ENCLOSURE 2

VOLUME 11

TURKEY POINT NUCLEAR GENERATING STATION UNIT 3 AND UNIT 4

IMPROVED TECHNICAL SPECIFICATIONS CONVERSION

ITS SECTION 3.6 CONTAINMENT SYSTEMS

Revision 0

LIST OF ATTACHMENTS

1. ITS Section 3.6.1 – Containment
2. ITS Section 3.6.2 – Containment Air Locks
3. ITS Section 3.6.3 – Containment Isolation Valves
4. ITS Section 3.6.4 – Containment Pressure
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6. ITS Section 3.6.6 – Containment Spray and Cooling Systems
7. ITS Section 3.6.7 – Recirculation pH Control System
8. Relocated/Deleted Current Technical Specifications (CTS)
9. ISTS Not Adopted

ATTACHMENT 1

ITS Section 3.6.1 – Containment

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

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 ~~PRIMARY~~ CONTAINMENT

CONTAINMENT ~~INTEGRITY~~

A02

LIMITING CONDITION FOR OPERATION

LCO 3.6.1 3.6.1.1 ~~Primary~~ CONTAINMENT ~~INTEGRITY~~ shall be ~~maintained~~ OPERABLE.* A02

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

ACTION:

ACTION A ~~Without primary~~ CONTAINMENT ~~INTEGRITY~~ inoperable, restore CONTAINMENT ~~INTEGRITY~~ to OPERABLE status within 1 hour or be in at least
ACTION B HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. A02

SURVEILLANCE REQUIREMENTS

4.6.1.1 CONTAINMENT INTEGRITY shall be demonstrated: See ITS 3.6.2 and 3.6.3

a. In accordance with the Surveillance Frequency Control Program by verifying that all penetrations** not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their closed positions; See ITS 3.6.3

b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3. See ITS 3.6.2

INSERT 1

INSERT 2

A03

See ITS 3.6.3

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* Exception may be taken under Administrative Controls for opening of valves and airlocks necessary to perform surveillance, testing requirements and/or corrective maintenance. In addition, Specification 3.6.4 shall be complied with.

** 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.

(A03)

INSERT 1

SURVEILLANCE		FREQUENCY
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

(A03)

INSERT 2

SURVEILLANCE		FREQUENCY
SR 3.6.1.2	Verify containment structural integrity in accordance with the Pre-Stressed Concrete Containment Tendon Surveillance Program.	In accordance with the Pre-Stressed Concrete Containment Tendon Surveillance Program

CONTAINMENT SYSTEMS

CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

OPERABLE

LCO 3.6.1 3.6.1.2 Containment ~~leakage rates~~ shall be ~~limited in accordance with the Containment Leakage Rate Testing Program.~~ A02

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

ACTION:

Containment inoperable, restore containment to OPERABLE status

ACTION A

ACTION B

~~With the measured overall integrated containment leakage rate exceeding 1.0 L_a~~ within one hour, initiate action to be in HOT STANDBY within the next 6 hours, and COLD SHUTDOWN within the following 30 hours. Restore the overall integrated leakage rate to less than 0.75 L_a and the combined leakage rate for all penetrations subject to Type B and C tests to less than 0.60 L_a prior to increasing the Reactor Coolant System temperature above 200°F. A02

See ITS 5.5

SURVEILLANCE REQUIREMENTS

, except for containment air lock testing,

SR 3.6.1.1 4.6.1.2 The containment leakage rates shall be demonstrated at the required test schedule and shall be determined in conformance with the criteria specified in the Containment Leakage Rate Testing Program. A04

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 OPERABLE ~~maintained at a level consistent with the acceptance criteria in Specification 4.6.1.6~~. A02

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

ACTION:

Add proposed ACTION A L01

ACTION A ACTION B

a. ~~With more than one tendon with an observed lift-off force between 90% and 95% of the predicted force, or with one tendon below 90% of the predicted force, restore the tendon(s) to the required level of integrity within 15 days~~ or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTION A L01

ACTION A ACTION B

b. ~~With the average of all measured tendon forces for each type of tendon (dome, vertical, and hoop), including those measured in ACTION a., less than the predicted force, restore the tendon(s) to the required level of integrity within 15 days~~ or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTION A L01

ACTION A ACTION B

c. ~~With any abnormal degradation of the structural integrity other than ACTION a. and ACTION b.~~, ~~at a level below the acceptance criteria of Specifications 4.6.1.6.1, 4.6.1.6.2 and 4.6.1.6.3, restore the containment to the required level of integrity within 72 hours~~ or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUREMENTS

Add proposed SR 3.6.1.1 and SR 3.6.1.2 A05

SR 3.6.1.1
SR 3.6.1.2

~~4.6.1.6.1~~ ~~Containment Tendons. The containment tendons and the containment exterior surfaces shall be examined in accordance with ASME Boiler and Pressure Vessel Code, Section XI, Subsection IWL, “Requirements for Class CC Concrete Components of Light-Water Cooled Plants,” and the modifications presented in 10 CFR 50.55a(b)(2)(viii), “Examination of concrete containments,” as modified by approved exemptions. The containment structural integrity shall be demonstrated during the inspection periods specified in IWL-2410 and IWL-2420. The tendons’ structural integrity shall be demonstrated by~~: LA01

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

~~a.~~ ~~Determining that tendons, selected in accordance with IWL-2521, have the average of all measured tendon forces for each type of tendon (dome, vertical and hoop) equal to or greater than the minimum required prestress specified at the anchorage for that type of tendon.~~

~~b.~~ ~~Assuring that the measured force in each individual tendon is not less than 95% of the predicted force unless the following conditions are satisfied:~~

~~1)~~ ~~The measured force in no tendon is below 90% of the predicted force and the measured force in no more than one tendon is between 90% and 95% of the predicted force;~~
~~2)~~ ~~The measured force in two tendons located adjacent to the tendon in 1) are not less than 95% of the predicted forces; and~~
~~3)~~ ~~The measured forces in all the remaining sample tendons are not less than 95% of the predicted force.~~

~~The predicted force for each tendon shall be calculated individually for each inspection prior to the beginning of each inspection, and should consider such factors as:~~

- ~~Prestressing history;~~
- ~~Friction losses; and~~
- ~~Time-dependent losses (creep, shrinkage, relaxation), considering time elapsed from prestressing.~~

LA01

~~When evaluation of consecutive surveillances of prestressing forces for the same tendon or tendons in a group indicates a trend of prestress loss such that the tendon force(s) would be less than the minimum design prestress requirements before the next inspection interval, an evaluation shall be performed and reported in the Engineering Evaluation Report as prescribed in IWL-3300.~~

~~c.~~ ~~Performing tendon detensioning, examinations, and testing on a sample tendon of each type (dome, vertical, and hoop). A single wire or strand shall be removed from each detensioned tendon. Each removed wire or strand shall be examined over its entire length for corrosion and mechanical damage. Tension tests shall be performed on each removed wire or strand: one at each end, one at mid-length, and one in the location of the most corroded area, if any. The following information shall be obtained from each test:~~

~~1)~~ ~~Yield strength;~~
~~2)~~ ~~Ultimate tensile strength;~~
~~3)~~ ~~Elongation~~.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

~~The condition of wire or strand is acceptable if:~~

~~1) Samples are free of physical damage;~~
~~2) Sample ultimate tensile strength and elongation are not less than minimum specified values.~~

~~d. Performing tendon retensioning of those tendons that have been detensioned to at least the force predicted for the tendon at the time of the test. However, the retensioning force shall not exceed 70% of the specified minimum ultimate tensile strength of the tendon based on the number of effective wires or strands in the tendon at the time of retensioning. During retensioning of these tendons, if the elongation corresponding to a specific load (adjusted for effective wires or strands) differs by more than 10% from that recorded during the last measurement, an evaluation must be performed to determine whether the difference is related to wire failures or slip of wires in anchorage. A difference of more than 10% must be identified in the ISI Summary Report required by IWA-6000.~~

