from the containment atmosphere.~~ This pH range also minimizes the occurrence of chloride and caustic stress corrosion on mechanical systems and components exposed to ECCS and Containment Spray System fluids in the recirculation mode of operation. The Frequency of ~~18~~ 54 months is intended to be consistent with the expected length of three fuel cycles, and was developed considering these facts: 7 7 2 6

1 move to page B 3.6.15-9 as INSERT A

INSERT 4

a. Long term ice storage tests have determined that the chemical composition of the stored ice is extremely stable;

b. There are no normal operating mechanisms that decrease the boron concentration of the stored ice, and pH remains within a 9.0-9.5 range when boron concentrations are above approximately 1200 ppm;

c. Operating experience has demonstrated that meeting the boron concentration and pH requirements has never been a problem; and

d. Someone would have to enter the containment to take the sample, and, if the unit is at power, that person would receive a radiation dose.

3

SR 3.6.15.6 11 5 1

This SR ensures that a representative sampling of ice baskets, which are relatively thin walled, perforated cylinders, have not been degraded by wear, cracks, corrosion, or other damage. ~~Each ice basket must be raised at least 12 feet for this inspection.~~ The Frequency of 40 months for a visual inspection of the structural soundness of the ice baskets is

INSERT 4A

TSTF-429

2 **INSERT 4**

, although the removal of iodine from the containment atmosphere by the sodium tetraborate is not assumed in the accident analysis

TSTF-429 **INSERT 4A**

The SR is designed around a full-length inspection of a sample of baskets, and is intended to monitor the effect of the ice condenser environment on ice baskets. The groupings defined in the SR (two baskets in each azimuthal third of the ice bed) ensure that the sampling of baskets is reasonably distributed.

Attachment 1, Volume 11, Rev. 0, Page 328 of 494

BASES

SURVEILLANCE REQUIREMENTS (continued)

1 INSERT A from pages B 3.6.15-7 and 8

based on engineering judgment and considers such factors as the thickness of the basket walls relative to corrosion rates expected in their service environment and the results of the long term ice storage testing.

SR 3.6.15.7 11

11 1 6

This SR ensures that initial ice fill and any subsequent ice additions meet the boron concentration and pH requirements of SR 3.6.15.6. The SR is modified by a NOTE that allows the chemical analysis to be performed on either the liquid or resulting ice of each sodium tetraborate solution prepared. If ice is obtained from offsite sources, then chemical analysis data must be obtained for the ice supplied. 7

REFERENCES

1. U FSAR, Section ~~6.2~~ 14.3.4. 6 TSTF-429

~~2. 10 CFR 50, Appendix K.~~ INSERT 5 4

4 3. ~~[Westinghouse letter, WAT-D-10686, "Upper Limit Ice Boron Concentration In Safety Analysis"]~~ 2 6

INSERT 7

INSERT 6 9

TSTF-429

INSERT 5

2. Topical Report ICUG-001, "Application of the Active Ice Mass Management (AIMM) Concept to the Ice Condenser Ice Mass Technical Specifications," Rev. 3, September 2003.

TSTF-429

INSERT 6

3. NRC Letter dated September 11, 2003, "Safety Evaluation for Ice Condenser Utility Group Topical Report No. ICUG-001, Revision 2, RE: Application of the Active Ice Mass Management Concept to the Ice Condenser Ice Mass Technical Specification (TAC No. MB3379)."

6

INSERT 7

UFSAR, Tables 5.3-1 and 5.3.2-1.

Attachment 1, Volume 11, Rev. 0, Page 330 of 494

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.11 BASES, ICE BED

1. Changes have been made to be consistent with changes made to the Specification.

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. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

4. The ISTS 3.6.15 (ITS 3.6.11) Bases ASA section includes a discussion concerning the ECCS cooling effectiveness during the core reflood phase of a LOCA analysis. This discussion does not relate to how the ice bed is credited in the analysis for the mitigation of DBAs. Therefore, the discussion is deleted.

5. The discussion concerning Surveillance Frequencies is not appropriate in the ACTIONS Bases. It is adequately addressed in the Surveillance Requirement Bases. Therefore, the discussion has been deleted.

6. The brackets are removed and the proper plant specific information/value is provided.

7. Typographical/grammatical error corrected.

8. Minor editorial corrections have been made to the changes made by approved TSTF-429, Rev. 3 to be consistent with the format of the ITS.

9. These changes to the Bases are a result of the NRC SER (dated 9/11/03) accepting ICUG-001, Rev. 2.

Attachment 1, Volume 11, Rev. 0, Page 331 of 494

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.11, ICE BED

There are no specific NSHC discussions for this Specification.

ATTACHMENT 12

ITS 3.6.12, Ice Condenser Doors

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

ITS 3.6.12

ITS

A.1

CONTAINMENT SYSTEMS

ICE CONDENSER DOORS

LIMITING CONDITION FOR OPERATION

LCO 3.6.12 3.6.5.3 The ice condenser inlet doors, intermediate deck doors, and top deck doors shall be closed and OPERABLE.

Add proposed ACTIONS Note 1 L.1

APPLICABILITY: MODES 1, 2, 3 and 4.

Add proposed ACTIONS Note 2 L.2

ACTION:

Add proposed ACTION A M.1

ACTION B: With one or more ice condenser doors open or otherwise inoperable, POWER OPERATION may continue for up to 14 days provided the ice bed temperature is monitored at least once per 4 hours and the maximum ice bed temperature is maintained less than or equal to 27°F; otherwise, restore the doors to

ACTION C: their closed positions or OPERABLE status (as applicable) within 48 hours

ACTION D: or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.3.1 Inlet Doors - Ice condenser inlet doors shall be:

Once per 12 hours L.3

SR 3.6.12.1 a. ~~Continuously monitored~~ and determined closed ~~by the inlet door position monitoring system~~, and LA.1

b. Demonstrated OPERABLE ~~during shutdown~~ at least once per 18 months by: L.4

SR 3.6.12.5 1. Verifying that the torque required to initially open each door is less than or equal to 675 inch pounds.

SR 3.6.12.4 2. Verifying that opening of each door is not impaired by ice, frost or debris.

Perform a torque test

SR 3.6.12.6 3. ~~Testing~~ each one of the doors ~~and verifying that the torque required to open each door is less than 195 inch-pounds when the door is 40 degrees open. This torque is defined as the "door opening torque" and is equal to the nominal door torque plus a frictional torque component.~~ LA.2

ITS 3.6.12

A.1

ITS

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4. Testing each of the doors and verifying that the torque required to keep each door from closing is greater than 78 inch-pounds when the door is 40 degrees open. This torque is defined as the "door closing torque" and is equal to the nominal door torque minus a frictional torque component.

5. Calculation of the frictional torque of each door tested in accordance with 3 and 4, above. The calculated frictional torque shall be less than or equal to 40 inch-pounds.

LA.2

4.6.5.3.2 Intermediate Deck Doors - Each ice condenser intermediate deck door shall be:

SR 3.6.12.2 a. Verified closed and that opening of each door is not impaired by ice, frost or debris by a visual inspection at least once per 7 days, and

SR 3.6.12.7 b. Demonstrated OPERABLE at least once per 18 months by visually verifying no structural deterioration, by verifying free movement of the vent assemblies, and by ascertaining free movement when lifted with the applicable force shown below.

Door	Lifting Force
1. Adjacent to Crane Wall	Less than or equal to 37.4 lbs.
2. Paired with Door Adjacent to Crane Wall	Less than or equal to 33.8 lbs.
3. Adjacent to Containment Wall	Less than or equal to 31.8 lbs.
4. Paired with Door Adjacent to Containment Wall	Less than or equal to 31.0 lbs.

LA.3

ITS

A.1

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.6.12.3

4.6.5.3.3 Top Deck Doors - Each ice condenser top deck door shall be determined closed and OPERABLE at least once per 92 days by visually verifying:

a. That the doors are in place, and

b. That no condensation, frost, or ice has formed on the doors or blankets which would restrict their lifting and opening if required.

ITS

A.1

CONTAINMENT SYSTEMS

ICE CONDENSER DOORS

LIMITING CONDITION FOR OPERATION

LCO 3.6.12 3.6.5.3 The ice condenser inlet doors, intermediate deck doors, and top deck doors shall be closed and OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Add proposed ACTIONS Note 1 — L.1

Add proposed ACTIONS Note 2 — L.2

Add proposed ACTION A — M.1

ACTION B: With one or more ice condenser doors open or otherwise inoperable, POWER OPERATION may continue for up to 14 days provided the ice bed temperature is monitored at least once per 4 hours and the maximum ice bed temperature is maintained less than or equal to 27°F; otherwise, restore the doors to their

ACTION C: closed positions or OPERABLE status (as applicable) within 48 hours or be in at

ACTION D: least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.3.1 Inlet Doors - Ice condenser inlet doors shall be:

Once per 12 hours — L.3

LA.1

SR 3.6.12.1 a. Continuously monitored and determined closed by the inlet door position monitoring system, and

b. Demonstrated OPERABLE during shutdown at least once per 18 months by:

L.4

SR 3.6.12.5 1. Verifying that the torque required to initially open each door is less than or equal to 675 inch pounds.

SR 3.6.12.4 2. Verifying that opening of each door is not impaired by ice, frost or debris.

Perform a torque test — LA.2

SR 3.6.12.6 3. Testing each one of the doors and verifying that the torque required to open each door is less than 195 inch-pounds when the door is 40 degrees open. This torque is defined as the "door opening torque" and is equal to the nominal door torque plus a frictional torque component.

ITS

A.1

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4. Testing each one of the doors and verifying that the torque required to keep each door from closing is greater than 78 inch-pounds when the door is 40 degrees open. This torque is defined as the "door closing torque" and is equal to the nominal door torque minus a frictional torque component.

5. Calculation of the frictional torque of each door tested in accordance with 3 and 4, above. The calculated frictional torque shall be less than or equal to 40 inch-pounds.

LA.2

4.6.5.3.2 Intermediate Deck Doors - Each ice condenser intermediate deck door shall be:

SR 3.6.12.2 a. Verified closed and that opening of each door is not impaired by ice, frost or debris by a visual inspection at least once per 7 days, and

SR 3.6.12.7 b. Demonstrated OPERABLE at least once per 18 months by visually verifying no structural deterioration, by verifying free movement of the vent assemblies, and by ascertaining free movement when lifted with the applicable force shown below.

Door	Lifting Force
1. Adjacent to Crane Wall	Less than or equal to 37.4 lbs.
2. Paired with Door Adjacent to Crane Wall	Less than or equal to 33.8 lbs.
3. Adjacent to Containment Wall	Less than or equal to 31.8 lbs.
4. Paired with Door Adjacent to Containment Wall	Less than or equal to 31.0 lbs.

LA.3

SR 3.6.12.3 4.6.5.3.3 Top Deck Doors - Each ice condenser top deck door shall be determined closed and OPERABLE at least once per 92 days by visually verifying:

A.1

ITS

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.6.12.3

a. That the doors are in place, and

b. That no condensation, frost, or ice has formed on the doors or blankets which would restrict their lifting and opening if required.

DISCUSSION OF CHANGES
ITS 3.6.12, ICE CONDENSER DOORS

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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-1431, Rev. 2, "Standard Technical Specifications-Westinghouse 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

M.1 The CTS 3.6.5.3 Action provides compensatory actions for one or more ice condenser doors open or otherwise inoperable. Power operation may continue for up to 14 days provided the ice bed temperature is monitored at least once per 4 hours and the maximum ice bed temperature is maintained less than or equal to 27°F. A new requirement has been added (ITS 3.6.12 ACTION A) that addresses inoperabilities associated with one or more ice condenser inlet doors that are physically restrained from opening. The new requirement only allows one hour to restore the inlet door to OPERABLE status. This changes the CTS by adding a more restrictive ACTION for inlet doors which are physically restrained from opening.

The purpose of the CTS Action is to provide adequate compensatory actions for all inoperabilities associated with inlet doors. The CTS 3.6.5.3 Action allows 14 days with an inoperable condenser inlet door. This change is acceptable because the new action provides a short period of time to restore the inoperable ice condenser inlet door to OPERABLE status when it is not able to perform it safety function (i.e., open) because it is physically restrained. The ITS ACTION is necessary to return operation to within the bounds of the safety analysis. The one hour Completion Time is consistent with the ACTIONS for the Containment in ITS LCO 3.6.1. This change is designated as more restrictive as it allows less time to restore the inoperability than in the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.6.5.3.1.a requires the inlet doors to be verified closed "by the inlet door position monitoring system." ITS SR 3.6.12.1 requires the same verification, however the detail on the method to perform the verification is not specified. This changes the CTS by moving the detail on the method to verify the inlet doors are closed to the Bases.

Attachment 1, Volume 11, Rev. 0, Page 342 of 494

DISCUSSION OF CHANGES
ITS 3.6.12, ICE CONDENSER DOORS

The removal of this detail for performing a Surveillance Requirement 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 the ice condenser inlet doors are closed. 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.

LA.2 *(Type 3 – Removing Procedural Details for meeting TS Requirements or Reporting Requirements)* CTS 4.6.5.3.1.b.3 requires testing of each one of the inlet doors and verifying that the torque required to open each door is less than 195 inch-pounds when the door is 40 degrees open. This torque is defined as the "door opening torque" and is equal to the nominal door torque plus a frictional torque component. CTS 4.6.5.3.1.b.4 requires testing of each one of the inlet doors and verifying that the torque required to keep each door from closing is greater than 78 inch-pounds when the door is 40 degrees open. This torque is defined as the "door closing torque" and is equal to the nominal door torque plus a frictional torque component. CTS 4.6.5.3.1.b.5 requires a calculation of the frictional torque of each door tested in accordance with 3 and 4, above. The calculated frictional torque shall be less than or equal to 40 inch-pounds. ITS SR 3.6.12.6 requires the performance of a torque test on each inlet door. This changes the CTS by moving the torque design limits and definitions to the Bases.

The removal of these details for performing a Surveillance Requirement 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 torque test on the inlet doors. Also, this change is acceptable because the removed information will be adequately controlled in 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.

LA.3 *(Type 3 – Removing Procedural Details for meeting TS Requirements or Reporting Requirements)* CTS 4.6.5.3.2.b requires an inspection of each ice condenser intermediate deck door by visually verifying no structural deterioration, by verifying free movement of the vent assemblies, and by ascertaining free movement when lifted with the applicable force shown. CTS 4.6.5.3.2.b also lists the required lifting force for various doors. ITS SR 3.6.12.7 requires the same inspections, however the locations of the doors and associated lifting forces are not listed. This changes the CTS by moving the locations of the doors and associated lifting forces to the Bases.

The removal of these details for performing a Surveillance Requirement 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 free movement of each intermediate door. 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 procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.6.5.3 provides an Action for one or more inoperable ice condenser doors. ITS 3.6.12 provides similar ACTIONS, however a Note is added to the CTS Action (ITS 3.6.12 ACTIONS Note 1) that states "Separate Condition entry is allowed for each ice condenser door." This modifies the CTS by providing a specific allowance to enter the Action for each ice condenser door separately.