LA01

~~e. Performing examination of corrosion protection medium and free water in accordance with IWL-2525, with acceptance standards prescribed in IWL-3221.4. The following conditions, if they occur, shall be reported in the ISI Summary Report required by IWA-6000:~~

~~1) The sheathing filler grease contains chemically combined water exceeding 10% by weight or the presence of free water;~~
~~2) The absolute difference between the amount removed and the amount replaced exceeds 10% of the tendon net duct volume.~~
~~3) Grease leakage is detected during general visual examination of the containment surface.~~

Add proposed SR 3.6.1.1 and SR 3.6.1.2

A05

SR 3.6.1.1
SR 3.6.1.2

~~4.6.1.6.2 End Anchorages and Containment Concrete Surfaces. The structural integrity of the end anchorages of all tendons inspected pursuant to Specification 4.6.1.6.1 and the containment concrete surfaces shall be demonstrated by performing examination of tendon anchorage areas and containment concrete surfaces in accordance with IWL-2000, with acceptance standards prescribed in IWL-3000. Acceptability of inaccessible areas shall be evaluated when conditions exist in accessible areas that could indicate the presence of or result in degradation to such inaccessible areas. For each inaccessible area identified, the following shall be provided in the ISI Summary Report required by IWA-6000:~~

LA01

~~1) A description of the type and estimated extent of degradation, and the conditions that led to the degradation;~~
~~2) An evaluation of each area, and the result of the evaluation; and~~
~~3) A description of necessary corrective actions.~~

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

Add proposed SR 3.6.1.1

A05

SR 3.6.1.1

~~4.6.1.6.3. Containment Surfaces Inspection for Containment Leakage Rate Testing Program. In accordance with the Containment Leakage Rate Testing Program~~, ~~a visual inspection of the accessible interior and exterior surfaces of the containment, including the liner plate, shall be performed. The purpose of this inspection shall be to identify any evidence of structural deterioration which may affect containment structural integrity or leaktightness. The visual inspection shall be general in nature; its intent shall be to detect gross areas of widespread cracking, spalling, gouging, rust, weld degradation, or grease leakage. The visual examination may include the utilization of binoculars or other optical devices. Corrective actions taken, and recording of structural deterioration and corrective actions, shall be in accordance with the Containment Leakage Rate Testing Program. Records of previous inspections shall be reviewed to verify no apparent changes in appearance. The first inspection performed will form the baseline for future surveillances.~~

LA02

See ITS 3.6.3

CONTAINMENT SYSTEMS

CONTAINMENT VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.1.7 Each containment purge supply and exhaust isolation valve shall be administratively sealed closed and deactivated or the associated penetration(s) shall be isolated by flange.

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

ACTION:

a. With Specification 3.6.1.7 not met, within 4 hours comply with Specification 3.6.1.7, or otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With a containment purge supply and/or exhaust isolation valve(s) having a measured leakage rate exceeding the limits of Specification 4.6.1.7.2, restore the inoperable valve(s) to OPERABLE status or isolate the penetrations such that the measured leakage rate does not exceed the limits of Specification 4.6.1.7.2 within 72 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.7.1* Each containment purge supply and exhaust isolation valve shall be verified to be administratively sealed closed and deactivated in accordance with the Surveillance Frequency Control Program.

SR 3.6.1.1

4.6.1.7.2 In accordance with the Surveillance Frequency Control Program, each containment purge supply and exhaust isolation valve shall be demonstrated OPERABLE by verifying that the measured leakage rate is within limit when pressurized to P_a. For each containment purge penetration isolated by a blind flange, the measured leakage rate shall be verified within limit in accordance with the Containment Leakage Rate Testing Program,

.

* Performance of SR 4.6.1.7.1 is not required when the associated purge supply and/or exhaust penetration is isolated by blind flange.

See ITS 3.6.3

DEFINITIONS

~~CONTAINMENT INTEGRITY~~

~~1.7 CONTAINMENT INTEGRITY shall exist when:~~

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

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

~~2) Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except as provided in Specification 3.6.4.~~

~~b. The equipment hatch is closed and sealed,~~

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

LA03

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

~~e. The sealing mechanism associated with each penetration (e.g., welds, bellows, or 0-rings) is OPERABLE~~.

LA03

CONTROLLED LEAKAGE

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

CORE ALTERATIONS

1.9 CORE ALTERATIONS shall be the movement of any fuel, sources, reactivity control components, or other components affecting reactivity within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

CORE OPERATING LIMITS REPORT

1.10 The CORE OPERATING LIMITS REPORT (COLR) is the unit-specific document that provides core operating limits for the current operating reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with NRC approved methodology. Unit operation within these operating limits is addressed in individual specifications. The COLR is submitted to the NRC in accordance with the requirements of 6.9.1.7.

DIGITAL CHANNEL OPERATIONAL TEST

1.11 A DIGITAL CHANNEL OPERATIONAL TEST shall be the injection of a simulated signal into the channel as close to the sensor as practicable to verify OPERABILITY of alarm, interlock, and/or trip functions. The DIGITAL CHANNEL OPERATIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.

See ITS Chapter 1.0

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN) 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. 5.0, "Standard Technical Specifications - Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

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

A02 CTS 3/4.6.1 requires CONTAINMENT INTEGRITY. CTS 3.6.1.1 states "Primary CONTAINMENT INTEGRITY shall be maintained." CTS 3.6.1.1 ACTION requires, in part, without primary CONTAINMENT INTEGRITY to restore CONTAINMENT INTEGRITY within one hour. CTS 3.6.1.2 requires that Containment leakage rates be limited in accordance with the Containment Leakage Rate Testing Program. CTS 3.6.1.2 ACTION requires, in part, that with the measured overall integrated containment leakage rate exceeding 1.0 La, within one hour initiate action to shut the plant down. CTS 3.6.1.6 requires the structural integrity of the containment to be maintained within specified parameters. ITS 3.6.1 is the containment specification. ITS LCO 3.6.1 requires the containment to be OPERABLE. ITS 3.6.1 ACTION A requires when containment is inoperable to restore the containment to OPERABLE status within 1 hour. This changes the CTS by replacing the specific CONTAINMENT INTEGRITY definition and all references to it with the requirement for Containment OPERABILITY. Additionally, it changes the CTS by combining CTS 3.6.1.1, CTS 3.6.1.2, and CTS 3.6.1.6 into one specification while retaining the requirement to initiate action within one hour.

The purpose of CTS 3.6.1.1, CTS 3.6.1.2, and CTS 3.6.1.6 is to provide requirements pertaining to containment OPERABILITY. This portion of the change (combining CTS 3.6.1.1, CTS 3.6.1.2, and 3.6.1.6) is acceptable because moving these requirements into one Limiting Condition for Operation (LCO), ITS LCO 3.6.1, centralizes the requirements. The CTS 3/4.6.1 references to CONTAINMENT INTEGRITY have been deleted because the CTS definition of CONTAINMENT INTEGRITY in CTS 1.7 is incorporated into ITS 3.6.1, 3.6.2, and 3.6.3 and is no longer maintained as a separate definition in the ITS. ITS 3.6.1 requires that the containment shall be OPERABLE. The definition of OPERABLE and the subsequent ITS 3.6.1 LCO, ACTIONS, and Surveillance Requirements (SRs) are sufficient to encompass the applicable requirements of the CTS 1.7 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. 5.0. Because the 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.

A03 CTS 3.6.1.1, Containment Integrity, CTS 3.6.1.2, Containment Leakage, and CTS 3.6.1.6, Containment Structural Integrity, are being combined into ITS 3.6.1. The SRs in CTS 4.6.1.1 are being moved to ITS 3.6.2, Containment Air Locks, and SR 3.6.3, Containment Isolation valves. The added SRs to CTS 3.6.1.1 are reworded from CTS 3.6.1.2 and CTS 3.6.1.6 as discussed in DOCs A04 and A05.