The purpose of the CTS 3.6.5.3 Action is to minimize the time the unit is operating with inoperable ice condenser doors. This change is acceptable because the 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 Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. ITS 3.6.12 ACTION A has been added (as discussed in DOC M.1) to minimize the time one or more ice condenser inlet doors are inoperable due to being physically restrained from opening. The Completion Time for restoration is one hour. ITS 3.6.12 ACTION B covers the condition of one or more ice condenser doors inoperable for reasons other than Condition A (i.e., the doors physically will not open) or not closed. The Completion Time to restore a door in this condition is 14 days. In addition, during this 14 day period, the ice bed temperature must be verified to be $\leq$ 27°F once every 4 hours. The addition of ITS 3.6.12 ACTION A minimizes the time the ice condenser doors are inoperable by being physically restrained from opening and therefore minimizes the time allowed to be outside the containment analysis assumptions. When operating in ITS 3.6.12 ACTION B, the verification of the ice bed is OPERABLE is ensured by verifying the ice bed temperature is $\leq$ 27°F. Therefore, the Completion Time of 14 days is appropriate. The addition of the ITS 3.6.12 ACTIONS Note 1 is acceptable since the proposed compensatory

Attachment 1, Volume 11, Rev. 0, Page 344 of 494

actions minimize risk associated with continued operation while providing time to repair inoperable features. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.2 *(Category 4 – Relaxation of Required Action)* The CTS 3.6.5.3 Action provides specific actions to be taken if an ice condenser intermediate deck or top deck door is open or inoperable. ITS 3.6.12 ACTIONS Note 2 states that when an ice condenser intermediate deck or top deck door is inoperable for a short duration solely due to personnel standing on or opening the door to perform required Surveillances, minor preventative maintenance, or system walkdowns, entry into associated Conditions and Required Actions is not required. This changes the CTS by allowing an intermediate deck or top deck door to be inoperable for a short duration to perform routine evolutions without requiring entry into the associated Actions.

The purpose of the CTS 3.6.5.3 Action is to minimize the time the unit is operating with inoperable ice condenser doors. This change is acceptable because the doors are inoperable only for short durations, and the reason for the inoperability is to either perform required Surveillances, perform preventative maintenance to improve reliability of the doors or ensure the doors do not become inoperable, or simply to be walking on or opening the doors for inspections. In addition, during this short duration, the ice bed temperature is normally continuously monitored (as described in the Bases). This helps to ensure that an ice bed temperature change due to an open door will be detected and appropriate actions taken (as required by ITS 3.6.11). Also, the number of doors walked on simultaneously (and therefore, potentially incapable of opening) is small when compared to the total number of doors. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.3 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.6.5.3.1.a requires the inlet doors of the ice condenser to be "continuously monitored" and determined to be closed by the Inlet Door Position Monitoring System. ITS SR 3.6.12.1 requires the verification that all inlet doors are closed every 12 hours. This changes the CTS by allowing the ice condenser inlet doors to be monitored less frequently. The change to the method of verifying the ice doors are closed is discussed in DOC LA.1.

The purpose of CTS 4.6.5.3.1.a is to ensure the ice condenser inlet doors are closed. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The inlet doors will open when there is significant pressure buildup in the containment lower compartment. During an accident this pressure buildup is generated by the energy introduced by the Reactor Coolant System blowdown or by operation of the Containment Air Recirculation/Hydrogen Skimmer System. During normal operation these conditions are not expected and the doors should remain closed. Therefore the 12 hour Frequency is considered sufficient. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

Attachment 1, Volume 11, Rev. 0, Page 345 of 494

DISCUSSION OF CHANGES
ITS 3.6.12, ICE CONDENSER DOORS

L.4 *(Category 12 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.6.5.3.1.b requires verification that each ice condenser inlet door is OPERABLE every 18 months during shutdown. Testing includes verification of the torque required to initially open each door, verification that the opening of each door is not impaired by ice, frost, or debris, and verification of the opening and closing torques when the door is 40 degrees open. ITS SR 3.6.12.4, SR 3.6.12.5, and SR 3.6.12.6 require the same testing every 18 months, 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 Surveillances during shutdown.

The purpose of CTS 4.6.5.3.1.b is to ensure the ice condenser inlet doors are OPERABLE. 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 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.

Attachment 1, Volume 11, Rev. 0, Page 346 of 494

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

3.6 CONTAINMENT SYSTEMS

CTS

3.6.16 12 Ice Condenser Doors (Ice Condenser) 1

LCO 3.6.5.3

LCO 3.6.16 The ice condenser inlet doors, intermediate deck doors, and top deck [doors] shall be OPERABLE and closed. 2

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

ACTIONS

- NOTE - 5

DOC L.1

1. Separate Condition entry is allowed for each ice condenser door. INSERT 1 3

	CONDITION	REQUIRED ACTION		COMPLETION TIME	
Doc M1	A. One or more ice condenser inlet doors inoperable due to being physically restrained from opening.	A.1	Restore inlet door to OPERABLE status.	1 hour	
Action	B. One or more ice condenser doors inoperable for reasons other than Condition A or not closed.	B.1	Verify maximum ice bed temperature is ≤ [27]°F.	Once per 4 hours	2
		AND			
		B.2	Restore ice condenser door to OPERABLE status and closed positions.	14 days	6
Action	C. Required Action and associated Completion Time of Condition B not met.	C.1	Restore ice condenser door to OPERABLE status and closed positions.	48 hours	6
Action	D. Required Action and associated Completion Time of Condition A or C not met.	D.1	Be in MODE 3.	6 hours	
		AND			
		D.2	Be in MODE 5.	36 hours	

CTS

3

INSERT 1

DOC L.2 2. When an ice condenser intermediate deck or top deck door is inoperable for a short duration solely due to personnel standing on or opening the door to perform required Surveillances, minor preventative maintenance, or system walkdowns, entry into associated Conditions and Required Actions is not required.

CTS

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE		FREQUENCY	
4.6.5.3.1.a	SR 3.6.~~16~~.1 (1) (12)	Verify all inlet doors ~~indicate~~ are closed ~~by the Inlet Door Position Monitoring System~~.	12 hours	(1) (4)
4.6.5.3.2.a	SR 3.6.~~16~~.2	Verify, by visual inspection, each intermediate deck door is closed and not impaired by ice, frost, or debris.	7 days	(1)
4.6.5.3.1.b.2	SR 3.6.~~16~~.~~3~~ (1) (12) (4) INSERT 2 from next page (5)	Verify, by visual inspection, each inlet door is not impaired by ice, frost, or debris.	~~[3 months during first year after receipt of license]~~ ~~AND~~ ~~[~~18~~]~~ months (2) (5)	(1) (5)
4.6.5.3.1.b.1	SR 3.6.~~16~~.~~4~~ (5)	Verify torque required to cause each inlet door to begin to open is ≤ ~~[~~675~~]~~ in-lb.	~~[3 months during first year after receipt of license]~~ ~~AND~~ ~~[~~18~~]~~ months (2) (5)	(2) (1) (5)
4.6.5.3.1.b.3	SR 3.6.~~16~~.~~5~~ (1) (12) (6)	Perform a torque test on ~~[a sampling of ≥ 25% of the]~~ each inlet door~~s~~.	~~[3 months during first year after receipt of license]~~ ~~AND~~ ~~[~~18~~]~~ months (2) (5)	(2) (1) (5)
4.6.5.3.2.b	SR 3.6.~~16~~.~~6~~ (7)	Verify for each intermediate deck door: a. No visual evidence of structural deterioration~~,~~; b. Free movement of the vent assemblies~~,~~; and c. Free movement of the door.	~~[3 months during first year after receipt of license]~~ ~~AND~~ ~~[~~18~~]~~ months (2) (5)	(1) (5) (7) (7)

Ice Condenser Doors ~~(Ice Condenser)~~ 1
3.6.~~16~~ 12

CTS

SURVEILLANCE REQUIREMENTS (continued)

CTS	SURVEILLANCE	FREQUENCY
4.6.5.3.3	SR 3.6.~~16.6~~ 12 3 1 Verify, by visual inspection, each top deck ~~[~~door~~]~~: a. Is in place; and b. Has no condensation, frost, or ice formed on the ~~[~~door~~]~~ that would restrict its opening.	92 days 1 5 2

2

move to previous page as INSERT 2 5

Attachment 1, Volume 11, Rev. 0, Page 351 of 494

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.12, ICE CONDENSER DOORS

1. The headings for ISTS 3.6.16 include the parenthetical expression (Ice Condenser). This identifying information is not included in the CNP 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, many Containment Specifications in the NUREG are not included in the CNP ITS due to design differences. Therefore, ISTS 3.6.16 is renumbered as ITS 3.6.12.

2. The brackets are removed and the proper plant specific information/value is provided.

3. The ISTS Bases for ACTIONS B.1 and B.2 (last sentence) state that entry into Condition B is not required due to personnel standing on or opening an intermediate deck or top deck door for short durations to perform required Surveillance, minor maintenance such as ice removal, or routine tasks such as system walkdowns. As documented in Part 9900 of the NRC Inspection Manual, Technical Guidance - Licensee Technical Specifications Interpretations, and in the ITS Bases Control Program (ITS 5.5.12), neither the Technical Specifications Bases nor Licensee generated interpretations can be used to change the Technical Specification requirements. Thus, since the ISTS do not provide for this option, the Bases cannot change the Technical Specifications requirement. To preclude this problem, a Note has been added to the ITS (ACTIONS Note 2) to allow an intermediate deck or top deck door to be inoperable (i.e., open or incapable of opening) for short durations during the ISTS Bases specified evolutions. During this time, the ice bed temperature should be continuously monitored to ensure the open door does not result in ice bed temperature greater than the limit. This new Note maintains the intent of the ISTS Bases allowance.

4. The requirement in ISTS SR 3.6.16.1 (ITS SR 3.6.12.1) to use the Inlet Door Position Monitoring System has been deleted. The Bases for this Surveillance has been revised to state that the verification of the inlet doors is normally performed using the Inlet Door Monitoring System. This change is made because if the Inlet Door Position Monitoring System is inoperable, then the Surveillance requiring verification that all inlet doors are closed will not be met. However, no inlet doors may actually be open. The requirements of the Inlet Door Position Monitoring System in CTS 3/4.6.5.4 have been relocated to the Technical Requirements Manual as documented in CTS 3/4.6.5.4 DOC R.1 and the Split Report. This relocation is consistent with the analysis documented in WCAP-11618, "Methodically Engineered Restructured and Improved Technical Specifications, MERITS Program - Phase II Task 5, Criteria Application," including Addendum 1, and the NRC Staff Review of NSSS Vendor Owners Groups Application of The Commission's Interim Policy Statement Criteria To Standard Technical Specifications, Wilgus/Murley letter dated May 9. In addition, this change is consistent with other Surveillance Requirements that require verification of certain parameters and do not include in the Surveillance Requirement the specific instrumentation used to perform the verification.

5. The bracketed first Frequency (3 months during first year after receipt of license) in ISTS SR 3.6.16.3, SR 3.6.16.4, SR 3.6.16.5, and SR 3.6.16.6 has been deleted since it no longer applies to CNP Units 1 and 2. Both units are more than 3 months

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.12, ICE CONDENSER DOORS

from the receipt of the license. The SRs have been put in the proper order, based on the Frequency.

6. Typographical/grammatical error corrected.

7. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

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

B 3.6 CONTAINMENT SYSTEMS ①

B 3.6.16 Ice Condenser Doors (Ice Condenser)
⑫

BASES

BACKGROUND

The ice condenser doors consist of the inlet doors, the intermediate deck doors, and the top deck doors. The functions of the doors are to:

a. Seal the ice condenser from air leakage during the lifetime of the unit; and ②

b. Open in the event of a Design Basis Accident (DBA) to direct the hot steam air mixture from the DBA into the ice bed, where the ice would absorb energy and limit containment peak pressure and temperature during the accident transient.

Limiting the pressure and temperature following a DBA reduces the release of fission product radioactivity from containment to the environment.

The ice condenser is an annular compartment enclosing approximately 300° of the perimeter of the upper containment compartment, but penetrating the operating deck so that a portion extends into the lower containment compartment. The inlet doors separate the atmosphere of the lower compartment from the ice bed inside the ice condenser. The top deck doors are above the ice bed and exposed to the atmosphere of the upper compartment. The intermediate deck doors, located below the top deck doors, form the floor of a plenum at the upper part of the ice condenser. This plenum area is used to facilitate surveillance and maintenance of the ice bed.

The ice baskets held in the ice bed within the ice condenser are arranged to promote heat transfer from steam to ice. This arrangement enhances the ice condenser's primary function of condensing steam and absorbing heat energy released to the containment during a DBA.

In the event of a DBA, the ice condenser inlet doors (located below the operating deck) open due to the pressure rise in the lower compartment. This allows air and steam to flow from the lower compartment into the ice condenser. The resulting pressure increase within the ice condenser causes the intermediate deck doors and the top deck doors to open, which allows the air to flow out of the ice condenser into the upper compartment. Steam condensation within the ice condensers limits the pressure and temperature buildup in containment. A divider barrier

BASES

BACKGROUND (continued)

separates the upper and lower compartments and ensures that the steam is directed into the ice condenser.

at least twice

The ice, together with the containment spray, serves as a containment heat removal system and is adequate to absorb the initial blowdown of steam and water from a ~~DBA as well as~~ the additional heat loads that would enter containment during the several hours following the initial blowdown. The additional heat loads would come from the residual heat in the reactor core, the hot piping and components, and the secondary system, including the steam generators. During the post blowdown period, the ~~Air Return System (ARS)~~ returns upper compartment air through the divider barrier to the lower compartment. This serves to equalize pressures in containment and to continue circulating heated air and steam from the lower compartment through the ice condenser, where the heat is removed by the remaining ice. 3 3

INSERT 1

Containment Air Recirculation/Hydrogen Skimmer (CEQ) System

The water from the melted ice drains into the lower compartment where it serves as a source of borated water (via the containment sump) for the Emergency Core Cooling System (ECCS) and the Containment Spray System heat removal functions in the recirculation mode. The ice (via the Containment Spray System) and the recirculated ice melt also serve to clean up the containment atmosphere.

The ice condenser doors ensure that the ice stored in the ice bed is preserved during normal operation (doors closed) and that the ice condenser functions as designed if called upon to act as a passive heat sink following a DBA.

APPLICABLE SAFETY ANALYSES

The limiting DBAs considered relative to containment pressure and temperature are the loss of coolant accident (LOCA) and the steam line break (SLB). The LOCA and SLB are analyzed using computer codes designed to predict the resultant containment pressure and temperature transients. DBAs are assumed not to occur simultaneously or consecutively. 3

CEQ System

Although the ice condenser is a passive system that requires no electrical power to perform its function, the Containment Spray System and ~~ARS~~ also function to assist the ice bed in limiting pressures and temperatures. Therefore, the postulated DBAs are analyzed with respect to Engineered Safety Feature (ESF) systems, assuming the loss of one ESF bus, which is the worst case single active failure and results in one train each of the Containment Spray System and the ~~ARS~~ being rendered inoperable. 3

CEQ System

Attachment 1, Volume 11, Rev. 0, Page 356 of 494

3

INSERT 1

loss of coolant accident (LOCA) or at least twice the energy released from a feedwater or main steam line break. The excess capacity is necessary to absorb

Attachment 1, Volume 11, Rev. 0, Page 357 of 494

BASES

APPLICABLE SAFETY ANALYSES (continued)

The limiting DBA analyses (Ref. 1) show that the maximum peak containment pressure results from the LOCA analysis and is calculated to be less than the containment design pressure. ~~For certain aspects of transient accident analyses, maximizing the calculated containment pressure is not conservative. In particular, the cooling effectiveness of the ECCS during the core reflood phase of a LOCA analysis increases with increasing containment backpressure. For these calculations, the containment backpressure is calculated in a manner designed to conservatively minimize, rather than maximize, the calculated transient containment pressures, in accordance with 10 CFR 50, Appendix K (Ref. 2).~~ 4

The maximum peak containment atmosphere temperature results from the SLB analysis and is discussed in the Bases for LCO 3.6.5~~B~~, "Containment Air Temperature." 1

An additional design requirement was imposed on the ice condenser door design for a small break accident in which the flow of heated air and steam is not sufficient to fully open the doors.

For this situation, the doors are designed so that all of the doors would partially open by approximately the same amount. Thus, the partially opened doors would modulate the flow so that each ice bay would receive an approximately equal fraction of the total flow.

This design feature ensures that the heated air and steam will not flow preferentially to some ice bays and deplete the ice there without utilizing the ice in the other bays.

In addition to calculating the overall peak containment pressures, the DBA analyses include the calculation of the transient differential pressures that would occur across subcompartment walls during the initial blowdown phase of the accident transient. The internal containment walls and structures are designed to withstand the local transient pressure differentials for the limiting DBAs.

The ~~I~~ce ~~C~~ondenser ~~D~~oors satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii). 3

LCO

This LCO establishes the minimum equipment requirements to assure that the ice condenser doors perform their safety function. The ice condenser inlet doors, intermediate deck doors, and top deck doors must be closed to minimize air leakage into and out of the ice condenser, with its attendant leakage of heat into the ice condenser and loss of ice

BASES

LCO (continued)

through melting and sublimation. The doors must be OPERABLE to ensure the proper opening of the ice condenser in the event of a DBA. OPERABILITY includes being free of any obstructions that would limit their opening, and for the inlet doors, being adjusted such that the opening and closing torques are within limits. The ice condenser doors function with the ice condenser to limit the pressure and temperature that could be expected following a DBA.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause an increase in containment pressure and temperature requiring the operation of the ice condenser doors. Therefore, the LCO is applicable in MODES 1, 2, 3, and 4.

The probability and consequences of these events in MODES 5 and 6 are reduced due to the pressure and temperature limitations of these MODES. Therefore, the ice condenser doors are not required to be OPERABLE in these MODES.

ACTIONS

(Note 1) ~~A~~ Note ~~provides~~ clarification that, for this LCO, separate Condition entry is allowed for each ice condenser door. INSERT 2 1

A.1

If an ~~one or more~~ ice condenser inlet door~~s~~ ~~are~~ is inoperable due to being physically restrained from opening, the door~~(s)~~ must be restored to OPERABLE status 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 containment to be restored to OPERABLE status within 1 hour. 5

B.1 and B.2

If an ~~one or more~~ ice condenser door~~s~~ ~~are~~ is determined to be ~~partially open or otherwise~~ inoperable for reasons other than Condition A or if a door is found that is not closed, it is acceptable to continue unit operation for up to 14 days, provided the ice bed temperature ~~instrumentation~~ is monitored once per 4 hours to ensure that the open or inoperable door is not allowing enough air leakage to cause the maximum ice bed temperature to approach the melting point. The ~~Frequency~~ Completion Time of once per 4 hours is based on the fact that temperature changes cannot occur rapidly in the ice bed because of the large mass of ice involved. The 14 day Completion Time is based on long term ice storage tests that indicate 5

1 **INSERT 2**

Note 2 has been added to allow an intermediate deck or top deck door to be inoperable for a short duration solely due to personnel standing on or opening the door to perform required Surveillances, minor preventative maintenance, or system walkdowns, and not require entry into associated Conditions and Required Actions. This is acceptable since the ice bed temperature is normally continuously monitored using an alarm in the control room, which alarms on increasing ice bed temperature.

Attachment 1, Volume 11, Rev. 0, Page 360 of 494

Ice Condenser Doors ~~(Ice Condenser)~~ (1)
B 3.6.~~16~~ (12)

BASES

ACTIONS (continued)

that if the temperature is maintained below [27]°F, there would not be a significant loss of ice from sublimation. ~~If the maximum ice bed temperature is > [27]°F at any time, the situation reverts to Condition C and a Completion Time of 48 hours is allowed to restore the inoperable door to OPERABLE status or enter into Required Actions D.1 and D.2. Ice bed temperature must be verified to be within the specified Frequency as augmented by the provisions of SR 3.0.2. If this verification is not made, Required Actions D.1 and D.2, not Required Action C.1, must be taken.~~ (7) ~~Entry into Condition B is not required due to personnel standing on or opening an intermediate deck or upper deck door for short durations to perform required surveillances, minor maintenance such as ice removal, or routine tasks such as system walkdowns.~~ (1) (6)

C.1

If Required Action~~s~~ B.1 or B.2 ~~are~~ and associated Completion Time is not met, the doors must be restored to OPERABLE status and closed positions within 48 hours. The 48 hour Completion Time is based on the fact that, with the very large mass of ice involved, it would not be possible for the temperature to ~~de~~ increase to the melting point and a significant amount of ice to melt in a 48 hour period. ~~Condition C is entered from Condition B only when the Completion Time of Required Action B.2 is not met or when the ice bed temperature has not been verified at the required frequency.~~ (7) (8) (9)

INSERT 3 (8)

D.1 and D.2

~~If the ice condenser doors cannot be restored to OPERABLE status within the required Completion Time~~, the ~~plant~~ unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the ~~plant~~ unit 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~~ unit conditions from full power conditions in an orderly manner and without challenging ~~plant~~ unit systems. (3)

SURVEILLANCE REQUIREMENTS

SR 3.6.~~16~~.1 (12) (1)

Verifying ~~by means of the Inlet Door Position Monitoring System~~ that the inlet doors are in their closed positions makes the operator aware of an inadvertent opening of one or more doors. The Frequency of 12 hours ensures that operators on each shift are aware of the status of the doors. INSERT 4 (1)

8 **INSERT 3**

With any Required Action and associated Completion Time of Condition A or C not met

1 **INSERT 4**

The verification is normally performed using the Inlet Door Position Monitoring System.

Attachment 1, Volume 11, Rev. 0, Page 362 of 494

BASES

SURVEILLANCE REQUIREMENTS (continued) (1)

SR 3.6.16.2 (12)

Verifying, by visual inspection, that each intermediate deck door is closed and not impaired by ice, frost, or debris provides assurance that the intermediate deck doors (which form the floor of the upper plenum where frequent maintenance on the ice bed is performed) have not been left open or obstructed. The Frequency of 7 days is based on engineering judgment and takes into consideration such factors as the frequency of entry into the intermediate ice condenser deck, the time required for significant frost buildup, and the probability that a DBA will occur.

(1) INSERT 4A from page B 3.6.16-8

SR 3.6.16.3 (12) (4) (1)

Verifying, by visual inspection, that the ice condenser inlet doors are not impaired by ice, frost, or debris provides assurance that the doors are free to open in the event of a DBA. ~~For this unit,~~ the Frequency of [18] months ~~[3 months during the first year after receipt of license]~~ is based on door design, which does not allow water condensation to freeze, and operating experience, which indicates that the inlet doors very rarely fail to meet their SR acceptance criteria. Because of high radiation in the vicinity of the inlet doors during power operation, this Surveillance is normally performed during a shutdown. (3) (1) (6)

SR 3.6.16.4 (12) (5) (1)

Verifying the opening torque of the inlet doors provides assurance that no doors have become stuck in the closed position. The value of [675] in-lb is based on the design opening pressure on the doors of 1.0 lb/ft^2. For this unit, the Frequency of [18] months ~~[3 months during the first year after receipt of license]~~ is based on the passive nature of the closing mechanism (i.e., once adjusted, there are no known factors that would change the setting, except possibly a buildup of ice; ice buildup is not likely, however, because of the door design, which does not allow water condensation to freeze). Operating experience indicates that the inlet doors usually meet their SR acceptance criteria. Because of high radiation in the vicinity of the inlet doors during power operation, this Surveillance is normally performed during a shutdown. (6) (1) (6)

SR 3.6.16.5 (12) (6) (1)

The torque test Surveillance ensures that the inlet doors have not developed excessive friction and that the return springs are producing a door return torque within limits. The torque test consists of the following:

BASES

SURVEILLANCE REQUIREMENTS (continued)

5

1. Verify that the torque, T(OPEN), required to cause opening motion at the [40]° open position is ≤ [195] in-lb, 3 2

2. Verify that the torque, T(CLOSE), required to hold the door stationary (i.e., keep it from closing) at the [40]° open position is ≥ [78] in-lb, and 3 6 2

3. Calculate the frictional torque, T(FRICT) = 0.5 {T(OPEN) - T(CLOSE)}, and verify that the T(FRICT) is ≤ [40] in-lb. 6

INSERT 5 3

The purpose of the friction and return torque Specifications is to ensure that, in the event of a small break LOCA or SLB, all of the 24 door pairs open uniformly. This assures that, during the initial blowdown phase, the steam and water mixture entering the lower compartment does not pass through part of the ice condenser, depleting the ice there, while bypassing the ice in other bays. The Frequency of [18] months 6
~~(3 months during the first year after receipt of license)~~ is based on the passive nature of the closing mechanism (i.e., once adjusted, there are no known factors that would change the setting, except possibly a buildup of ice; ice buildup is not likely, however, because of the door design, which does not allow water condensation to freeze). Operating experience indicates that the inlet doors very rarely fail to meet their SR acceptance criteria. Because of high radiation in the vicinity of the inlet doors during power operation, this Surveillance is normally performed during a shutdown. 1

SR 3.6.16.6 12 7 1

Verifying the OPERABILITY of the intermediate deck doors provides assurance that the intermediate deck doors are free to open in the event of a DBA. The verification consists of visually inspecting the intermediate doors for structural deterioration, verifying free movement of the vent assemblies, and ascertaining free movement of each door when lifted with the applicable force shown below:

	Door	Lifting Force
a.	Adjacent to crane wall	≤ 37.4 lb 3
b.	Paired with door adjacent to crane wall	≤ 33.8 lb
c.	Adjacent to containment wall	≤ 31.8 lb

2

INSERT 5

T (OPEN) is known as the "door opening torque" and is equal to the nominal door torque plus a frictional torque component. T(CLOSE) is defined as the "door closing torque" and is equal to the nominal door torque minus a frictional torque component.

Attachment 1, Volume 11, Rev. 0, Page 365 of 494

BASES

SURVEILLANCE REQUIREMENTS (continued)

d. Paired with door adjacent to containment wall ≤ 31.0 lb

The 18 month Frequency (3 months during the first year after receipt of license) is based on the passive design of the intermediate deck doors, the frequency of personnel entry into the intermediate deck, and the fact that SR 3.6.16.2 confirms on a 7 day Frequency that the doors are not impaired by ice, frost, or debris, which are ways a door would fail the opening force test (i.e., by sticking or from increased door weight). 1

SR 3.6.16.7 12 3 1

move to page B 3.6.16-6 as INSERT 4A 1

Verifying, by visual inspection, that the top deck doors are in place and not obstructed provides assurance that the doors are performing their function of keeping warm air out of the ice condenser during normal operation, and would not be obstructed if called upon to open in response to a DBA. The Frequency of 92 days is based on engineering judgment, which considered such factors as the following:

a. The relative inaccessibility and lack of traffic in the vicinity of the doors make it unlikely that a door would be inadvertently left open; 2

b. Excessive air leakage would be detected by temperature monitoring in the ice condenser; and 2

c. The light construction of the doors would ensure that, in the event of a DBA, air and gases passing through the ice condenser would find a flow path, even if a door were obstructed.

REFERENCES

1. U FSAR, ~~Chapter [15]~~ Section 14.3.4 6

2. 10 CFR 50, Appendix K. 4

Attachment 1, Volume 11, Rev. 0, Page 366 of 494

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.12 BASES, ICE CONDENSER DOORS

1. Changes have been made to be consistent with changes made to the ITS.

2. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

3. 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.

4. The ISTS 3.6.16 (ITS 3.6.12) Bases ASA section includes a discussion concerning the ECCS cooling effectiveness during the core reflood phase of a LOCA analysis. This discussion does not relate to how the Ice Condenser Doors are credited in the analysis for the mitigation of DBAs. Therefore, the discussion is deleted.

5. Changes have been made to be consistent with the Specification. In the specific case of changing the words "one or more" to "an" and "doors are" to "door is" in ACTIONS A.1 and B.1 and B.2 Bases, this was done since separate Condition entry is allowed for each inoperable door.

6. The brackets are removed and the proper plant specific information/value is provided.

7. The Bases wording is deleted because the Bases places additional restrictions than those specified in the Specification. In accordance with the Specification, if ACTION B is not met for any reason (Required Actions B.1 or B.2 not met), then the default ACTION is ACTION C, while the ISTS Bases requires Required Actions D.1 and D.2 to be applied if the temperature verification is not made. The Required Actions in the Specification are consistent with the current allowances in the CTS, therefore the change is appropriate.

8. The words in the ISTS do not convey the complete intent of the actual ISTS Condition and when the Condition should be entered. Therefore, to be consistent with the actual ISTS Condition words, the Bases have been modified.

9. Typographical/grammatical error corrected.

Attachment 1, Volume 11, Rev. 0, Page 367 of 494

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.12, ICE CONDENSER DOORS

There are no specific NSHC discussions for this Specification.

ATTACHMENT 13

ITS 3.6.13, Divider Barrier Integrity

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

ITS 3.6.13

ITS

A.1

CONTAINMENT SYSTEMS

DIVIDER BARRIER PERSONNEL ACCESS DOORS AND EQUIPMENT HATCHES

LIMITING CONDITION FOR OPERATION

LCO 3.6.13, SR 3.6.13.1

3.6.5.5 The personnel access doors and equipment hatches between the containment's upper and lower compartments shall be OPERABLE and closed.

A.2

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Add proposed Condition A Note

one or more

A.3

ACTION A

With a personnel access door or equipment hatch inoperable or open except for personnel transit entry and T_{avg} greater than 200°F, restore the door or hatch to OPERABLE status or to its closed position (as applicable) within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

LCO 3.6.13 Note

ACTION C

SURVEILLANCE REQUIREMENTS

SR 3.6.13.1, SR 3.6.13.3

4.6.5.5.1 The personnel access doors and equipment hatches between the containment's upper and lower compartments shall be determined closed by a visual inspection prior to increasing the Reactor Coolant System T_{avg} above 200°F and after each personnel transit entry when the Reactor Coolant System T_{avg} is above 200°F.

SR 3.6.13.2

4.6.5.5.2 The personnel access doors and equipment hatches between the containment's upper and lower compartments shall be determined OPERABLE by visually inspecting the seals and sealing surfaces of these penetrations and verifying no detrimental misalignments, cracks or defects in the sealing surfaces, or apparent deterioration of the seal material:

a. Prior to final closure of the penetration each time it has been opened, and

b. At least once per 10 years for penetrations containing seals fabricated from resilient materials.

ITS

A.1

CONTAINMENT SYSTEMS

DIVIDER BARRIER SEAL

LIMITING CONDITION FOR OPERATION

LCO 3.6.13 — 3.6.5.9 The divider barrier seal shall be OPERABLE. A.2

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION: Add proposed ACTIONS B and C A.4

ACTIONS B and C — ~~With the divider barrier seal inoperable, restore the seal to OPERABLE status prior to increasing the Reactor Coolant System temperature above 200°F.~~

SURVEILLANCE REQUIREMENTS

4.6.5.9 The divider barrier seal shall be determined OPERABLE at least once per ~~18~~ 24 months ~~during shutdown~~ by: L.2 L.1

SR 3.6.13.4 — a. Removing two divider barrier seal test coupons and verifying that the physical properties of the test coupons are within the acceptable range of values shown in Table 3.6-2.

SR 3.6.13.5 — b. Visually inspecting at least 95 percent of the seal's entire length and:

1. Verifying that the seal and seal mounting bolts are properly installed, and

2. Verifying that the seal material shows no visual evidence of deterioration due to holes, ruptures, chemical attack, abrasion, radiation damage, or changes in physical appearances.