This change is acceptable because the SRs being added are from the other two CTSs being combined into one ITS. This change is designated as administrative because it does not result in technical changes to the CTS.

A04 CTS 4.6.1.2 requires performance of leakage rate testing in accordance with the Containment Leakage Rate Testing Program. ITS SR 3.6.1.1 requires this same test but adds an exception for containment air lock testing. This changes the CTS by excluding the containment air lock testing in the required CTS surveillance.

This change is acceptable because ITS SR 3.6.2.1 requires performance of air lock leakage rate testing. Furthermore, ITS SR 3.6.2.1 is required to be evaluated against the acceptance criteria that are applicable to SR 3.6.1.1. This will ensure the airlock leakage is accounted for in determining the combined Type B and C containment leakage rate. This change is designated as administrative because it does not result in technical changes to the CTS.

A05 CTS 4.6.1.6.1 states, in part, that the containment tendons and the containment exterior surfaces shall be examined. CTS 4.6.1.6.2 states, in part, that the structural integrity of the end anchorages of all tendons inspected pursuant to Specification 4.6.1.6.1 and the containment concrete surfaces shall be demonstrated. CTS 4.6.1.6.3 states, in part, that in accordance with the Containment Leakage Rate Testing Program, a visual inspection of the accessible interior and exterior surfaces of the containment, including the liner plate, shall be performed. ITS SR 3.6.1.1 states to perform required visual examinations and leakage rate testing except for containment air lock testing, in accordance with the Containment Leakage Rate Testing Program. ITS SR 3.6.1.2 states to verify containment structural integrity in accordance with the Pre-Stressed Concrete Containment Tendon Surveillance Program. This changes the CTS by separating the containment visual examinations and leakage testing requirements from the containment tendon surveillances.

This change is acceptable because the inspection requirements and structural integrity demonstrations of the containment tendons, containment surfaces, and end anchorages continue to be required. This change is designated as administrative because it does not result in technical changes to the CTS. In addition, DOC LA01 discusses the relocation of inspection requirements to the Pre-Stressed Concrete Containment Tendon Surveillance Program.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 3 – Removing Procedural Details for Meeting TS Requirement or Reporting Requirements)* CTS 4.6.1.6.1 states, in part, "The containment tendons and the containment exterior surfaces shall be examined." CTS 4.6.1.2 states, in part, "The structural integrity of the end anchorages of all tendons inspected pursuant to Specification 4.6.1.6.1 and the containment concrete surfaces shall be demonstrated." Both CTS 4.6.1.6.1 and CTS 4.6.1.6.2 provide requirements for how these surveillances shall be performed and the associated acceptance criteria. ITS SR 3.6.1.2 states, "Verify containment structural integrity in accordance with the Pre-Stressed Concrete Containment Tendon Surveillance Program." ITS 5.5.4, "Pre-Stressed Concrete Containment Tendon Surveillance Program," provides controls for monitoring any tendon degradation in concrete containments, including effectiveness of its corrosion protection medium, to ensure containment structural integrity including performance, inspection frequencies, and acceptance criteria. This changes the CTS by moving the details of the surveillance to the Pre-Stressed Concrete Containment Tendon Surveillance Program.

The removal of these details associated with the surveillance of containment tendons is acceptable because this type of information is not necessary to be included in the Technical Specifications in order to provide adequate protection of public health and safety. ITS SR 3.6.1.2 retains the requirement to verify the containment structural integrity in accordance with the Pre-Stressed Concrete Containment Tendon Surveillance Program. This change is acceptable because the requirement to confirm the containment structural integrity is maintained while the details associated with performance, frequency, and acceptance criteria will be adequately controlled in the Pre-Stressed Concrete Containment Tendon Surveillance Program requirements in ITS Chapter 5. This change is designated as a less restrictive removal of detail change because details associated with performance of the containment structural integrity surveillances are being removed from the Technical Specifications.

LA02 *(Type 3 – Removing Procedural Details for Meeting TS Requirement or Reporting Requirements)* CTS 4.6.1.6.3 states, in part, "In accordance with the Containment Leakage Rate Testing Program, a visual inspection of the accessible interior and exterior surfaces of the containment, including the liner plate, shall be performed." CTS 4.6.1.6.3 also provides requirements for how this surveillance shall be performed and associated acceptance criteria. ITS SR 3.6.1.1 states, "Perform required visual examinations and leakage rate testing except for containment air lock testing, in accordance with the Containment Leakage Rate Testing Program." ITS TS 5.5.13, "Containment Leakage Rate Testing Program," establish the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J. This changes the CTS by moving the guidance associated with the visual inspection of the accessible interior and exterior surfaces to the Containment Leakage Rate Testing Program.

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

LA03 *(Type 2 – Removing Descriptions of System Operation)* CTS 1.7 states, in part, "CONTAINMENT INTEGRITY shall exist when: a. All penetrations required to be closed during accident conditions are either: 1) Capable of being closed by an OPERABLE containment automatic isolation valve system, or 2) Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administrative control as permitted by Specification 3.6.4; b. The equipment hatch is closed and sealed; c. Each air lock is in compliance with the requirements of Specification 3.6.1.3; and e. The sealing mechanism associated with each penetration (e.g., welds, bellows, or 0-rings) is OPERABLE. ITS 3.6.1 states "Containment shall be OPERABLE." This changes the CTS by moving the reference to penetration, equipment hatch and, air lock requirements to the Bases.

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

LESS RESTRICTIVE CHANGES

None

L01 *(Category 4 – Relaxation of Required Action)* CTS 3.6.1.6 ACTION a states, in part, "With more than one tendon with an observed lift-off force between 90% and 95% of the predicted force, or with one tendon below 90% of the predicted force, restore the tendon(s) to the required level of integrity within 15 days." ACTION b states, in part, "With the average of all measured tendon forces for each type of tendon (dome, vertical, and hoop), including those measured in ACTION a, less than the predicted force, restore the tendon(s) to the required level of integrity within 15 days." ACTION c states, in part, "With any abnormal degradation of the structural integrity other than ACTION a. and ACTION b, at a level below the acceptance criteria of Specifications 4.6.1.6.1, 4.6.1.6.2, and 4.6.1.6.3, restore the containment to the required level of integrity within 72 hours." ITS LCO 3.6.1 ACTION A states with the containment inoperable restore the containment to an OPERABLE status within one hour. This changes the CTS by combining the listed abnormal degradation conditions and required actions that indicate a potentially inoperable containment into one condition, "Containment inoperable," and associated Required Action, eliminating the requirement to shut down the plant based on degraded conditions where containment may remain OPERABLE.

The purpose of CTS 3.6.1.6 ACTION a., ACTION b., and ACTION c. is to provide remedial actions when abnormal degradation of the structural integrity of the containment is observed. 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 Design Basis Accident (DBA) occurring during the repair period. This change is acceptable because ITS SR 3.6.1.2 ensures that the structural integrity of the containment will be maintained in accordance with the provisions of the Pre-Stressed Concrete Containment Tendon Surveillance Program that incorporates the requirements for the surveillance of the containment post-tensioned tendon system as specified in 10 CFR 50.55a(b)(2)(viii). Testing and Frequency are in accordance with the ASME Code, Section XI, Subsection IWL, and applicable addenda as required by 10 CFR 50.55a. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

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

3.6 CONTAINMENT SYSTEMS

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

3.6.1.1
3.6.1.2
3.6.1.6

LCO 3.6.1 Containment shall be OPERABLE.