A.1

ITS

SR 3.6.13.4

TABLE 3.6-2

DIVIDER BARRIER SEAL
ACCEPTABLE PHYSICAL PROPERTIES

~~Material~~	Tensile Strength	Elongation
~~Uniroyal 3807 or Equal*~~	120 psi	100%

LA.1

~~*Equal defined as meeting at least the requirements discussed in Question 5.98 of the Plant's FSAR.~~

LA.1

ITS 3.6.13

A.1

ITS

CONTAINMENT SYSTEMS

DIVIDER BARRIER PERSONNEL ACCESS DOORS AND EQUIPMENT HATCHES

LIMITING CONDITION FOR OPERATION

LCO 3.6.13, SR 3.6.13.1

3.6.5.5 The personnel access doors and equipment hatches between the containment's upper and lower compartments shall be OPERABLE and closed. A.2

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Add proposed Condition A Note — A.3

one or more

ACTION A

ACTION C

With a personnel access door or equipment hatch inoperable or open except for personnel transit entry and T_{avg} > 200°F, restore the door or hatch to OPERABLE status or to its closed position (as applicable) within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

LCO 3.6.13 Note

SURVEILLANCE REQUIREMENTS

SR 3.6.13.1, SR 3.6.13.3

4.6.5.5.1 The personnel access doors and equipment hatches between the containment's upper and lower compartments shall be determined closed by a visual inspection prior to increasing the Reactor Coolant System T_{avg} above 200°F and after each personnel transit entry when the Reactor Coolant System T_{avg} is above 200°F.

SR 3.6.13.2

4.6.5.5.2 The personnel access doors and equipment hatches between the containment's upper and lower compartments shall be determined OPERABLE by visually inspecting the seals and sealing surfaces of these penetrations and verifying no detrimental misalignments, cracks or defects in the sealing surfaces, or apparent deterioration of the seal material:

a. Prior to final closure of the penetration each time it has been opened, and

b. At least once per 10 years for penetrations containing seals fabricated from resilient materials.

D. C. COOK - UNIT 2 3/4 6-43

ITS 3.6.13

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

DIVIDER BARRIER SEAL

LIMITING CONDITION FOR OPERATION

LCO 3.6.13 — 3.6.5.9 The divider barrier seal shall be OPERABLE. A.2

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION: Add proposed ACTIONS B and C A.4

ACTIONS B and C — ~~With the divider barrier seal inoperable, restore the seal to OPERABLE status prior to increasing the Reactor Coolant System temperature above 200°F.~~

SURVEILLANCE REQUIREMENTS

4.6.5.9 The divider barrier seal shall be determined OPERABLE at least once per ~~18~~ 24 months ~~during shutdown~~ by: L.1 L.2

SR 3.6.13.4 — a. Removing two divider barrier seal test coupons and verifying that the physical properties of the test coupons are within the acceptable range of values shown in Table 3.6-2.

SR 3.6.13.5 — b. Visually inspecting at least 95 percent of the seal's entire length and:

1. Verifying that the seal and seal mounting bolts are properly installed, and

2. Verifying that the seal material shows no visual evidence of deterioration due to holes, ruptures, chemical attack, abrasion, radiation damage, or changes in physical appearances.

A.1

ITS

SR 3.6.13.4

TABLE 3.6-2

DIVIDER BARRIER SEAL
ACCEPTABLE PHYSICAL PROPERTIES

Material	Tensile Strength	Elongation
~~Uniroyal 3807 or Equal*~~	120 psi	100%

LA.1

~~*Equal defined as meeting at least the requirements discussed in Question 5.98 of the plant's FSAR~~

LA.1

DISCUSSION OF CHANGES
ITS 3.6.13, DIVIDER BARRIER INTEGRITY

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 CTS 3.6.5.5 requires the personnel access doors and equipment hatches between the containment's upper and lower compartments to be OPERABLE and closed. CTS 3.6.5.9 requires the divider barrier seal to be OPERABLE. ITS LCO 3.6.13 requires the divider barrier integrity to be maintained. This changes the CTS by combining the divider barrier requirements of CTS 3.6.5.5 and CTS 3.6.5.9 into one LCO statement.

The purpose of CTS 3/4.6.5.5 and CTS 3/4.6.5.9 is to provide requirements pertaining to containment divider integrity. This change is acceptable because moving these requirements to one LCO, ITS 3.6.13, centralizes the requirements. In addition, the requirement in CTS 3.6.5.5 for the personnel access doors and equipment hatches between the containment's upper and lower compartments to be closed is covered by CTS 4.6.5.5.1 (ITS SR 3.6.13.1), thus it is part of maintaining divider barrier integrity. This change is designated as administrative because it does not result in technical changes to the CTS.

A.3 CTS 3.6.5.5 Action provides the actions to take when a personnel access door or equipment hatch is inoperable. ITS 3.6.13 ACTION A provides an action for one or more personnel access doors or equipment hatches open or inoperable. In addition, ITS 3.6.13 Condition A includes a Note that allows separate Condition entry for each personnel access door or equipment hatch. This modifies the CTS by providing a specific allowance to enter the Action for each inoperable personnel access door or equipment hatch.

This change is acceptable because it clearly states the current requirement. The CTS considers each personnel access door or equipment hatch to be separate and independent from the others. This change is designated as administrative because it does not result in technical changes to the CTS.

A.4 CTS 3.6.5.9 Action does not state what action to take if the divider barrier seal is inoperable while in MODE 1, 2, 3, or 4; it only includes a requirement that the divider barrier seal be restored to OPERABLE status prior to increasing Reactor Coolant System temperature above 200°F (i.e., MODE 4). Thus, entry into CTS 3.0.3 is required if CTS 3.6.5.9 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 MODE 3 within 7 hours and MODE 5 within 37 hours. ITS 3.6.13 ACTION B requires that if the divider barrier seal is inoperable, it must be restored to OPERABLE status within 1 hour. ITS 3.6.13 ACTION C requires that if the Required Action and associated Completion Time are not met (i.e., the divider barrier seal is not restored to OPERABLE status in 1 hour), the unit must be in

Attachment 1, Volume 11, Rev. 0, Page 378 of 494

DISCUSSION OF CHANGES
ITS 3.6.13, DIVIDER BARRIER INTEGRITY

MODE 3 within 6 hours and MODE 5 within 36 hours. This changes the CTS by stating the ACTIONS within the Specification rather than deferring to CTS 3.0.3. In addition, it deletes the Action to restore the limits prior to entering MODE 4.

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 3.6.5.9 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 3.6.13 adopt ISTS structure for placing the unit outside the MODE of Applicability without changing the time specified to enter MODE 3 and MODE 5. In addition, deletion of the current Action of CTS 3.6.5.9 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 3.6.13. 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

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS Table 3.6-2 specifies the divider seal acceptable physical properties. The table includes the tensile strength and elongation property as well as the material type. The material must be Uniroyal 3807 or equal, defined as meeting at least the requirements discussed in Question 5.98 of the Plant's FSAR. ITS SR 3.6.13.4 only includes the tensile strength and elongation property requirements. This changes the CTS by moving the material type to the UFSAR.

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 still retains the requirement to test for tensile strength and elongation. 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 or 10 CFR 50.71(e), which ensures changes are properly evaluated. 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.

Attachment 1, Volume 11, Rev. 0, Page 379 of 494

DISCUSSION OF CHANGES
ITS 3.6.13, DIVIDER BARRIER INTEGRITY

LESS RESTRICTIVE CHANGES

L.1 *(Category 10 – 18 to 24 Month Surveillance Frequency Change, Non-Channel Calibration Type)* CTS 4.6.5.9 requires verification that each divider barrier seal is OPERABLE every 18 months during shutdown. CTS 4.6.5.9.a requires removal of two divider barrier seal test coupons and verifying that the physical properties of the test coupons are within the acceptable range. CTS 4.6.5.9.b requires a visual inspection of at least 95% of the seal's entire length, verification that the seal and seal mounting bolts are properly installed, and verification that the seal material shows no visual evidence of deterioration. ITS SR 3.6.13.4 and SR 3.6.13.5 require the same testing every 24 months. This changes the CTS by extending the Frequency of the Surveillance from 18 months (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2). The change to the requirement to perform the Surveiilances during shutdown is discussed in DOC L.2.

The purpose of CTS 4.6.5.9 is to ensure the divider barrier seals are OPERABLE. This change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have shown that any failures found during surveillance testing either involved situations in which the safety function was not impaired or was the result of an event-driven activity. Therefore there were no time-based failure mechanisms found. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for the divider barrier seal is acceptable because there are not any time-based failure mechanisms that would be adversely affected by an increase in the surveillance interval to 24 months (30 months maximum). Based on the inherent system and component reliability, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.2 *(Category 12 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.6.5.9 requires verification that each divider barrier seal is OPERABLE every 18 months during shutdown. CTS 4.6.5.9.a requires the removal of two divider barrier seal test coupons and verifying that the physical properties of the test coupons are within the acceptable range. CTS 4.6.5.9.b requires a visual inspection of at least 95% of the seal's entire length, verification that the seal and seal mounting bolts are properly installed, and verification that the seal material shows no visual evidence of deterioration. ITS SR 3.6.13.4 and SR 3.6.13.5 require the same testing every 24 months, with no restriction as to when (i.e., during shutdown) the test can be performed. This changes the CTS

DISCUSSION OF CHANGES
ITS 3.6.13, DIVIDER BARRIER INTEGRITY

by deleting the requirement to perform the Surveillances during shutdown. The change to the Frequency of the Surveillance is discussed in DOC L.1.

The purpose of CTS 4.6.5.9 is to ensure the divider barrier seals are OPERABLE. 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. Portions of the divider barrier seal 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 no 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.

Attachment 1, Volume 11, Rev. 0, Page 381 of 494

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

Divider Barrier Integrity ~~(Ice Condenser)~~ 1
3.6.~~17~~ 13

3.6 CONTAINMENT SYSTEMS

3.6.~~17~~ 13 Divider Barrier Integrity ~~(Ice Condenser)~~ 1

3.6.5.5, 3.6.5.9

LCO 3.6.~~17~~ Divider barrier integrity shall be maintained.

INSERT 1 2

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. - NOTE - ~~For this action,~~ separate Condition entry is allowed for each personnel access door or equipment hatch. One or more personnel access doors or equipment hatches open or inoperable~~, other than for personnel transit entry~~.	A.1 Restore personnel access doors and equipment hatches to OPERABLE status and closed positions.	1 hour
B. Divider barrier seal inoperable.	B.1 Restore seal to OPERABLE status.	1 hour
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

3.6.5.5 Action 3 2

3.6.5.9 Action

3.6.5.5 Action, 3.6.5.9 Action

WOG STS 3.6.17 - 1 Rev. 2, 04/30/01

2

INSERT 1

-NOTE-

The personnel access doors may be opened intermittently under administrative control for personnel transit.

CTS

Divider Barrier Integrity (Ice Condenser) 1
3.6.17 13

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE		FREQUENCY	
4.6.5.5.1	SR 3.6.17.1 13	Verify, by visual inspection, all personnel access doors and equipment hatches between upper and lower containment compartments are closed.	Prior to entering MODE 4 from MODE 5	1
4.6.5.5.2	SR 3.6.17.2 13	Verify, by visual inspection, that the seals and sealing surfaces of each personnel access door and equipment hatch have: a. No detrimental misalignments, b. No cracks or defects in the sealing surfaces, and c. No apparent deterioration of the seal material.	Prior to final closure after each opening AND - NOTE - Only required for seals made of resilient materials 10 years	1
4.6.5.5.1	SR 3.6.17.3 13	Verify, by visual inspection, each personnel access door or equipment hatch that has been opened for personnel transit entry is closed.	After each opening	1
4.6.5.9.a, Table 3.6-2	SR 3.6.17.4 13	Remove two divider barrier seal test coupons and verify: a. Both test coupons' tensile strength is ≥ [120] psi and [b. Both test coupons' elongation is ≥ [100]%.] 13	~~[18]~~ 24 months	4, 1
4.6.5.9.b	SR 3.6.17.5 13	Visually inspect ≥ [95]% of the divider barrier seal length, and verify: a. Seal and seal mounting bolts are properly installed and b. Seal material shows no evidence of deterioration due to holes, ruptures, chemical attack, abrasion, radiation damage, or changes in physical appearance.	~~[18]~~ 24 months	4

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.13, DIVIDER BARRIER INTEGRITY

1. The headings for ISTS 3.6.17 include the parenthetical expression (Ice Condenser). This identifying information is not included in the CNP 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, many Containment Specifications in the NUREG are not included in the CNP ITS due to design differences. Therefore, ISTS 3.6.17 is renumbered as ITS 3.6.13.

2. ISTS 3.6.17 Condition A covers one or more personnel access doors or equipment hatches open or inoperable, other than for personnel transit entry. There is no ACTION in ISTS 3.6.17 for when a door or hatch is open for personnel transit entry; therefore LCO 3.0.3 is required to be entered if this occurs. This is not the intent of the Specification. Therefore, a Note has been added to the LCO to identify that the personnel access doors may be opened intermittently under administrative control for personnel transit. In addition, the phrase "other than for personnel transit entry" has been deleted from Condition A, since it is not needed with the addition of the Note.

3. Changes have been made to be consistent with other similar Notes in the Specifications.

4. The brackets are removed and the proper plant specific information/value is provided.

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

B 3.6 CONTAINMENT SYSTEMS

B 3.6.17 13 Divider Barrier Integrity (Ice Condenser) (1)

BASES

INSERT 1

BACKGROUND

The divider barrier consists of the operating deck and associated seals, personnel access doors, and equipment hatches that separate the upper and lower containment compartments. Divider barrier integrity is necessary to minimize bypassing of the ice condenser by the hot steam and air mixture released into the lower compartment during a Design Basis Accident (DBA). This ensures that most of the gases pass through the ice bed, which condenses the steam and limits pressure and temperature during the accident transient. Limiting the pressure and temperature reduces the release of fission product radioactivity from containment to the environment in the event of a DBA. (2) (5)

INSERT 2

In the event of a DBA, the ice condenser inlet doors (located below the operating deck) open due to the pressure rise in the lower compartment. This allows air and steam to flow from the lower compartment into the ice condenser. The resulting pressure increase within the ice condenser causes the intermediate deck doors and the door panels at the top of the condenser to open, which allows the air to flow out of the ice condenser into the upper compartment. The ice condenses the steam as it enters, thus limiting the pressure and temperature buildup in containment. The divider barrier separates the upper and lower compartments and ensures that the steam is directed into the ice condenser. The ice, together with the containment spray, is adequate to absorb the initial blowdown of steam and water from a DBA as well as the additional heat loads that would enter containment over several hours following the initial blowdown. The additional heat loads would come from the residual heat in the reactor core, the hot piping and components, and the secondary system, including the steam generators. During the post blowdown period, the Air Return System (ARS) returns upper compartment air through the divider barrier to the lower compartment. This serves to equalize pressures in containment and to continue circulating heated air and steam from the lower compartment through the ice condenser, where the heat is removed by the remaining ice. (2)

Containment Air Recirculation / Hydrogen Skimmer (CEQ) System

Divider barrier integrity ensures that the high energy fluids released during a DBA would be directed through the ice condenser and that the ice condenser would function as designed if called upon to act as a passive heat sink following a DBA.

2

INSERT 1

the walls of the ice compartment, the operating deck, the compartments enclosing the upper portion of the steam generators and pressurizer, the bulkhead separating the reactor cavity from the refueling canal, the walls and floors of the east and west CEQ fan room area, and portions of the walls of the refueling canal. The operating deck includes hatches above the reactor coolant pumps. Other portions of the divider barrier are penetrated by hatches for general access and materials handling. The divider barrier

2

INSERT 2

A flexible barrier seal is located between the ice condenser compartment and the containment cylinder wall. This barrier is also located between the containment liner and other structural elements that are part of the divider barrier.

BASES

APPLICABLE SAFETY ANALYSES

Divider barrier integrity ensures the functioning of the ice condenser to the limiting containment pressure and temperature 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 steam line break (SLB). The LOCA and SLB are analyzed using computer codes designed to predict the resultant containment pressure and temperature transients. DBAs are assumed not to occur simultaneously or consecutively.

Although the ice condenser is a passive system that requires no electrical power to perform its function, the Containment Spray System and the ARS also function to assist the ice bed in limiting pressures and temperatures. Therefore, the postulated DBAs are analyzed, with respect to containment Engineered Safety Feature (ESF) systems, assuming the loss of one ESF bus, which is the worst case single active failure and results in the inoperability of one train in both the Containment Spray System and the ARS. 2 2

CEQ System CEQ System

The limiting DBA analyses (Ref. 1) show that the maximum peak containment pressure results from the LOCA analysis and is calculated to be less than the containment design pressure. The maximum peak containment temperature results from the SLB analysis and is discussed in the Bases for LCO 3.6.50, "Containment Air Temperature." 1

In addition to calculating the overall peak containment pressures, the DBA analyses include calculation of the transient differential pressures that occur across subcompartment walls during the initial blowdown phase of the accident transient. The internal containment walls and structures are designed to withstand these local transient pressure differentials for the limiting DBAs.

Integrity

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

LCO

This LCO establishes the minimum equipment requirements to ensure that the divider barrier performs its safety function of ensuring that bypass leakage, in the event of a DBA, does not exceed the bypass leakage assumed in the accident analysis. Included are the requirements that the personnel access doors and equipment hatches in the divider barrier are OPERABLE and closed and that the divider barrier seal is properly installed and has not degraded with time. ~~An exception to the requirement that the doors be closed is made to allow personnel transit entry through the divider barrier. The basis of this exception is the assumption that, for personnel transit, the time during which a door is open will be short (i.e., shorter than the Completion Time of 1 hour for~~ 1

INSERT 3

1

INSERT 3

As Noted, the personnel access doors between containment upper and lower compartments may be opened intermittently under administrative control for personnel transit. Transit through the divider barrier may be required to perform Technical Specifications (TS) Surveillances and Required Actions, as well as other activities on equipment inside the 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-related activities) if the containment was entered. The required administrative controls consist of either stationing a dedicated individual at the applicable door to assure closure of the door or requiring the individual who accesses the door to ensure closure of the door. This allowance is acceptable since the door is only opened for a brief time interval.

BASES

LCO (continued)

(Condition A). The divider barrier functions with the ice condenser to limit the pressure and temperature that could be expected following a DBA. (1)

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause an increase in containment pressure and temperature requiring the integrity of the divider barrier. Therefore, the LCO is applicable in MODES 1, 2, 3, and 4.

The probability and consequences of these events in MODES 5 and 6 are low due to the pressure and temperature limitations of these MODES. As such, divider barrier integrity is not required in these MODES.

ACTIONS

A.1

If ~~one or more~~ (a) personnel access door~~s~~ or equipment hatch~~es are~~ (is) (3) inoperable or open, ~~except for personnel transit entry,~~ (1) 1 hour is allowed to restore the door~~(s) and~~ (or) equipment hatch~~es~~ to OPERABLE status and ~~the closed position~~. (3) The 1 hour Completion Time is consistent with LCO 3.6.1, "Containment," which requires that containment be restored to OPERABLE status within 1 hour.

Condition A has been modified by a Note to provide clarification that ~~for this LCO~~ separate Condition entry is allowed for each personnel access door or equipment hatch. (1)

B.1

If the divider barrier seal is inoperable, 1 hour is allowed to restore the seal to OPERABLE status. The 1 hour Completion Time is consistent with LCO 3.6.1, which requires that containment be restored to OPERABLE status within 1 hour.

C.1 and C.2 (2)

If divider barrier integrity cannot be restored to OPERABLE status within the required Completion Time, the ~~plant~~ (unit) 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~~ (unit) systems. (2)

BASES 1

SURVEILLANCE REQUIREMENTS

SR 3.6.17.1 13

Verification, by visual inspection, that all personnel access doors and equipment hatches between the upper and lower containment compartments are closed provides assurance that divider barrier integrity is maintained prior to the reactor being taken from MODE 5 to MODE 4. This SR is necessary because many of the doors and hatches may have been opened for maintenance during the shutdown. 1

SR 3.6.17.2 13

Verification, by visual inspection, that the personnel access door and equipment hatch seals, sealing surfaces, and alignments are acceptable provides assurance that divider barrier integrity is maintained. This inspection cannot be made when the door or hatch is closed. Therefore, 13 SR 3.6.17.2 is required for each door or hatch that has been opened, prior to the final closure. Some doors and hatches may not be opened for long periods of time. Those that use resilient materials in the seals must be opened and inspected at least once every 10 years to provide assurance that the seal material has not aged to the point of degraded performance. The Frequency of 10 years is based on the known resiliency of the materials used for seals, the fact that the openings have not been opened (to cause wear), and operating experience that confirms that the seals inspected at this Frequency have been found to be acceptable. 1

SR 3.6.17.3 13

Verification, by visual inspection, after each opening of a personnel access door or equipment hatch that it has been closed makes the operator aware of the importance of closing it and thereby provides additional assurance that divider barrier integrity is maintained while in applicable MODES. 1

SR 3.6.17.4 13

Conducting periodic physical property tests on divider barrier seal test coupons provides assurance that the seal material has not degraded in the containment environment, including the effects of irradiation with the reactor at power. The required tests include a tensile strength test, and a test for elongation. The Frequency of 18 months was developed considering such factors as the known resiliency of the seal material used, the inaccessibility of the seals and absence of traffic in their vicinity, and the unit conditions needed to perform the SR. Operating experience has shown that these components usually pass the Surveillance when 4 24

 1

BASES

SURVEILLANCE REQUIREMENTS (continued)

performed at the 18 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. 4

SR 3.6.17.5 13 1

Visual inspection of the seal around the perimeter provides assurance that the seal is properly secured in place. The Frequency of 18 24 months was developed considering such factors as the inaccessibility of the seals and absence of traffic in their vicinity, the strength of the bolts and mechanisms used to secure the seal, and the unit conditions needed to perform the SR. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. 4

REFERENCES 1. U FSAR, Section 6.2 14.3.4.1.3.1.3. 2 4

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.13 BASES, DIVIDER BARRIER INTEGRITY

1. Changes have been made to be consistent with changes made to the Specification.

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 the Specification. Specifically, the words were changed since separate Condition entry is allowed for each inoperable door and hatch.

4. The brackets are removed and the proper plant specific information/value is provided.

Attachment 1, Volume 11, Rev. 0, Page 395 of 494

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.13, DIVIDER BARRIER INTEGRITY

There are no specific NSHC discussions for this Specification.

ATTACHMENT 14

ITS 3.6.14, Containment Recirculation Drains

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

ITS 3.6.14

A.1

ITS

CONTAINMENT SYSTEMS

FLOOR DRAINS

LIMITING CONDITION FOR OPERATION

LCO 3.6.14

3.6.5.7 The ice condenser floor drains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTIONS A and C

~~With the ice condenser floor drain inoperable, restore the floor drain to OPERABLE status prior to increasing the Reactor Coolant System temperature above 200°F.~~

Add proposed ACTIONS A and C

A.2

SURVEILLANCE REQUIREMENTS

L.1

SR 3.6.14.3

4.6.5.7 Each ice condenser floor drain shall be demonstrated OPERABLE at least once per 18 months ~~during shutdown~~ by:

a. Verifying that valve gate opening is not impaired by ice, frost or debris,

b. Verifying that the valve seat is not damaged,

c. Verifying that the valve gate opens when a force of ≤ 100 lbs is applied, and

LA.1

d. Verifying that the ~~12 inch~~ drain line from the ice condenser floor to the containment lower compartment is unrestricted.

Attachment 1, Volume 11, Rev. 0, Page 400 of 494

ITS 3.6.14

A.1

ITS

CONTAINMENT SYSTEMS

REFUELING CANAL DRAINS

LIMITING CONDITION FOR OPERATION

Two L.2

LCO 3.6.14

3.6.5.8 ~~The~~ refueling canal drains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTIONS B and C

~~With a refueling canal drain inoperable, restore the drain to OPERABLE status prior to increasing the Reactor Coolant System temperature above 200°F.~~

Add proposed ACTIONS B and C A.2

SURVEILLANCE REQUIREMENTS

required L.2

SR 3.6.14.2

4.6.5.8 Each required refueling canal drain shall be demonstrated OPERABLE prior to increasing the Reactor Coolant System temperature above 200°F after each partial or complete filling of the canal with water by verifying that the blind flange is removed from the drain line and that the drain is not obstructed by debris.

Add SR 3.6.14.1 M.1

Attachment 1, Volume 11, Rev. 0, Page 401 of 494

A.1

ITS

CONTAINMENT SYSTEMS

FLOOR DRAINS

LIMITING CONDITION FOR OPERATION

LCO 3.6.14

3.6.5.7 The ice condenser floor drains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTIONS A and C

~~With the ice condenser floor drain inoperable, restore the floor drain to OPERABLE status prior to increasing the Reactor Coolant System temperature above 200°F.~~

Add proposed ACTIONS A and C

A.2

SURVEILLANCE REQUIREMENTS

L.1

SR 3.6.14.3

4.6.5.7 Each ice condenser floor drain shall be demonstrated OPERABLE at least once per 18 months ~~during shutdown~~ by:

a. Verifying that valve gate opening is not impaired by ice, frost or debris.

b. Verifying that the valve seat is not damaged.

c. Verifying that the valve gate opens when a force of ≤ 100 lbs is applied.

d. Verifying that the drain line from the ice condenser floor to the containment lower compartment is unrestricted.

Attachment 1, Volume 11, Rev. 0, Page 402 of 494

ITS 3.6.14

A.1

ITS

CONTAINMENT SYSTEMS

REFUELING CANAL DRAINS

LIMITING CONDITION FOR OPERATION

Two — L.2

LCO 3.6.14 — 3.6.5.8 ~~The~~ refueling canal drains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTIONS B and C — ~~With a refueling canal drain inoperable, restore the drain to OPERABLE status prior to increasing the Reactor Coolant System temperature above 200°F.~~

Add proposed ACTIONS B and C — A.2

SURVEILLANCE REQUIREMENTS

required — L.2

SR 3.6.14.2 — 4.6.5.8 Each refueling canal drain shall be demonstrated OPERABLE prior to increasing the Reactor Coolant System temperature above 200°F after each partial or complete filling of the canal with water by verifying that the blind flange is removed from the drain line and that the drain is not obstructed by debris.

Add SR 3.6.14.1 — M.1

DISCUSSION OF CHANGES
ITS 3.6.14, CONTAINMENT RECIRCULATION DRAINS

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 The CTS 3.6.5.7 Action does not state what action to take if the ice condenser floor drains are inoperable while in MODE 1, 2, 3, or 4; it only includes a requirement that the ice condenser floor drains be restored to OPERABLE status prior to increasing Reactor Coolant System temperature above 200°F (i.e., MODE 4). The CTS 3.6.5.8 Action does not state what action to take if the refueling canal drains are inoperable while in MODE 1, 2, 3, or 4; it only includes a requirement that the refueling canal drains be restored to OPERABLE status prior to increasing Reactor Coolant System temperature above 200°F (i.e., MODE 4). Thus, entry into CTS 3.0.3 is required if CTS 3.6.5.7 or CTS 3.6.5.8 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 MODE 3 within 7 hours and MODE 5 within 37 hours. ITS 3.6.14 ACTION A requires that if one ice condenser floor drain is inoperable, it must be restored to OPERABLE status within 1 hour. ITS 3.6.14 ACTION B requires that if one required refueling canal drain is inoperable, it must be restored to OPERABLE status within 1 hour. ITS 3.6.14 ACTION C requires that if the Required Action and associated Completion Time are not met (i.e., the ice condenser or refueling canal drain 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. This changes the CTS by stating the ACTIONS within the Specification rather than deferring to CTS 3.0.3. In addition, it deletes the Actions to restore the limits prior to entering MODE 4.

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 3.6.5.7 and CTS 3.6.5.8 are 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 3.6.14 adopt ISTS structure for placing the unit outside the MODE of Applicability without changing the time specified to enter MODE 3 and MODE 5. In addition, deletion of the current Actions of CTS 3.6.5.7 and CTS 3.6.5.8 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 3.6.14. This change is designated as administrative because it does not result in technical changes to the CTS.

Attachment 1, Volume 11, Rev. 0, Page 404 of 494

DISCUSSION OF CHANGES
ITS 3.6.14, CONTAINMENT RECIRCULATION DRAINS

MORE RESTRICTIVE CHANGES

M.1 CTS 4.6.5.8 requires the refueling canal drain be demonstrated OPERABLE prior to increasing the Reactor Coolant System temperature above 200°F after each partial or complete filling of the canal with water. ITS 3.6.14.1 adds a new Surveillance to verify by visual inspection, every 92 days and prior to entering MODE 4 from MODE 5 after each partial or complete fill of the canal, that there is no debris present in the upper compartment or refueling canal that could obstruct the required refueling canal drains. This changes the CTS by adding the additional Surveillance verification.

The purpose of the additional Surveillance of ITS SR 3.6.14.1 is to provide additional assurance the required refueling canal drains are OPERABLE. Prior to and during operation, the debris could be present in the upper containment or refueling canal that eventually may obstruct the refueling canal drain. This change is acceptable because it provides additional assurance that the refueling canal drain will be capable of performing its function. This change is designated as more restrictive because it adds a Surveillance verification to the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* (Unit 1 only) CTS 4.6.5.7.d requires the verification that the 12 inch drain line from the ice condenser floor to the containment lower compartment is unrestricted. ITS SR 3.6.14.3 requires the verification that the drain line from the ice condenser floor to the lower compartment is unrestricted. This changes the Unit 1 CTS by moving the reference to the pipe size (12 inches) to the UFSAR.

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 still retains the requirement to verify the drain line from the ice condenser floor to the containment lower compartment is unrestricted. 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 or 10 CFR 50.71(e), which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Unit 1 Technical Specifications.

DISCUSSION OF CHANGES
ITS 3.6.14, CONTAINMENT RECIRCULATION DRAINS

LESS RESTRICTIVE CHANGES

L.1 *(Category 12 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.6.5.7 requires verification that each ice condenser floor drain is OPERABLE every 18 months during shutdown by verifying that valve gate opening is not impaired by ice, frost or debris, verifying that the valve seat is not damaged, verifying that the valve gate opens when a force of $\leq$ 100 lbs is applied, and verifying that the drain line from the ice condenser floor to the containment lower compartment is unrestricted. ITS SR 3.6.14.3 requires the same testing every 18 months, 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 4.6.5.7 is to ensure the ice condenser floor drains are OPERABLE. 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 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 no 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.

L.2 CTS 3.6.5.8 states that "The refueling canal drains shall be OPERABLE." In this case, since there are three installed refueling canal drains, all three must be OPERABLE. ITS LCO 3.6.14 states "two refueling canal drains shall be OPERABLE." This changes the CTS by only requiring two of the three refueling canal drains to be OPERABLE. In addition, due to this change, the word "required" has been added to the Actions and the Surveillance Requirements since not all installed refueling drains are required to be OPERABLE.