Applicability
(3.6.1.1,
3.6.1.2 &
3.6.1.6)

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

ACTIONS

3.6.1.1 ACTION,
3.6.1.2 ACTION,
3.6.1.6 ACTION

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment inoperable.	A.1 Restore containment to OPERABLE status.	1 hour
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

4.6.1.1
4.6.1.2
4.6.1.6.1
4.6.1.6.2
4.6.1.6.3
1.7.d

4.6.1.6.1
4.6.1.6.2

SURVEILLANCE		FREQUENCY
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
SR 3.6.1.2	~~[~~Verify containment structural integrity in accordance with the Pre-Stressed Concrete Containment Tendon Surveillance Program.	In accordance with the Pre-Stressed Concrete Containment Tendon Surveillance Program ~~]~~

② ③

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.1, CONTAINMENT

1. The type of Containment (Atmospheric, Subatmospheric, Ice Condenser, and Dual) is deleted since it is unnecessary. This information is provided in NUREG-1431 to assist in identifying the appropriate Specification to be used as a model for the plant specific Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS) conversion but serves no purpose in a plant specific implementation.

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

3. The Improved Standard Technical Specification (ISTS) contains bracketed information and/or values that are generic to Westinghouse vintage plants or may not be applicable to all Westinghouse plants. The brackets are removed, and the proper plant specific information/value is provided.

4. Editorial correction made.

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

B 3.6 CONTAINMENT SYSTEMS

B 3.6.1~~A~~ Containment ~~(Atmospheric)~~ ①

BASES

BACKGROUND

The containment consists of the concrete reactor building, its steel liner, and the penetrations through this structure. The structure is designed to contain radioactive material that may be released from the reactor core following a design basis loss of coolant accident (LOCA). Additionally, this structure provides shielding from the fission products that may be present in the containment atmosphere following accident conditions.

The containment is a reinforced concrete structure with a cylindrical wall, a flat foundation slab ~~mat~~, and a shallow dome roof. The inside surface of the containment is lined with a carbon steel liner to ensure a high degree of leak tightness during operating and accident conditions. ②

For containments with ungrouted tendons, the cylinder wall is prestressed with a post tensioning system in the vertical and horizontal directions, and the dome roof is prestressed utilizing a three way post tensioning system.

The concrete reactor building is required for structural integrity of the containment under Design Basis Accident (DBA) conditions. The steel 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. 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:

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

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

BASES

BACKGROUND (continued)

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

c. ~~All~~ The equipment hatch~~es are~~ is closed and sealed, and ②

~~[~~d. The ~~pressurized~~ sealing mechanism associated with ~~a~~ each penetration (e.g., welds, bellows, or 0-rings) is OPERABLE~~, except as provided in LCO 3.6.[ ]~~. ~~]~~ 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 rate.

The DBAs that result in a challenge to containment OPERABILITY from high pressures and temperatures are a LOCA~~,~~ and a steam line break~~, and a rod ejection accident (REA)~~ (Ref. 2). ② In addition, release of significant fission product radioactivity within containment can occur from a LOCA or rod ejection accident ~~REA~~. In the DBA analyses, it is assumed that the containment is 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]~~ 0.20% of containment air weight per day (Ref. 3). ③ The ~~This~~ leakage rate, used to evaluate offsite doses resulting from accidents, is defined in 10 CFR 50, Appendix J, Option ~~[A][~~B~~]~~ (Ref. 1), as L_a: ③ 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]~~ 0.20% per day in the safety analysis at P_a = ~~[44.1]~~ 55 psig (Ref. 3). ③

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).

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.

BASES

LCO (continued)

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

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material into containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, containment is not required to be OPERABLE in MODE 5 to prevent leakage of radioactive material from containment. The requirements for containment during MODE 6 are addressed in LCO 3.9.4, "Containment Penetrations."

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 during MODES 1, 2, 3, and 4. This time period also ensures that the probability of an accident (requiring containment OPERABILITY) occurring during periods when containment is inoperable is minimal.

B.1 and B.2

If containment cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1

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

Failure to meet air lock ~~[~~and purge valve with resilient seal~~]~~ leakage limits specified in LCO 3.6.2 ~~[~~and LCO 3.6.3~~]~~ does not invalidate the ③ acceptability of these overall leakage determinations unless their contribution to overall Type A, B, and C leakage causes that to exceed limits. As left leakage prior to the first startup after performing a required Containment Leakage Rate Testing Program leakage test is required to be < 0.6 L_a for combined Type B and C leakage, and ~~[≤ 0.75 L_a for Option A]~~ ~~[~~≤0.75 L_a ~~for Option B]~~ for overall Type A leakage. ③ At all other times between required leakage rate tests, the acceptance criteria is based on an overall Type A leakage limit of ≤ 1.0 L_a. At ≤ 1.0 L_a the offsite dose consequences are bounded by the assumptions of the safety analysis.

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

~~REVIEWER'S NOTE~~ ④
~~Regulatory Guide 1.163 and NEI 94-01 include acceptance criteria for as-left and as-found Type A leakage rates and combined Type B and C leakage rates, which may be reflected in the Bases.~~

~~[~~SR 3.6.1.2 ③

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 Pre-Stressed Concrete Containment Tendon Surveillance Program. Testing and Frequency are in accordance with the ASME Code, Section XI, Subsection IWL (Ref. 4), and applicable addenda as required by 10 CFR 50.55a. ~~]~~ ③

BASES

REFERENCES

1. 10 CFR 50, Appendix J, Option ~~[A][~~B~~]~~. ③
2. UFSAR, Chapter ~~[15]~~ 14. ② ③
3. UFSAR, Section ~~[6.2]~~ 5.1. ② ③
4. ASME Code, Section XI, Subsection IWL.

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.1 Bases, CONTAINMENT

1. The heading for Improved Standard Technical Specification (ISTS) 3.6.1 includes parenthetical expressions (e.g., Atmospheric, Subatmospheric, Ice Condenser, and Dual) and identifiers (e.g., B 3.6.1A, B 3.6.1B). This identifying information is not included in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS). This information is provided in NUREG 1431 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. This unnecessary information has been removed.

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

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

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

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.1, CONTAINMENT

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

ATTACHMENT 2

ITS Section 3.6.2 – Containment Air Locks

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

A01

CONTAINMENT SYSTEMS

CONTAINMENT AIR LOCKS

LIMITING CONDITION FOR OPERATION

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

a. ~~Both doors closed except when the air lock is being used for normal transit entry and exit through the containment, or during the performance of containment air lock surveillance and/or testing requirements, then at least one air lock door shall be closed, and~~

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

LA01

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

ACTIONS Note 3 NOTE: Enter the ACTION of LCO 3.6.1.2, "Containment Leakage," when air lock leakage results in exceeding the overall containment leakage rate acceptance criteria.

Add proposed ACTIONS Note 1 L01

Add proposed ACTIONS Note 2 A03

ACTION:

Add proposed ACTION A Required Action Note 1

Add proposed ACTION A Required Action Note 2 L02

Add proposed Required Action A.1 Completion Time M01

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

1. Maintain at least the OPERABLE air lock door closed and ~~either restore the inoperable air lock door to OPERABLE status~~ within 24 hours or lock the OPERABLE air lock door closed; A04

Add proposed Required Action A.3 Note L02

2. Operation may then continue until performance of the next required overall air lock leakage test provided that the OPERABLE air lock door is verified to be locked closed at least once per 31 days;

Add proposed ACTION B L01

ACTION D 3. Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed Required Action C.1 M02

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

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

within 1 hour M01

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS

A05

4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

Add proposed SR 3.6.2.1 Note 1

Add proposed SR 3.6.2.1 Note 2

A06

SR 3.6.2.1 a. Following each closing, at the frequency specified in the Containment Leakage Rate Testing Program, by verifying that the seals have not been damaged and have seated properly by vacuum testing the volume between the door seals in accordance with approved plant procedures.