The purpose of CTS 3.6.5.8 is to ensure the refueling canal drains are OPERABLE so that they can meet their design function. The design function of the refueling canal drains is to provide a main return path to the lower containment compartment for Containment Spray System water sprayed into the upper containment compartment. This change is acceptable because any two of the three refueling canal drains provide a sufficient flow rate of water to meet the analysis assumptions for ensuring sufficient containment recirculation sump water inventory following any accident that requires Emergency Core Cooling System swapover from the refueling water storage tank to the containment recirculation sump. Calculations performed conclude that three refueling canal drains provide a flow capacity of 2.1 times the flow rate of 5002 gpm assumed in the containment recirculation sump water inventory analysis. The most limiting combination of two refueling canal drains were calculated to provide a flow capacity of 6750 gpm, or approximately 1.35 times the analytically assumed flow rate of 5002 gpm. Therefore, the analysis of containment recirculation sump water inventory is not affected by the proposed reduction of OPERABLE refueling canal drains from three to two. This change is designated as less

Attachment 1, Volume 11, Rev. 0, Page 406 of 494

DISCUSSION OF CHANGES
ITS 3.6.14, CONTAINMENT RECIRCULATION DRAINS

restrictive because less stringent LCO 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

3.6.18 14 Containment Recirculation Drains (Ice Condenser) 1

3.6.5.7, 3.6.5.8 LCO 3.6.18 The ice condenser floor drains and the two refueling canal drains shall be OPERABLE. 4

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

ACTIONS

CTS	CONDITION	REQUIRED ACTION	COMPLETION TIME	
3.6.5.7 Action	A. One ice condenser floor drain inoperable.	A.1 Restore ice condenser floor drain to OPERABLE status.	1 hour	4
3.6.5.8 Action	B. One required refueling canal drain inoperable.	B.1 Restore required refueling canal drain to OPERABLE status.	1 hour	
3.6.5.7 Action, 3.6.5.8 Action	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

INSERT 1 5

SURVEILLANCE REQUIREMENTS

SURVEILLANCE REQUIREMENTS	FREQUENCY
4.6.5.8 SR 3.6.18.1 Verify, by visual inspection, that: a. Each refueling canal drain plug is removed, b. Each refueling canal drain is not obstructed by debris, and c. No debris is present in the upper compartment or refueling canal that could obstruct the refueling canal drain.	92 days AND Prior to entering MODE 4 from MODE 5 after each partial or complete fill of the canal
4.6.5.7 SR 3.6.18.2 Verify for each ice condenser floor drain that the: a. Valve opening is not impaired by ice, frost, or debris, b. Valve seat shows no evidence of damage, c. Valve opening force is ≤ 66 lb, and d. Drain line from the ice condenser floor to the lower compartment is unrestricted.	18 months

CTS

5 **INSERT 1**

SR 3.6.14.1	Verify, by visual inspection, that no debris is present in the upper containment or refueling canal that could obstruct the required refueling canal drains.	92 days AND Prior to entering MODE 4 from MODE 5 after each partial or complete fill of the canal

DOC M.1

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.14, CONTAINMENT RECIRCULATION DRAINS

1. The headings for ISTS 3.6.18 include the parenthetical expression (Ice Condenser). This identifying information is not included in the CNP 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, many Containment Specifications in the NUREG are not included in the CNP ITS due to design differences. Therefore, ISTS 3.6.18 is renumbered as ITS 3.6.14.

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 brackets are removed and the proper plant specific information/value is provided.

4. The number of required refueling canal drains has been changed from all (which is three in the CNP design) to two. Any two of the three installed refueling canal drains provide sufficient flow capacity to meet the licensing basis analysis assumptions. In addition, since more refueling canal drains are installed than are required by the LCO, the word "required" has been added to the ACTIONS and Surveillance Requirements, consistent with the format of the ITS.

5. ISTS SR 3.6.18.1 requires that each refueling canal drain be verified unplugged and free of debris every 92 days and prior to transition to MODE 4 from MODE 5 after each partial or complete fill of the refueling canal. The SR also requires verification, at the same Frequencies, that no debris is present in the upper containment or refueling canal that could obstruct the refueling canal drains. ITS SR 3.6.14.1 will require verification that there is no debris present in the upper containment or refueling canal that could obstruct the required refueling canal drains every 92 days and prior to transition to MODE 4 from MODE 5 after each partial or complete fill of the canal. ITS SR 3.6.14.2 will require that each required refueling canal drain blind flange is removed and the drain is not obstructed by debris prior to transition to MODE 4 from MODE 5 after each partial or complete fill of the canal. The 92 day Frequency has not been included in the ITS for the verification that the required refueling canal drains are not plugged and are free of debris. This is acceptable since the refueling canal drains are difficult to access during power operation because of their location in the bottom of the lower refueling canal, and performance of this verification would result in significant dose with little added benefit. This assessment is based on the following factors:

   a. The most likely time for debris to be introduced into containment is in MODES 5 and 6 or while defueled during outage activities. The Surveillance to verify the refueling canal drains not plugged and free of debris and the Surveillance to verify the upper containment and refueling canal are free of debris will be performed after these activities prior to transition to MODE 4, as required by the ITS; and

   b. After entry into MODE 4 and during operation in MODES 1 through 4, the new requirement to verify the upper containment and refueling canal are free of debris will be performed every 92 days.

Attachment 1, Volume 11, Rev. 0, Page 412 of 494

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.14, CONTAINMENT RECIRCULATION DRAINS

Furthermore, the CTS does not require a 92 day Frequency for verification of refueling canal drains; only the transitional Frequency is required. Thus, the deletion of the 92 day Frequency is consistent with the current licensing basis.

Attachment 1, Volume 11, Rev. 0, Page 413 of 494

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

B 3.6 CONTAINMENT SYSTEMS 1

B 3.6.~~18~~ 14 Containment Recirculation Drains (Ice Condenser)

BASES

BACKGROUND

The containment recirculation drains consist of the ice condenser drains and the refueling canal drains. The ice condenser is partitioned into 24 bays, each having a pair of inlet doors that open from the bottom plenum to allow the hot steam-air mixture from a Design Basis Accident (DBA) to enter the ice condenser. Twenty -one of the 24 bays have an ice condenser floor drain at the bottom to drain the melted ice into the lower compartment (in the ~~4~~ bays that do not have drains, the water drains through the floor drains in the adjacent bays). Each drain leads to a drain pipe that drops down several feet, then makes one or more 90° bends and exits into the lower compartment. A check (flapper) valve at the end of each pipe keeps warm air from entering during normal operation, but when the water exerts pressure, it opens to allow the water to spill into the lower compartment. This prevents water from backing up and interfering with the ice condenser inlet doors. The water delivered to the lower containment serves to cool the atmosphere as it falls through to the floor and provides a source of borated water at the containment sump for long term use by the Emergency Core Cooling System (ECCS) and the Containment Spray System during the recirculation mode of operation. 2 3 2

The ~~two~~ three ~~refueling~~ canal blind flanges drains ~~are at~~ low points in the refueling canal. During a refueling, ~~plugs~~ are installed in the drains and the canal is flooded to facilitate the refueling process. The water acts to shield and cool the spent fuel as it is transferred from the reactor vessel to storage. After refueling, the canal is drained and the ~~plugs~~ blind flanges removed. In the event of a DBA, the refueling canal drains are the main return path to the lower compartment for Containment Spray System water sprayed into the upper compartment. 2 1 1

The ice condenser drains and the refueling canal drains function with the ice bed, the Containment Spray System, and the ECCS to limit the pressure and temperature that could be expected following a DBA.

APPLICABLE SAFETY ANALYSES

The limiting DBAs considered relative to containment temperature and pressure are the loss of coolant accident (LOCA) and the steam line break (SLB). The LOCA and SLB are analyzed using computer codes designed to predict the resultant containment pressure and temperature transients. DBAs are assumed not to occur simultaneously or consecutively. Although the ice condenser is a passive system that requires no electrical power to perform its function, the Containment

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BASES

APPLICABLE SAFETY ANALYSES (continued)

Containment Air Recirculation Hydrogen Skimmer (CEQ) System ②

Spray System and the Air Return System (ARS) also function to assist the ice bed in limiting pressures and temperatures. Therefore, the analysis of the postulated DBAs, with respect to Engineered Safety Feature (ESF) systems, assumes the loss of one ESF bus, which is the worst case single active failure and results in one train of the Containment Spray System and one train of the ARS being rendered inoperable. CEQ System ②

The limiting DBA analyses (Ref. 1) show that the maximum peak containment pressure results from the LOCA analysis and is calculated to be less than the containment design pressure. The maximum peak containment atmosphere temperature results from the SLB analysis and is discussed in the Bases for LCO 3.6.5, "Containment Air Temperature." In addition to calculating the overall peak containment pressures, the DBA analyses include calculation of the transient differential pressures that occur across subcompartment walls during the initial blowdown phase of the accident transient. The internal containment walls and structures are designed to withstand these local transient pressure differentials for the limiting DBAs.

The containment recirculation drains satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii). ②

LCO

This LCO establishes the minimum requirements to ensure that the containment recirculation drains perform their safety functions. The ice condenser floor drain valve disks must be closed to minimize air leakage into and out of the ice condenser during normal operation and must open in the event of a DBA when water begins to drain out. ② The refueling canal drains must have their plugs removed and remain clear to ensure the return of Containment Spray System water to the lower containment in the event of a DBA. The containment recirculation drains function with the ice condenser, ECCS, and Containment Spray System to limit the pressure and temperature that could be expected following a DBA.

Two of the three ④ ①

blind flanges

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause an increase in containment pressure and temperature, which would require the operation of the containment recirculation drains. Therefore, the LCO is applicable in MODES 1, 2, 3, and 4.

The probability and consequences of these events in MODES 5 and 6 are low due to the pressure and temperature limitations of these MODES.

BASES

APPLICABILITY (continued)

As such, the containment recirculation drains are not required to be OPERABLE in these MODES.

ACTIONS

A.1

If one ice condenser floor drain is inoperable, 1 hour is allowed to restore the drain to OPERABLE status. 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 (4)

If one required refueling canal drain is inoperable, 1 hour is allowed to restore the required drain to OPERABLE status. 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, which requires that containment be restored to OPERABLE status in 1 hour. (4)

C.1 and C.2

If the affected drain(s) cannot be restored to OPERABLE status within the required Completion Time, the plant unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant unit 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 unit conditions from full power conditions in an orderly manner and without challenging plant unit systems. (2) (2)

SURVEILLANCE REQUIREMENTS

SR 3.6.18 14.1 and SR 3.6.14.2 (1)

Verifying the OPERABILITY of the required refueling canal drains ensures that they will be able to perform their functions in the event of a DBA. This Surveillance SR 3.6.14.2 confirms that the refueling canal drain plugs blind flanges have been removed and that the drains are clear of any obstructions that could impair their functioning. In addition to debris near the drains, attention must be given to any debris that is located where it could be moved to the drains in the event that the Containment Spray System is in operation and water is flowing to the drains. INSERT 1 SR 3.6.18 14.1 and SR 3.6.14.2 must be performed before entering MODE 4 from MODE 5 after every filling of the canal to ensure (4) (1) (1) (1) (1)

1 **INSERT 1**

This verification is performed by SR 3.6.14.1, which requires verification that there is no debris present in the upper containment or refueling canal that could obstruct the required refueling canal drains.

Attachment 1, Volume 11, Rev. 0, Page 418 of 494

BASES

SURVEILLANCE REQUIREMENTS (continued)

blind flanges (1)

that the plugs have been removed and that no debris that could impair the drains was deposited during the time the canal was filled. The 92 day Frequency was developed considering such factors as the inaccessibility of the drains, the absence of traffic in the vicinity of the drains, and the redundancy of the drains. INSERT 2 (1)

(1)

SR 3.6.18.2 (14) (3) (1)

Verifying the OPERABILITY of the ice condenser floor drains ensures that they will be able to perform their functions in the event of a DBA. Inspecting the drain valve disk ensures that the valve is performing its function of sealing the drain line from warm air leakage into the ice condenser during normal operation, yet will open if melted ice fills the line following a DBA. Verifying that the drain lines are not obstructed ensures their readiness to drain water from the ice condenser. The [18] month Frequency was developed considering such factors as the inaccessibility of the drains during power operation; the design of the ice condenser, which precludes melting and refreezing of the ice; and operating experience that has confirmed that the drains are found to be acceptable when the Surveillance is performed at an [18] month Frequency. Because of high radiation in the vicinity of the drains during power operation, this Surveillance is normally done during a shutdown. (3) (3)

REFERENCES 1. (U)FSAR, Section [6.2]. 14.3.4 (3)

1 **INSERT 2**

In addition, SR 3.6.14.1 must be performed every 92 days.

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.14 BASES, CONTAINMENT RECIRCULATION DRAINS

1. Changes have been made to be consistent with changes made to the ISTS.

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 brackets are removed and the proper plant specific information/value is provided.

4. The Bases have been changed to be consistent with changes made to the Specification.

Attachment 1, Volume 11, Rev. 0, Page 421 of 494

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.14, CONTAINMENT RECIRCULATION DRAINS

10 CFR 50.92 EVALUATION
FOR
LESS RESTRICTIVE CHANGE L.2

CNP is converting to the Improved Technical Specifications (ITS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." The proposed change involves making the Current Technical Specifications (CTS) less restrictive. Below is the description of this less restrictive change and the determination of No Significant Hazards Considerations for conversion to NUREG-1431.

CTS 3.6.5.8 states that "The refueling canal drains shall be OPERABLE." In this case, since there are three installed refueling canal drains, all three must be OPERABLE. ITS LCO 3.6.14 states "two refueling canal drains shall be OPERABLE. This changes the CTS by only requiring two of the three refueling canal drains to be OPERABLE. In addition, due to this change, the word "required" has been added to the Actions and the Surveillance Requirements since not all installed refueling drains are required to be OPERABLE.

The purpose of CTS 3.6.5.8 is to ensure the refueling canal drains are OPERABLE so that they can meet their design function. The design function of the refueling canal drains is to provide a main return path to the lower containment compartment for Containment Spray System water sprayed into the upper containment compartment. This change is acceptable because any two of the three refueling canal drains provide a sufficient flow rate of water to meet the analysis assumptions for ensuring sufficient containment recirculation sump water inventory following any accident that requires Emergency Core Cooling System swapover from the refueling water storage tank to the containment recirculation sump. Calculations performed conclude that three refueling canal drains provide a flow capacity of 2.1 times the flow rate of 5002 gpm assumed in the containment recirculation sump water inventory analysis. The most limiting combination of two refueling canal drains were calculated to provide a flow capacity of 6750 gpm, or approximately 1.35 times the analytically assumed flow rate of 5002 gpm. Therefore, the analysis of containment recirculation sump water inventory is not affected by the proposed reduction of OPERABLE refueling canal drains from three to two. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

Indiana Michigan Power Company (I&M) has evaluated whether or not a significant hazards consideration is involved with these proposed Technical Specification changes by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. **Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?**

   Response: No.

   The proposed change relaxes the requirement for all three of the installed refueling canal drains to be OPERABLE, requiring only two of the three refueling canal drains to be OPERABLE when in MODES 1 through 4. The refueling canal drains are not initiators of any accident previously evaluated. Consequently, the probability of an accident previously evaluated is not significantly increased. Any two of the three installed refueling canal drains provide a sufficient flow path to allow Containment Spray System water sprayed into the upper containment compartment to be returned to the lower containment compartment in accordance with accident analysis assumptions, including margin. In addition, reducing the size of the flow path through the refueling canal drains potentially reduces the peak upper and lower containment compartment pressures following an accident by reducing the amount of steam and air that bypasses the ice condenser. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed change potentially alters the physical configuration of the plant, but not the overall methods governing normal plant operation. Requiring only two of the three refueling canal drains to be OPERABLE when in MODES 1 through 4, and conversely allowing one of the three refueling canal drains to be plugged when in MODES 1 through 4, cannot initiate an accident. The refueling canal drains are passive internal containment components, and do not directly or indirectly interface with the Reactor Coolant System or ECCS, or any other safety-related structure, system, or component except for the refueling canal, during normal plant operation. In MODES 1 through 4, the refueling canal is fully drained, and only serves as a passive barrier between the upper and lower containment compartments. Consequently, the refueling canal drains cannot cause of failure of any of these structures, systems, or components during normal plant operation that could cause an accident. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The margin of safety pertinent to the proposed change includes providing assurance that ECCS, containment cooling and pressure suppression, and Containment Spray System functional requirements will be met following a design basis accident, specifically for loss-of coolant accident (LOCA) or main steam line break (MSLB) events. The refueling canal drains perform a safety-related function following a LOCA or MSLB accident by providing a flow path for Containment Spray System water sprayed into the upper containment compartment to the lower containment compartment. Assurance of minimum required containment recirculation sump water inventory during and following switchover of suction for the ECCS and Containment Spray System pumps from the refueling water storage tank to the containment recirculation sump provides this assurance.

Calculations performed conclude that three refueling canal drains provide a flow capacity of 2.1 times the flow rate assumed in the containment recirculation

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.14, CONTAINMENT RECIRCULATION DRAINS

sump water inventory analysis. The most limiting combination of two refueling canal drains were calculated to provide approximately 1.35 times the analytically assumed flow rate. Therefore, the analysis of containment recirculation sump water inventory is not affected by the proposed reduction of OPERABLE refueling canal drains from three to two, and margin still exists between the calculated and analytically assumed flow rate. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, I&M concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

Attachment 1, Volume 11, Rev. 0, Page 425 of 494

ATTACHMENT 15

Relocated/Deleted Current Technical Specifications (CTS)

CTS 3/4.6.5.2, Ice Bed Temperature Monitoring System

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

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 CONTAINMENT SYSTEMS

ICE BED TEMPERATURE MONITORING SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.5.2 The ice bed temperature monitoring system shall be OPERABLE with at least 2 OPERABLE RTD channels in the ice bed at elevations 652' 2-1/4", 672' 5-1/4" and 696' 2-1/4" for each one third of the ice condenser.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With the ice bed temperature monitoring system inoperable, POWER OPERATION may continue for up to 30 days provided:

1. The ice compartment lower inlet doors, intermediate deck doors, and top deck doors are closed;

2. The last recorded mean ice bed temperature was ≤ 20°F and steady; and

3. The ice condenser cooling system is OPERABLE with at least:

a) 21 OPERABLE air handling units,

b) 2 OPERABLE glycol circulating pumps, and

c) 3 OPERABLE refrigerant units;

R.1

otherwise, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With the ice bed temperature monitoring system inoperable and with the ice condenser cooling system not satisfying the minimum components OPERABILITY requirements of a.3 above, POWER OPERATION may continue for up to 6 days provided the ice compartment lower inlet doors, intermediate deck doors, and top deck doors are closed and the last recorded mean ice bed temperature was ≤ 15°F and steady; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

CTS 3/4.6.5.2

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.6.5.2 The ice bed temperature monitoring system shall be determined OPERABLE by performance of a CHANNEL CHECK at least once per 12 hours.

R.1

D. C. COOK-UNIT 1 3/4 6-29

CONTAINMENT SYSTEMS

ICE BED TEMPERATURE MONITORING SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.5.2 The ice bed temperature monitoring system shall be OPERABLE with at least 2 OPERABLE RTD channels in the ice bed at elevations 652' 2 1/4", 672' 5 1/4" and 696' 2 1/4" for each one third of the ice condenser.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With the ice bed temperature monitoring system inoperable, POWER OPERATION may continue for up to 30 days provided:

1. The ice compartment lower inlet doors, intermediate deck doors, and top deck doors are closed;

2. The last recorded mean ice bed temperature was ≤ 20°F and steady; and

3. The ice condenser cooling system is OPERABLE with at least:

a) 21 OPERABLE air handling units,

b) 2 OPERABLE glycol circulating pumps, and

c) 3 OPERABLE refrigerant units;

otherwise, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With the ice bed temperature monitoring system inoperable and with the ice condenser cooling system not satisfying the minimum components OPERABILITY requirements of a.3 above, POWER OPERATION may continue for up to 6 days provided the ice compartment lower inlet doors, intermediate deck doors, and top deck doors are closed and the last recorded mean ice bed temperature was ≤ 15°F and steady; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

R.1

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.6.5.2 The ice bed temperature monitoring system shall be determined OPERABLE by performance of a CHANNEL CHECK at least once per 12 hours.

R.1

Attachment 1, Volume 11, Rev. 0, Page 432 of 494

DISCUSSION OF CHANGES
CTS 3/4.6.5.2, ICE BED TEMPERATURE MONITORING SYSTEM

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

R.1 CTS 3/4.6.5.2 provides requirements on the Ice Bed Temperature Monitoring System. The Ice Bed Temperature Monitoring System monitors the temperature of the ice bed to ensure that the ice bed temperature does not increase above the required limits undetected. However, the Ice Bed Temperature Monitoring System is not required to ensure the ice bed temperature is maintained within limits. Another Technical Specification (that is being retained) will continue to ensure that temperature is maintained within the required limits. This Specification does not meet the criteria for retention in the ITS; therefore, it will be retained in the Technical Requirements Manual (TRM).

This change is acceptable because CTS 3/4.6.5.4 does not meet the 10 CFR 50.36(c)(2)(ii) criteria for inclusion into the ITS.

10 CFR 50.36(c)(2)(ii) Criteria Evaluation:

1. The Ice Bed Temperature Monitoring System is not installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary. The Ice Bed Temperature Monitoring System Specification does not satisfy criterion 1.

2. The Ice Bed Temperature Monitoring System is not a process variable, design feature, or operating restriction that is an initial condition of a DBA or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The Ice Bed Temperature Monitoring System Specification does not satisfy criterion 2.

3. The Ice Bed Temperature Monitoring System is not a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a DBA or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The Ice Bed Temperature Monitoring System Specification does not satisfy criterion 3.

4. The Ice Bed Temperature Monitoring System is not a structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety. As discussed in Section 4.0 (Appendix A, page A-78) and summarized in Table 1 of WCAP-11618, the Ice Bed Temperature Monitoring System

Attachment 1, Volume 11, Rev. 0, Page 433 of 494

DISCUSSION OF CHANGES
CTS 3/4.6.5.2, ICE BED TEMPERATURE MONITORING SYSTEM

was found to be non-significant risk contributors to core damage frequency and offsite releases. I&M has reviewed this evaluation, considers it applicable to CNP Units 1 and 2, and concurs with the assessment. The Ice Bed Temperature Monitoring System is not important for any scenarios modeled in the CNP site-specific PRAs. The Ice Bed Temperature Monitoring System Specification does not meet criterion 4.

Since the 10 CFR 50.36(c)(2)(ii) criteria have not been met, the Ice Bed Temperature Monitoring System LCO and associated Surveillances may be relocated out of the Technical Specifications. The Ice Bed Temperature Monitoring System Specification will be relocated to the TRM. Changes to the TRM will be controlled by the provisions of 10 CFR 50.59. This change is designated as a relocation because the Specification did not meet the criteria in 10 CFR 50.36(c)(2)(ii) and has been relocated to the TRM.

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

Attachment 1, Volume 11, Rev. 0, Page 434 of 494

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
CTS 3/4.6.5.2, ICE BED TEMPERATURE MONITORING SYSTEM

There are no specific NSHC discussions for this Specification.

CTS 3/4.6.5.4, Inlet Door Position Monitoring System

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

CONTAINMENT SYSTEMS

INLET DOOR POSITION MONITORING SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.5.4 The inlet door position monitoring system shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the inlet door position monitoring system inoperable, POWER OPERATION may continue for up to 14 days, provided the ice bed temperature monitoring system is OPERABLE and the maximum ice bed temperature is less than or equal to 27°F when monitored at least once per 4 hours; otherwise, restore the inlet door position monitoring system to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.4 The inlet door position monitoring system shall be determined OPERABLE by:

a. Performing a CHANNEL CHECK at least once per 12 hours,

b. Performing a CHANNEL FUNCTIONAL TEST at least once per 18 months, and

c. Verifying that the monitoring system correctly indicates the status of each inlet door as the door is opened and reclosed during its testing per Specification 4.6.5.3.1.

R.1

Attachment 1, Volume 11, Rev. 0, Page 439 of 494

CONTAINMENT SYSTEMS

INLET DOOR POSITION MONITORING SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.5.4 The inlet door position monitoring system shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the inlet door position monitoring system inoperable, POWER OPERATION may continue for up to 14 days, provided the ice bed temperature monitoring system is OPERABLE and the maximum ice bed temperature is ≤ 27°F when monitored at least once per 4 hours; otherwise, restore the inlet door position monitoring system to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

R.1

4.6.5.4 The inlet door position monitoring system shall be determined OPERABLE by:

a. Performing a CHANNEL CHECK at least once per 12 hours,

b. Performing a CHANNEL FUNCTIONAL TEST at least once per 18 months, and

c. Verifying that the monitoring system correctly indicates the status of each inlet door as the door is opened and reclosed during its testing per Specification 4.6.5.3.1.

DISCUSSION OF CHANGES
CTS 3/4.6.5.4, INLET DOOR POSITION MONITORING SYSTEM

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

R.1 CTS 3/4.6.5.4 provides requirements on the Inlet Door Position Monitoring System. The Inlet Door Position Monitoring System monitors the position of the ice bed inlet doors during normal operation to ensure that the ice bed inlet doors do not open (which could allow the ice bed temperature to increase above the required limits). However, the Inlet Door Position Monitoring System is not required to ensure the inlet doors remain closed and ice bed temperature is maintained within limits. Other Technical Specifications (that are being retained) will continue to ensure that the inlet doors remain closed and temperature is maintained within the required limits. This Specification does not meet the criteria for retention in the ITS; therefore, it will be retained in the Technical Requirements Manual (TRM).

This change is acceptable because CTS 3/4.6.5.4 does not meet the 10 CFR 50.36(c)(2)(ii) criteria for inclusion into the ITS.

10 CFR 50.36(c)(2)(ii) Criteria Evaluation:

1. The Inlet Door Position Monitoring System is not installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary. The Inlet Door Position Monitoring System Specification does not satisfy criterion 1.

2. The Inlet Door Position Monitoring System is not a process variable, design feature, or operating restriction that is an initial condition of a DBA or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The Inlet Door Position Monitoring System Specification does not satisfy criterion 2.

3. The Inlet Door Position Monitoring System is not a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a DBA or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The Inlet Door Position Monitoring System Specification does not satisfy criterion 3.

4. The Inlet Door Position Monitoring System is not a structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety. As discussed in

DISCUSSION OF CHANGES
CTS 3/4.6.5.4, INLET DOOR POSITION MONITORING SYSTEM

Section 4.0 (Appendix A, page A-78) and summarized in Table 1 of WCAP-11618, the Inlet Door Position Monitoring System was found to be non-significant risk contributors to core damage frequency and offsite releases. I&M has reviewed this evaluation, considers it applicable to CNP Units 1 and 2, and concurs with the assessment. The Inlet Door Position Monitoring System is not important for any scenarios modeled in the CNP site-specific PRAs. The Inlet Door Position Monitoring System Specification does not meet criterion 4.

Since the 10 CFR 50.36(c)(2)(ii) criteria have not been met, the Inlet Door Position Monitoring System LCO and associated Surveillances may be relocated out of the Technical Specifications. The Inlet Door Position Monitoring System Specification will be relocated to the TRM. Changes to the TRM will be controlled by the provisions of 10 CFR 50.59. This change is designated as a relocation because the Specification did not meet the criteria in 10 CFR 50.36(c)(2)(ii) and has been relocated to the TRM.

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
CTS 3/4.6.5.4, INLET DOOR POSITION MONITORING SYSTEM

There are no specific NSHC discussions for this Specification.

Attachment 1, Volume 11, Rev. 0, Page 444 of 494

ATTACHMENT 16

Improved Standard Technical Specifications (ISTS) not adopted in the CNP ITS

ISTS 3.6.9 Markup and Justification for Deviations (JFDs)

1

3.6 CONTAINMENT SYSTEMS

3.6.9 Hydrogen Mixing System (HMS) (Atmospheric, Ice Condenser, 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	- NOTE - LCO 3.0.4 is not applicable.	
		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 <u>AND</u> Once per 12 hours thereafter
	<u>AND</u>		
	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

1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.9.1	Operate each HMS train for ≥ 15 minutes.	92 days
SR 3.6.9.2	Verify each HMS train flow rate on slow speed is ≥ [4000] cfm.	[18] months
SR 3.6.9.3	Verify each HMS train starts on an actual or simulated actuation signal.	[18] months

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.9, HYDROGEN MIXING SYSTEM (HMS)

1. The CNP design does not include the Hydrogen Mixing System. The hydrogen mixing function is performed by the Containment Air Recirculation/Hydrogen Skimmer System, which is controlled by ITS 3.6.10 (ISTS 3.6.14). Therefore, ISTS 3.6.9 is not included in the ITS.

Attachment 1, Volume 11, Rev. 0, Page 449 of 494

ISTS 3.6.9 Bases Markup and Justification for Deviations (JFDs)

(1)

B 3.6 CONTAINMENT SYSTEMS

B 3.6.9 Hydrogen Mixing System (HMS) (Atmospheric, Ice Condenser, 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 pocket of hydrogen above the flammable concentration. Maintaining a uniformly mixed containment atmosphere also ensures that the hydrogen monitors will give an accurate measure of the bulk hydrogen concentration and give 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 (ESF) and is designed to withstand a loss of coolant accident (LOCA) without loss of function. The System has two independent trains, each consisting of two fans with their own motors and controls. Each train is sized for [4000] cfm. The two trains are initiated automatically on a Phase A containment isolation signal. The automatic action is to start the nonoperating hydrogen mixing fans on slow speed and shift the operating hydrogen mixing fans (if any) to slow speed. Each train is powered from a separate emergency power supply. Since each train fan can provide 100% of the mixing requirements, the System will provide its design function with a limiting single active failure.

Air is drawn from the steam generator compartments by the locally mounted mixing fans and is discharged toward the upper regions of the containment. This complements the air patterns established by the containment air coolers, which take suction from the operating floor level and discharge to the lower regions of the containment, and the containment spray, which cools the air and causes it to drop to lower elevations. The systems work together such that potentially stagnant areas where hydrogen pockets could develop are eliminated.

When performing their post accident hydrogen mixing function, the hydrogen mixing fans operate on slow speed to prevent motor overload in a post accident high pressure environment. The design flow rate on slow speed is based on the minimum air distribution requirements to eliminate stagnant hydrogen pockets. Each train is redundant (full capacity) and is powered from an independent ESF bus. The hydrogen mixing fans may be operated on fast speed during normal operation when a containment

1

BACKGROUND (continued)

air cooler is taken out of service. As such, the design flow rate of the hydrogen mixing fans for high speed operation is based on air distribution requirements during such normal operation.

APPLICABLE SAFETY ANALYSES

The HMS provides the capability for reducing the local hydrogen concentration to approximately the bulk average concentration. The limiting DBA relative to hydrogen concentration is a LOCA.

Hydrogen may accumulate in containment following a LOCA as a result of:

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 and Emergency Core Cooling System 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 Phase A containment isolation signal.

Operation with at least one HMS train provides the mixing necessary to ensure uniform hydrogen concentration throughout containment.

1

BASES

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 volume percent 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 steam line break (SLB) are reduced due to the pressure and temperature limitations in 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. In this Condition, the remaining OPERABLE HMS train is adequate to perform the hydrogen mixing function. However, the overall reliability is reduced because a single failure in the OPERABLE train could result in reduced hydrogen mixing capability. 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 hydrogen recombiners, Containment Spray System, Hydrogen Purge System, and hydrogen monitors.

Required Action A.1 has been modified by a Note that states the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one HMS train is inoperable. This allowance 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), and 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.

1

BASES

ACTIONS (continued)

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 trains 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 Recombiner/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 once per 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.

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

(1)

BASES

ACTIONS (continued)

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 each 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.

SR 3.6.9.2

Verifying that each HMS train flow rate on slow speed is ≥ [4000] 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.

SR 3.6.9.3

This SR ensures that each HMS train responds properly to a containment cooling actuation signal. The Surveillance verifies that each fan starts on slow speed from the nonoperating condition and that each fan shifts to slow speed from fast operating condition. 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 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.

REFERENCES

1. 10 CFR 50.44.
2. 10 CFR 50, Appendix A, GDC 41.