SR 3.6.2.1 b. By conducting overall air lock leakage tests in accordance with the Containment Leakage Rate Testing Program.

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

See ITS 3.6.1

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.*

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

ACTION:

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

SURVEILLANCE REQUIREMENTS

4.6.1.1 CONTAINMENT INTEGRITY shall be demonstrated:

a. In accordance with the Surveillance Frequency Control Program by verifying that all penetrations** not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their closed positions;

See ITS 3.6.3

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

See ITS 3.6.3

ACTIONS Note 1
RA A.1 Note 2
RA B.1 Note 2

* Exception may be taken under Administrative Controls for opening of valves and airlocks necessary to perform surveillance, testing requirements and/or corrective maintenance. In addition, Specification 3.6.4 shall be complied with.

** 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.

DISCUSSION OF CHANGES
ITS 3.6.2, CONTAINMENT AIR LOCKS

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN) 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. 5.0, "Standard Technical Specifications - Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

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

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

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

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

The purpose of the 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 provides appropriate compensatory action for each air lock. This change is acceptable because it clarifies existing requirements and better describes how the requirements are currently used. This change is designated as administrative because it does not result in technical changes to the CTS.

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

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

A05 CTS 4.6.1.3.a and CTS 4.6.1.3.b require air lock leakage rate testing in accordance with the Containment Leakage Rate Testing Program. ITS Surveillance Requirement (SR) 3.6.2.1 requires similar testing, but is modified by Note 1, which 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 stating that either air lock door is capable of providing a fission product barrier in the event of a Design Basis Accident (DBA).

The purpose of CTS 4.6.1.3.a and CTS 4.6.1.3.b 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.

A06 CTS 4.6.1.3.b requires demonstrating each containment air lock is OPERABLE by verifying leakage rates are in accordance with the Containment Leakage Rate Testing Program. ITS 3.6.2.1 requires the same test but adds a Note (SR 3.6.2.1 Note 2) requiring that the results be evaluated against acceptance criteria of ITS SR 3.6.1.1. This changes the CTS by specifically requiring verification of the air lock leakage rates against the Containment leakage rates.

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

MORE RESTRICTIVE CHANGES

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

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

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

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

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.6.1.3 states each containment air lock shall be OPERABLE with a) both doors closed except when the air lock is being used for normal transit entry and exit through the containment, or during the performance of containment air lock surveillance and/or testing requirements, then at least one air lock door shall be closed, and b) an overall air lock leakage rate in accordance with the Containment Leakage Rate Testing Program. ITS 3.6.2 does not contain this level of detail. This changes the CTS by moving details concerning what constitutes an OPERABLE containment air lock to the Bases.

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

LESS RESTRICTIVE CHANGES

L01 *(Category 4 – Relaxation of Required Action)* CTS 3.6.1.3 ACTION b states "With the containment air lock inoperable, except as the result of an inoperable air lock door, maintain at least one air lock door closed; restore the inoperable air lock to OPERABLE status within 24 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next six hours and in COLD SHUTDOWN within the following 30 hours." ITS 3.6.2 ACTION B provides a separate ACTION for inoperability of the air lock with an air lock interlock mechanism inoperable. ITS 3.6.2 ACTION B allows unlimited operation provided an OPERABLE door in the air lock is closed in 1 hour, locked closed in 24 hours, and verification is performed every 31 days that an OPERABLE air lock door in the air lock remains closed. For air lock doors in high radiation areas, this 31-day verification can be performed by administrative means. In addition, containment entry and exit through the air lock is permissible (i.e., the closed and locked door can be opened) under administrative control. Additionally, a new Note which applies to ITS 3.6.2 ACTIONS A, B, and C has been added. This Note, ITS 3.6.2 ACTIONS Note 1, states that entry and exit (i.e., the closed and locked OPERABLE air locks can be opened) is permissible to perform repairs on the affected air lock components. This changes the CTS by allowing unlimited operation, with certain restrictions, for air locks that are inoperable due to an inoperable lock mechanism and allows entry and exit to repair an inoperable door.

The purpose of CTS air lock ACTION b is to ensure the unit is not allowed to operate indefinitely in a condition such that containment cannot perform its safety function. The changes are acceptable because the proposed ACTION will still ensure the containment safety function is met. Because 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 because the time the door is opened is short and the opening is under administrative controls. These changes are designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L02 *(Category 4 – Relaxation of Required Action)* CTS 3.6.1.3 ACTION a states "With one containment air lock inoperable, maintain at least the OPERABLE air lock door closed and either restore the inoperable air lock door to OPERABLE status within 24 hours or lock the OPERABLE air lock door closed" and "operation may then continue until performance of the next required overall air lock leakage test provided that the OPERABLE air lock door is verified to be locked closed at least once per 31 days." ITS 3.6.2 ACTION A contains similar requirements, but contains two Required Action Notes stating "Required Actions A.1, A.2, and A.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered" and "Entry and exit is permissible for 7 days under administrative controls if both air locks are inoperable." Additionally, ITS 3.6.2 Required Action A.3 contains a Note stating "Air lock doors in high radiation areas may be verified locked closed by administrative means." This changes the CTS by ensuring that only the Required Actions and associated Completion Times of Condition C are required if both doors in the same air lock are inoperable, allowing use of the air lock for entry and exit for 7 days under administrative controls if both air locks are inoperable, and allowing air lock doors in high radiation areas to be verified locked closed by administrative means.

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

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

3.6 CONTAINMENT SYSTEMS

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

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

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

ACTIONS

---NOTES---

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

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

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

ACTION a
DOC L02

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~~]~~. --	
	A.1 Verify the OPERABLE door is closed in the affected air lock. AND	1 hour

②

ACTIONS (continued)

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

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME
		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 b DOC M02	C. One or more containment air locks inoperable for reasons other than Condition A or B.	C.1 Initiate action to evaluate overall containment leakage rate per LCO 3.6.1.	Immediately
		AND	
DOC M01		C.2 Verify a door is closed in the affected air lock.	1 hour
		AND	
		C.3 Restore air lock to OPERABLE status.	24 hours ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~ ②
ACTION a.3 ACTION b	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

SURVEILLANCE REQUIREMENTS

		SURVEILLANCE	FREQUENCY	
4.6.1.3.a 4.6.1.3.b DOC A05 DOC A06	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.c	SR 3.6.2.2	~~[~~ Verify only one door in the air lock can be opened at a time.	~~[24 months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]]~~	②

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.2, CONTAINMENT AIR LOCKS

1. The type of Containment (Atmospheric, Subatmospheric, Ice Condenser, and Dual) is deleted because it is unnecessary. This information is provided in NUREG-1431, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS) conversion but serves no purpose in a plant specific implementation.

2. The Improved Standard Technical Specification (ISTS) contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.

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

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)~~

BASES

BACKGROUND

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

The personnel access ~~Each~~ air lock is nominally a right circular cylinder, 9 ~~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. INSERT 1 Each air lock door has been designed and tested to certify its ability to withstand a pressure in excess of the maximum expected pressure following a Design Basis Accident (DBA) in containment. As such, closure of a single door supports containment OPERABILITY. Each of the doors contains double gasketed seals and local leakage rate testing capability to ensure pressure integrity. To effect a leak tight seal, the air lock design uses pressure seated doors (i.e., an increase in containment internal pressure results in increased sealing force on each door). ② ②

Each personnel air lock is provided with limit switches on both doors that provide control room indication of door position. Additionally, control room indication is provided to alert the operator whenever an air lock door interlock mechanism is defeated.

The containment air locks form part of the containment pressure boundary. As such, air lock integrity and leak tightness are 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

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 0.20 ~~[0.1]~~% of containment air weight per day (Ref. 2). The ~~This~~ leakage rate is defined in 10 CFR 50, Appendix J, Option B ~~A~~ (Ref. 1), as L_a = 0.20 ~~[0.1]~~% of containment air weight per day, the maximum allowable containment leakage rate at the calculated peak containment internal pressure P_a = 55 ~~[14.4]~~ psig ③ ② ③ ③

② INSERT 1

The personnel escape air lock has a nominal 5 ft diameter barrel, with a door at each end. Mechanical means are provided to enable the operation of either door from inside or outside of the containment structure, as well as from inside of the lock. A locking mechanism is installed and is kept locked except for entry by authorized personnel. The design of the locking mechanism will allow unrestricted egress from containment.

BASES

APPLICABLE SAFETY ANALYSES (continued)

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).

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 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

BASES

ACTIONS (continued)

expected to be open. After each entry and exit, the OPERABLE door must be immediately closed. If ALARA conditions permit, entry and exit should be via an OPERABLE air lock.

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

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 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.

ACTIONS (continued)

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

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

BASES

ACTIONS (continued)

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

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

Required Action C.2 requires that one door in the affected containment air lock must be verified to be closed 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 ~~[~~or in accordance with the Risk Informed Completion Time Program~~]~~. The specified time period is considered reasonable for restoring an inoperable air lock to OPERABLE status, assuming that at least one door is maintained closed in each affected air lock. ③

D.1 and D.2

If the inoperable containment air lock cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which 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 3.6.2.1

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

BASES

SURVEILLANCE REQUIREMENTS (continued)

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 ③

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

~~OR~~

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

BASES

SURVEILLANCE REQUIREMENTS (continued)

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

REFERENCES

1. 10 CFR 50, Appendix J, Option ~~[A][~~B~~]~~. ③
2. U FSAR, Section ~~[6.2]~~ 5.1 and Section 6.6. ② ③

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.2 BASES, CONTAINMENT AIR LOCKS

1. The type of Containment (Atmospheric, Subatmospheric, Ice Condenser, and Dual) is deleted because it is unnecessary. This information is provided in NUREG-1431, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS) conversion but serves no purpose in a plant specific implementation.

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

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

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

Specific No Significant Hazards Considerations (NSHCs)

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

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

ATTACHMENT 3

ITS Section 3.6.3 – Containment Isolation Valves

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

A01

CONTAINMENT SYSTEMS

3/4.6.4 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

LCO 3.6.3
SR 3.6.3.4

3.6.4 Each containment isolation valve shall be OPERABLE with isolation times less than or equal to required isolation times.

Applicability

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

ACTIONS Note 3

NOTES: 1. Enter applicable ACTIONS for systems made inoperable by containment isolation valves.

ACTIONS Note 4

2. Enter the ACTION of LCO 3.6.1.2, "Containment Leakage," when isolation valve leakage results in exceeding the overall containment leakage rate acceptance criteria.

A02

ACTION:

Add proposed ACTIONS Note 2

A03

With one or more isolation valves inoperable, ~~maintain at least one isolation valve OPERABLE in each affected penetration that is open~~ and either:

A04

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

1 hour for ACTION B

A03

ACTION A.1
ACTION B.1
ACTION C.1

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

L01

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

72 hours for ACTION C

L02

ACTION E

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

SURVEILLANCE REQUIREMENTS

A05

~~4.6.4.1 The isolation valves shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit by performance of a cycling test, and verification of isolation time.~~

A01

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

L03

L04

SR 3.6.3.6

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

an actual or simulated actuation

that is not locked, sealed, or otherwise secured in position, L05

a. Verifying that on ~~a Phase "A" Isolation test~~ signal, each ~~Phase "A"~~ isolation valve actuates to its isolation position;

automatic containment LA01

b. Verifying that on ~~a Phase "B" Isolation test~~ signal, each ~~Phase "B"~~ isolation valve actuates to its isolation position; and

that is not locked, sealed, or otherwise secured in position, L05

c. Verifying that on ~~a Containment Ventilation Isolation test~~ signal, each ~~purge, exhaust and instrument air bleed~~ valve actuates to its isolation position.

automatic containment isolation LA01

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

SR 3.6.3.4

4.6.4.3 The isolation time of each power-operated or automatic valve shall be determined to be within its limit when tested in accordance with the INSERVICE TESTING PROGRAM.

L05

3/4.6.5 DELETED

3/4.6.6 DELETED

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.*

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

ACTION:

Action B
Action E

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

SURVEILLANCE REQUIREMENTS

4.6.1.1 CONTAINMENT INTEGRITY shall be demonstrated:

Add proposed Required Actions A.2, C.2, and D.2 Notes 1 and 2 and SRs 3.6.3.2 and 3.6.3.3 Note — L06

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

a. In accordance with the Surveillance Frequency Control Program by verifying that all penetrations** not capable of being closed by OPERABLE containment automatic isolation valves, and 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 closed positions, or check valve with flow through the valve secured;

L05

L02

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

See ITS 3.6.2

See ITS 3.6.2

ACTIONS Note 1

* Exception may be taken under Administrative Controls for opening of valves and airlocks ~~necessary to perform surveillance, testing requirements and/or corrective maintenance~~. In addition, Specification 3.6.4 shall be complied with.

L07

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.

CONTAINMENT SYSTEMS

CONTAINMENT VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

SR 3.6.3.1 3.6.1.7 Each containment purge supply and exhaust isolation valve shall be administratively sealed closed and deactivated or the associated penetration(s) shall be isolated by flange.

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

ACTION:

ACTION A / ACTION E a. With Specification 3.6.1.7 not met, within 4 hours comply with Specification 3.6.1.7, or otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION D / ACTION E b. With a containment purge supply and/or exhaust isolation valve(s) having a measured leakage rate exceeding the limits of Specification 4.6.1.7.2, restore the inoperable valve(s) to OPERABLE status or isolate the penetrations such that the measured leakage rate does not exceed the limits of Specification 4.6.1.7.2 within 72 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

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

A06

SR 3.6.3.5 4.6.1.7.2 In accordance with the Surveillance Frequency Control Program, each containment purge supply and exhaust isolation valve with a resilient seal shall be demonstrated OPERABLE by verifying that the measured leakage rate is within limit ~~when pressurized to Pa~~. For each containment purge penetration isolated by a blind flange, the measured leakage rate shall be verified within limit in accordance with the Containment Leakage Rate Testing Program,

A07

See ITS 3.6.1

.

SR 3.6.3.1 Note * Performance of SR 4.6.1.7.1 is not required when the associated purge supply and/or exhaust penetration is isolated by blind flange.

DISCUSSION OF CHANGES
ITS 3.6.3, CONTAINMENT ISOLATION VALVES

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN) 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. 5.0, "Standard Technical Specifications - Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

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

A02 CTS 3.6.4 ACTIONS provide requirements to be taken for each inoperable containment isolation valve (CIV). ITS 3.6.3 includes an explicit Note (ACTION Note 2) that states, "Separate Condition entry is allowed for each penetration flow path." This Note provides instructions for the proper application of the ACTIONS for ITS compliance. This changes the CTS by providing explicit direction for using the ACTIONS when a CIV is inoperable.

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

A03 CTS 3.6.4 Action requires, in part, to maintain at least one isolation valve OPERABLE in each affected penetration that is open. CTS ACTION b and c allow 4 hours to isolate the affected penetration when one or more CIVs are inoperable. With two or more CIVs inoperable in an affected penetration that is open there is not an associated Completion Time; therefore, CTS 3.0.3 is entered immediately. ITS 3.6.3 Required Action B.1 allows 1 hour to isolate the affected penetration flow path when both valves in the same penetration flow path are inoperable. This changes the CTS by prescribing the time allowed to isolate the affected penetration when both CIVs in the same penetration are inoperable.