1

BASES

REFERENCES (continued)

3. Regulatory Guide 1.7, Revision [1].

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.9 BASES, HYDROGEN MIXING SYSTEM (HMS)

1. Changes are made to be consistent with changes made to the Specification.

ISTS 3.6.11 Markup and Justification for Deviations (JFDs)

(1)

3.6 CONTAINMENT SYSTEMS

3.6.11 Iodine Cleanup System (ICS) (Atmospheric and Subatmospheric)

LCO 3.6.11 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. 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
SR 3.6.11.1	Operate each ICS train for [≥ 10 continuous hours with heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days
SR 3.6.11.2	Perform required ICS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.11.3	Verify each ICS train actuates on an actual or simulated actuation signal.	[18] months
SR 3.6.11.4	[Verify each ICS filter bypass damper can be opened.	[18] months]

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.11, IODINE CLEANUP SYSTEM (ICS)

1. The CNP design does not include the Iodine Cleanup System. Therefore, ISTS 3.6.11 is not included in the ITS.

Attachment 1, Volume 11, Rev. 0, Page 460 of 494

ISTS 3.6.11 Bases Markup and Justification for Deviations (JFDs)

1

B 3.6 CONTAINMENT SYSTEMS

B 3.6.11 Iodine Cleanup System (ICS) (Atmospheric and Subatmospheric)

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 demister, 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 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 in sections of the main HEPA filter bank. 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 safety injection signal. The system design is described in Reference 2.

The demister is included for moisture (free water) removal from the gas stream. Heaters are used to heat the gas stream, which lowers the relative humidity. Continuous operation of each train for at least 10 hours per month with the heaters on reduces moisture buildup on the HEPA filters and adsorbers. Both the demister and heater are important to the effectiveness of the charcoal adsorbers.

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).

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. [Essential service water is required to supply cooling water to the cooling coils.]

1

BASES

BACKGROUND (continued)

During normal operation, the Containment Cooling System is aligned to bypass the ICS HEPA filters and charcoal adsorbers. For ICS operation following a DBA, however, the bypass dampers automatically reposition to draw the air through the filters and adsorbers.

APPLICABLE SAFETY ANALYSES

The DBAs that result in a release of radioactive iodine within containment are a loss of coolant accident (LOCA) or a rod ejection accident (REA). 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 released is limited by reducing the iodine concentration present 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) assume 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, SLB, and REA. Because these accidents are considered credible accidents in MODES 1, 2, 3, and 4, the ICS must be operable to ensure the reduction in iodine concentration assumed in the accident analyses.

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.

1

BASES

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,

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 the ICS 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 without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.11.1

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. For systems with heaters, operation with the heaters on (automatic heater cycling to maintain temperature) for ≥ 10 continuous hours eliminates moisture on the adsorbers and HEPA filters. 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 independent of the ICS.

(1)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.11.2

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 3.6.11.3

The automatic startup test verifies that both trains of equipment start upon receipt of an actual or simulated test signal. 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 Frequency was developed considering that the system equipment OPERABILITY is demonstrated at a 31 day Frequency by SR 3.6.11.1.

[SR 3.6.11.4

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 [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.]

REFERENCES

1. 10 CFR 50, Appendix A, GDC 41, GDC 42, and GDC 43.
2. FSAR, Section [6.5].
3. Regulatory Guide 1.52, Revision [2].
4. FSAR, Chapter [15].

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.11 BASES, IODINE CLEANUP SYSTEM (ICS)

1. Changes are made to be consistent with changes made to the Specification.

ISTS 3.6.12 Markup and Justification for Deviations (JFDs)

(1)

3.6 CONTAINMENT SYSTEMS

3.6.12 Vacuum Relief Valves (Atmospheric and Ice Condenser)

LCO 3.6.12 [Two] vacuum relief lines shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One vacuum relief line inoperable.	A.1 Restore vacuum relief line 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 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.12.1	Verify each vacuum relief line is OPERABLE in accordance with the Inservice Testing Program.	In accordance with the Inservice Testing Program

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.12, VACUUM RELIEF VALVES

1. The CNP design does not include the Vacuum Relief Valves. Therefore, ISTS 3.6.12 is not included in the ITS.

Attachment 1, Volume 11, Rev. 0, Page 469 of 494

ISTS 3.6.12 Bases Markup and Justification for Deviations (JFDs)

1

B 3.6 CONTAINMENT SYSTEMS

B 3.6.12 Vacuum Relief Valves (Atmospheric and Ice Condenser)

BASES

BACKGROUND

The purpose of the vacuum relief lines is to 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 containment cooling features, such as the Containment Spray System. Multiple equipment failures or human errors are necessary to cause inadvertent actuation of these systems.

The containment pressure vessel contains two 100% vacuum relief lines that protect the containment from excessive external loading.

[For this facility, the characteristics of the vacuum relief valves and their locations in the containment pressure vessel are as follows:]

APPLICABLE SAFETY ANALYSES

Design of the vacuum relief lines involves calculating the effect of inadvertent actuation of containment cooling features, which can reduce the atmospheric temperature (and hence pressure) inside containment (Ref. 1). Conservative assumptions are used for all the relevant parameters in the calculation; for example, for the Containment Spray System, the minimum spray water temperature, maximum initial containment temperature, maximum spray flow, all spray trains operating, etc. The resulting containment pressure versus time is calculated, including the effect of the opening of the vacuum relief lines when their negative pressure setpoint is reached. It is also assumed that one valve fails to open.

The containment was designed for an external pressure load equivalent to [-2.5] psig. The inadvertent actuation of the containment cooling features was analyzed to determine the resulting reduction in containment pressure. The initial pressure condition used in this analysis was [-0.3] psig. This resulted in a minimum pressure inside containment of [-2.0] psig, which is less than the design load.

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 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).

(1)

BASES

LCO	The LCO establishes the minimum equipment required to accomplish the vacuum relief function following the inadvertent actuation of containment cooling features. Two 100% 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, Quench Spray (QS) 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, QS System, and Containment Cooling System are not required to be OPERABLE in MODES 5 and 6. Therefore, maintaining OPERABLE vacuum relief valves is not required in MODE 5 or 6.
ACTIONS	A.1 When one of the required vacuum relief lines is 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. 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.

1

BASES

SURVEILLANCE REQUIREMENTS	<u>SR 3.6.12.1</u> This SR cites 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 Section XI of the ASME, Boiler and Pressure Vessel Code and applicable Addenda (Ref. 2). Therefore, SR Frequency is governed by the Inservice Testing Program.
REFERENCES	1. FSAR, Section [6.2]. 2. ASME, Boiler and Pressure Vessel Code, Section XI.

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.12 BASES, VACUUM RELIEF VALVES

1. Changes are made to be consistent with changes made to the Specification.

ISTS 3.6.13 Markup and Justification for Deviations (JFDs)

(1)

3.6 CONTAINMENT SYSTEMS

3.6.13 Shield Building Air Cleanup System (SBACS) (Dual and Ice Condenser)

LCO 3.6.13 Two SBACS trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One SBACS train inoperable.	A.1	Restore SBACS train to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.13.1	Operate each SBACS train for [≥ 10 continuous hours with heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days
SR 3.6.13.2	Perform required SBACS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.13.3	Verify each SBACS train actuates on an actual or simulated actuation signal.	[18] months
SR 3.6.13.4	[Verify each SBACS filter bypass damper can be opened.	[18] months]

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.13.5	Verify each SBACS train flow rate is ≥ [ ] cfm.	[18] months on a STAGGERED TEST BASIS

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.13, SHIELD BUILDING AIR CLEANUP SYSTEM (SBACS)

1. The CNP design does not include the Shield Building Air Cleanup System. Therefore, ISTS 3.6.13 is not included in the ITS.

Attachment 1, Volume 11, Rev. 0, Page 478 of 494

ISTS 3.6.13 Bases Markup and Justification for Deviations (JFDs)

1

B 3.6 CONTAINMENT SYSTEMS

B 3.6.13 Shield Building Air Cleanup System (SBACS) (Dual and Ice Condenser)

BASES

BACKGROUND

The SBACS is required by 10 CFR 50, Appendix A, GDC 41, "Containment Atmosphere Cleanup" (Ref. 1), to ensure that radioactive materials that leak from the primary containment into the shield building (secondary containment) following a Design Basis Accident (DBA) are filtered and adsorbed prior to exhausting to the environment.

The containment has a secondary containment called 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.

The SBACS 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 SBACS.

The SBACS consists of two separate and redundant trains. Each train includes a heater, [cooling coils,] a prefilter, moisture separators, 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 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 (SI) signal. The system is described in Reference 2.

The prefilters remove large particles in the air, and the moisture separators remove entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal absorbers. Heaters may be included to reduce the relative humidity of the airstream on systems that operate in high humidity. Continuous operation of each train, for at least 10 hours per month, with heaters on, reduces moisture buildup on their

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BASES

BACKGROUND (continued)

HEPA filters and adsorbers. [The cooling coils cool the air to keep the charcoal beds from becoming too hot due to absorption of fission product.]

During normal operation, the Shield Building Cooling System is aligned to bypass the SBACS's HEPA filters and charcoal adsorbers. For SBACS operation following a DBA, however, the bypass dampers automatically reposition to draw the air through the filters and adsorbers.

The SBACS reduces the radioactive content in the shield building atmosphere following a DBA. Loss of the SBACS could cause site boundary doses, in the event of a DBA, to exceed the values given in the licensing basis.

APPLICABLE SAFETY ANALYSES

The SBACS 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 SBACS 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 SBACS actuation in the safety analyses is based upon a worst case response time following an SI initiated at the limiting setpoint. The total response time, from exceeding the signal setpoint to attaining the negative pressure of [0.5] inch water gauge in the shield building, is [22 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.

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

LCO

In the event of a DBA, one SBACS train is required to provide the minimum particulate iodine removal assumed in the safety analysis. Two trains of the SBACS must be OPERABLE to ensure that at least one train will operate, assuming that the other train is disabled by a single active failure.

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

Attachment 1, Volume 11, Rev. 0, Page 481 of 494

1

BASES

APPLICABILITY (continued)

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 (although one or more trains may be operating for other reasons, such as habitability during maintenance in the shield building annulus).

ACTIONS

A.1

With one SBACS 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 SBACS train and the low probability of a DBA occurring during this period. The Completion Time is adequate to make most repairs.

B.1 and B.2

If the SBACS 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.

SURVEILLANCE REQUIREMENTS

SR 3.6.13.1

Operating each SBACS 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. For systems with heaters, operation with the heaters on (automatic heater cycling to maintain temperature) for ≥ 10 continuous hours eliminates moisture on the adsorbers and HEPA filters. Experience from filter testing at operating units indicates that the 10 hour period is adequate for moisture

(1)

BASES

SURVEILLANCE REQUIREMENTS (continued)

elimination on the adsorbers and HEPA filters. The 31 day Frequency was developed in consideration of the known reliability of fan motors and controls, the two train redundancy available, and the iodine removal capability of the Containment Spray System.

SR 3.6.13.2

This SR verifies that the required SBACS 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 3.6.13.3

The automatic startup ensures that each SBACS train responds properly. 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 SBACS equipment OPERABILITY is demonstrated at a 31 day Frequency by SR 3.6.13.1.

[SR 3.6.13.4

The SBACS 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 [18] month Frequency is considered to be acceptable based on damper reliability and design, 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.]

SR 3.6.13.5

The proper functioning of the fans, dampers, filters, adsorbers, etc., as a system is verified by the ability of each train to produce the required

BASES

SURVEILLANCE REQUIREMENTS (continued)

system flow rate. The [18] month Frequency on a STAGGERED TEST BASIS is consistent with Regulatory Guide 1.52 (Ref. 4) guidance for functional testing.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 41.
2. FSAR, Section [6.5].
3. FSAR, Chapter [15].
4. Regulatory Guide 1.52, Revision [2].

Attachment 1, Volume 11, Rev. 0, Page 484 of 494

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.13 BASES, SHIELD BUILDING AIR CLEANUP SYSTEM (SBACS)

1. Changes are made to be consistent with changes made to the Specification.

Attachment 1, Volume 11, Rev. 0, Page 485 of 494

ISTS 3.6.19 Markup and Justification for Deviations (JFDs)

1

3.6 CONTAINMENT SYSTEMS

3.6.19 Shield Building (Dual and Ice Condenser)

LCO 3.6.19 The shield building shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Shield building inoperable.	A.1 Restore shield building to OPERABLE status.	24 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 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.19.1	[Verify annulus negative pressure is > [5] inches water gauge.	12 hours]
SR 3.6.19.2	Verify one shield building access door in each access opening is closed.	31 days
SR 3.6.19.3	Verify shield building structural integrity by performing a visual inspection of the exposed interior and exterior surfaces of the shield building.	During shutdown for SR 3.6.1.1 Type A tests

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.19.4	Verify the shield building can be maintained at a pressure equal to or more negative than [-0.5] inch water gauge in the annulus by one Shield Building Air Cleanup System train with final flow ≤ [ ] cfm within [22] seconds after a start signal.	[18] months on a STAGGERED TEST BASIS for each Shield Building Air Cleanup System Train

Attachment 1, Volume 11, Rev. 0, Page 488 of 494

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.19, SHIELD BUILDING

1. The CNP design does not include the Shield Building. Therefore, ISTS 3.6.19 is not included in the ITS.

Attachment 1, Volume 11, Rev. 0, Page 489 of 494

ISTS 3.6.19 Bases Markup and Justification for Deviations (JFDs)

1

B 3.6 CONTAINMENT SYSTEMS

B 3.6.19 Shield Building (Dual and Ice Condenser)

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 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. The Shield Building Air Cleanup System (SBACS) 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. The shield building is required to be OPERABLE to ensure retention of containment leakage and proper operation of the SBACS.
APPLICABLE SAFETY ANALYSES	The design basis for shield building OPERABILITY is a LOCA. Maintaining shield building OPERABILITY ensures that the release of radioactive material from the containment atmosphere is restricted to those leakage paths and associated leakage rates assumed in the accident analyses. 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 SBACS and to limit radioactive leakage from the containment to those paths and leakage rates assumed in the accident analyses.
APPLICABILITY	Maintaining shield building OPERABILITY prevents leakage of radioactive material from the shield building. Radioactive material may enter the shield building from the containment following a LOCA. Therefore, shield building OPERABILITY is required in MODES 1, 2, 3, and 4 when a steam line break, LOCA, or rod ejection accident could release radioactive material to the 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.

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 containment and the low probability of a Design Basis Accident occurring during this time period.

B.1 and B.2

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 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 3.6.19.1

Verifying that shield building annulus negative 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.]

SR 3.6.19.2

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 31 day Frequency of this SR is based on engineering judgment and is considered adequate in view of the other indications of door status that are available to the operator.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

[SR 3.6.19.3

This SR 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.]

SR 3.6.19.4

The Shield Building Air Cleanup System produces a negative pressure to prevent leakage from the building. SR 3.6.19.4 verifies that the shield building can be rapidly drawn down to [-0.5] inch water gauge in the annulus. This test is used to ensure shield building boundary integrity. Establishment of this pressure is confirmed by SR 3.6.19.4, which demonstrates that the shield building can be drawn down to ≤ [-0.5] inches of vacuum water gauge in the annulus ≤ [22] seconds using one Shield Building Air Cleanup System 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 Shield Building Air Cleanup System train. The Shield Building Air Cleanup System train used for this Surveillance is staggered to ensure that in addition to the requirements of LCO 3.6.19.4, 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 Shield Building Air Cleanup System being tested functions as designed. The inoperability of the Shield Building Air Cleanup System train does not necessarily constitute a failure of this Surveillance relative to the shield building OPERABILITY. The 18 month Frequency is based on the need to perform this Surveillance under conditions that apply during a plant outage.

REFERENCES None.

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.19 BASES, SHIELD BUILDING

1. Changes are made to be consistent with changes made to the Specification.