The purpose of the CTS 3.6.4 Action is to provide compensatory actions for inoperable CIVs. However, when both valves in the same penetration are inoperable, the time allowed to isolate the affected penetration is not prescribed and action must be taken immediately to maintain at least one isolation valve operable. Because the CIVs support the leak tightness of the containment, the time allowed to isolate the affected penetration should be the same as that allowed to restore an inoperable containment. This change is acceptable because the time allowed is consistent with the time allowed when the containment is inoperable and is the same time allowed to initiate action in CTS 3.0.3. This change is designated as administrative because it does not result in a technical change to the CTS.

A04 CTS 3.6.4 ACTION a requires that when one or more of the CIVs are inoperable to restore the inoperable valve(s) to OPERABLE status within 4 hours or take one of the other specified compensatory actions. 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 Limiting Condition for Operation (LCO) is always an available remedial 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.

A05 CTS 4.6.4.1 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. ITS does not include a Surveillance Requirement (SR) that specifies the testing requirements; however, SR 3.0.1 requires that SRs shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. In addition, the definition of OPERABLE – OPERABILITY states that system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s). This changes the CTS by deleting this post-maintenance Surveillance.

The purpose of CTS 4.6.4.1 is to verify OPERABILITY of CIVs following valve maintenance, repair, or replacement. This change is acceptable because the deleted SR is not necessary to ensure that the equipment used to meet the LCO can perform its required functions. Appropriate equipment will continue to be tested in a manner and at a Frequency necessary to give confidence that the equipment can perform its specified 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 as required under ITS SR 3.0.1, and required by the definition of OPERABLE with the OPERABILITY requirements for the CIVs that 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 administrative because it does not result in any technical changes to the CTS.

A06 CTS 4.6.1.7.2 requires performance of a leakage rate test for each containment purge supply and exhaust isolation valve in accordance with the Surveillance Frequency Control Program (SFCP). ITS SR 3.6.3.5 requires performance of a leakage rate test for containment purge valves with resilient seals at a Frequency of "In accordance with the Surveillance Frequency Control Program." This changes the CTS by specifying that the leakage rate test is only required to be performed on containment purge valves with resilient seals.

The purpose of CTS 4.6.1.7.2 is to verify the leakage rate of each containment purge supply and exhaust isolation valve is within limits. CTS 4.6.1.7.2 does not specify that the SR only applies to containment purge supply and exhaust isolation valves with resilient seals, because each of the purge supply and exhaust isolation valves at PTN has a resilient seal. Specifying within ITS SR 3.6.3.5 that the SR only applies to containment purge valves with resilient seals, aligns the text with the ISTS, and is consistent with the Bases justifying the increased leakage test Frequency for purge valves with resilient seals. This change is designated as administrative, because it does not result in a technical change to the CTS.

A07 CTS 4.6.1.7.2 requires the containment purge and exhaust valve leakage rate to be less than or equal to 0.05 L_a when pressurized to P_a. CTS 6.8.4.h provides the requirements for the Containment Leakage Rate Testing Program, and CTS 6.8.4.h.3 states that the overall air lock leakage acceptance criteria is $\leq 0.05\ L_a$, when pressurized to P_a. ITS SR 3.6.3.5 requires performance of the containment purge and exhaust valve leakage test but does not include the value for the leakage limit but only requires leakage rate testing to be performed. However, ITS 5.5.13.d.3) requires that the overall air lock leakage rate is $\leq 0.05\ L_a$ when tested at $\geq P_a$. This changes the CTS by removing duplicate information associated with the containment purge and exhaust leakage rate limit.

The removal of these details from CTS 4.6.1.7.2 is acceptable because this information is not necessary to be included in ITS SR 3.6.3.5 to provide adequate protection of public health and safety. The ITS still retains the requirement to verify that the containment purge and exhaust valves leakage is within the associated limits. This change is designated as an administrative change because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.6.4.2 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 3.6.3.8 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 SR to the Bases.

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

L01 *(Category 3 – Relaxation of Completion Time)* CTS 3.6.4 ACTIONS b and c state that with one or more of the containment isolation valve(s) inoperable, isolate each affected penetration within 4 hours by use of one deactivated automatic valve secured in the isolation position, closed manual valve, or blind flange. ITS 3.6.3 ACTION C, which only applies to penetration flow paths with only one CIV, requires that with one or more penetration flow paths with CIV inoperable, the penetration flow path be isolated by means similar to those specified in the CTS within 72 hours. This changes the CTS by extending the Completion Time from 4 hours to 72 hours when the inoperable containment isolation valve is in a single valve penetration associated with a closed system.

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 CIV 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 Design Basis Accident (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.

L02 *(Category 4 - Relaxation of Required Action)* CTS 3.6.4 ACTIONS b and c state that with one or more of the CIV(s) inoperable, isolate each affected penetration by use of at least one deactivated automatic valve secured in the isolation position (ACTION b), closed manual valve (ACTION c), or blind flange (ACTION c). 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 when one or more penetration flow paths with one CIV 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. In addition, ITS 3.6.3 Required Action A.2 requires a periodic verification that the affected penetration remains isolated by one of the methods required by ITS 3.6.3 Required Action A.1. This changes the CTS by allowing penetration flow paths with two CIVs 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 3.6.4 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.

L03 *(Category 7 – Relaxation of Surveillance Frequency Change - Non-24 month Change)* CTS 4.6.4.2 states, in part, that each isolation valve shall be demonstrated OPERABLE during COLD SHUTDOWN or REFUELING MODE in accordance with the SFCP by verifying the valve actuates on an isolation signal. ITS SR 3.6.3.6 states to verify each automatic CIV that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated signal without requiring the verification to be perform in COLD SHUTDOWN or REFUELING MODES. This changes the CTS by removing the restriction on surveillance performance during specific MODES.

The purpose of CTS 4.6.4.2 is to demonstrate OPERABILITY of automatic CIVs. The proposed change is acceptable because it does not change the method of test or frequency of the affected surveillances. The proposed change only deletes the requirement to perform this testing during shutdown or refueling conditions. In addition, allowing this testing to be performed either at refueling, shutdown or at power does not affect the applicable safety analysis conclusions and allows shutdown activities to be planned which will aid in risk reduction and increase equipment availability during shutdowns. Thus, the proposed change will continue to provide adequate assurance the required components are routinely tested to ensure system operability while providing some additional flexibility in planning and scheduling the required testing. In addition, due to system designs that allow for safe testing at power, the proposed change will not adversely affect the safe operation of the plant. The proposed change is designated as less restrictive because less stringent SRs are being applied in the ITS than were applied in the CTS.

L04 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.6.4.2 requires verification of the containment isolation valve actuation on specific isolation test signals; Phase A, Phase B, and Containment Ventilation. ITS SR 3.6.3.8 specifies that the signal may be either an "actual" or a "simulated" actuation signal. This changes the CTS by allowing the use of either an actual or a simulated signal for the test.

The purpose of CTS 4.6.4.2 is to ensure that the containment isolation valves (Phase A, Phase B, and Containment Ventilation valves) operate correctly upon receipt of an actuation signal. This change is acceptable because it has been determined that the relaxed SR acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its specified safety 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 also allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. This change is designated as less restrictive because less stringent SRs are being applied in the ITS than were applied in the CTS.

L05 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.6.4.2 requires verification that each containment isolation valve actuates to its isolation position. CTS 4.6.1.1.a requires verification that all penetrations not capable of being closed by an OPERABLE CIV and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their closed positions except for valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed, or otherwise secured in the closed position. ITS SR 3.6.3.2 requires verification that 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 CIVs that are open under administrative controls. ITS SR 3.6.3.8 requires verification that each automatic CIV 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 that are locked, sealed, or otherwise secured in position to have the valve position verified if outside containment or to be tested to verify that the valve automatically actuates to its isolation position.

The purpose of CTS 4.6.1.1.a and CTS 4.6.4.2 is to provide assurance that the penetration required to be isolated in the event of a DBA isolates containment properly. This change is acceptable because it has been determined that the relaxed SR acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its specified safety functions. Valves already in the isolated position and are locked, sealed, or otherwise secured in position are not required to have the position verified or to be tested to automatically actuate because, in case of a DBA, the valves are already in the required position and secured to prevent changing from the required position. This change is designated as less restrictive because less stringent SRs are being applied in the ITS than were applied in the CTS.

L06 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.6.1.1.a. requires verification that specified containment penetrations are closed. ITS 3.6.3 Required Actions A.2, 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 be performed using administrative means. This changes the CTS by allowing certain valves and blind flanges to not require physical local verification.

The purpose of CTS 4.6.1.1.a is to provide assurance that containment penetrations are closed when necessary. This change is acceptable because it has been determined that the relaxed SR acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its specified safety functions. The position of CIVs 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 operation of these valves. 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 SRs are being applied in the ITS than were applied in the CTS.

L07 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.6.1.1 states that the primary containment integrity shall be maintained with an exception that under administration control valves may be opened when necessary to perform surveillance, testing requirements, and/or corrective maintenance. ITS 3.6.3 Actions Note 1 contains a similar exception but does not include limiting the opening to those activities for performing surveillance, testing requirements, and/or corrective maintenance. This changes the CTS by eliminating the LCO exception restriction of opening valves under administrative control to only when performing surveillance, testing requirements, and/or corrective maintenance.

The purpose of CTS 3.6.1.1 is to ensure that containment integrity is maintained. This is achieved, in part, by requiring that all penetrations not capable of being isolated by an OPERABLE automatic CIV and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in the closed positions. However, there are conditions when an isolation valve must be opened. CTS 3.6.1.1 includes Note that allows opening of these valves under administrative controls but restricting the opening to when necessary to perform surveillance, testing requirements, and/or corrective maintenance. Although these conditions are the most likely to require opening of these valves, other conditions may necessitate valve opening. Removing this restriction is acceptable because the open of a valve will still be under administrative control and should only be for a short period to accomplish a specific task. This change is designated as less restrictive because a less stringent LCO is being applied in the ITS than was applied in the CTS.

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

3.6 CONTAINMENT SYSTEMS

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

3.6.4 LCO 3.6.3 Each containment isolation valve (CIV) shall be OPERABLE.

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

ACTIONS

supply and exhaust

--NOTES--

4.6.1.1.a * 3.6.1.7 1. Penetration flow path(s) [except for ~~[42] inch~~ purge valve flow paths] may be unisolated intermittently under administrative controls. ③

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

3.6.4 NOTE 1 3. Enter applicable Conditions and Required Actions for systems made inoperable by containment isolation valves.

3.6.4 NOTE 2 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.

ACTIONS (continued)

3.6.4 Actions b and c,
3.6.1.7 Action a

DOC L02

CONDITION	REQUIRED ACTION	COMPLETION TIME
INSERT 1 A. ~~[~~ One or more penetration flow paths with one containment isolation valve inoperable ~~[~~for reasons other than Condition~~[s] E [and F]]~~. D ~~AND~~ ~~Containment isolation valve pressure boundary intact.~~	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 ~~for Category 1 CIVs~~ ③ ④ ~~AND~~ ③ ~~8 hours for Category 2 CIVs~~ ~~AND~~ ~~12 hours for Category 3 CIVs~~ ~~AND~~ ~~24 hours for Category 4 CIVs~~ ~~AND~~ ~~48 hours for Category 5 CIVs~~ ~~AND~~ ~~72 hours for Category 6 CIVs~~ ~~AND~~ ~~7 days for Category 7 CIVs~~ ~~[~~OR ③ In accordance with the Risk Informed Completion Time Program~~]~~

3.6.4 Actions b and c,
3.6.1.7 Action a

④

INSERT 1

------------NOTE------------
Only applicable to penetration flow paths with two or more containment isolation valves.

ACTIONS (continued)

DOC L07

4.6.1.1.a
Including
Note **

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

ACTIONS (continued)

④

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~B. [One or more penetration flow paths with one containment isolation valve inoperable [for reasons other than Condition[s] E [and F]].~~ ~~AND~~ ~~Containment isolation valve pressure boundary not intact.~~	~~B.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 for Category 8 CIVs~~ ~~AND~~ ~~8 hours for Category 9 CIVs~~ ~~AND~~ ~~12 hours for Category 10 CIVs~~ ~~AND~~ ~~24 hours for Category 11 CIVs~~ ~~AND~~ ~~48 hours for Category 12 CIVs~~ ~~AND~~ ~~72 hours for Category 13 CIVs~~ ~~AND~~ ~~7 days for Category 14 CIVs~~ ~~[OR~~ ~~In accordance with the Risk Informed Completion Time Program]~~

ACTIONS (continued)

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

④

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
3.6.4 Actions b and c, 3.6.1.1 Action ~~C~~ B. ------------NOTE------------ Only applicable to penetration flow paths with two ~~[~~or more~~]~~ containment isolation valves. --------------------------------- One or more penetration flow paths with two ~~[~~or more~~]~~ required containment isolation valves inoperable ~~[~~for reasons other than Condition~~[s]~~ ~~E [and F]]~~ D. INSERT 2	~~C~~ 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 ④ ③ ③ ③
~~D. Two or more penetration flow paths with one containment isolation valve inoperable [for reasons other than Condition[s] E [and F]].~~	~~D.1 Isolate all but one penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.~~	~~4 hours~~ ④
3.6.1.7 Action b ~~E~~ D. ~~[~~ One or more ~~shield building bypass leakage [or~~ purge valve leakage~~]~~ not within limit.	~~E~~ D.1 Restore leakage within limit.	~~4 hours for shield building bypass leakage~~ ~~AND~~ ~~24~~ 72 hours ~~for purge valve leakage]~~ ④ ③
~~F. [One or more penetration flow paths with one or more containment purge valves not within purge valve leakage limits.~~	~~F.1 Isolate the affected penetration flow path by use of at least one [closed and de-activated automatic valve, closed manual valve, or blind flange].~~ ~~AND~~	~~24 hours~~ ③

INSERT 2

3.6.4 Actions b and c,
DOC L02

C. ------------NOTE------------ Only applicable to penetration flow paths with only one containment isolation valve and a closed system. --------------------------------- One or more penetration flow paths with one containment isolation valve inoperable.	C.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	72 Hours OR In accordance with the Risk Informed Completion Time Program
	AND	
	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 following isolation

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
		~~F.2 -------------NOTES------------~~ ~~1. Isolation devices in high radiation areas may be verified by use of administrative means.~~ ~~2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.~~ ~~-----------------------------------~~		③
		~~Verify the affected penetration flow path is isolated.~~	~~Once per 31 days for isolation devices outside containment~~ ~~AND~~ ~~Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment~~	
		~~AND~~		
		~~F.3 Perform SR 3.6.3.7 for the resilient seal purge valves closed to comply with Required Action F.1.~~	~~Once per [92] days]~~	③
3.6.4 Action d, 3.6.1.7 Actions a and b, 3.6.1.1 Action	~~G~~E. Required Action and associated Completion Time not met.	~~G~~E.1 Be in MODE 3.	6 hours	④
		AND		
		~~G~~E.2 Be in MODE 5.	36 hours	

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
3.6.1.7, 4.6.1.7.1	SR 3.6.3.1	~~[~~ Verify each ~~[42] inch~~ purge supply and exhaust valve is administratively sealed closed~~,~~ and deactivated or the associated penetration(s) isolated by flange ~~except for one purge valve in a penetration flow path while in Condition E of this LCO~~.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~]	⑤
	~~SR 3.6.3.2~~	~~[Verify each [8] inch 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.~~	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~]	⑤ ③
4.6.1.1.a DOC L07 DOC L06	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~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	⑤ ③

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
.4.6.1.1.a Note **	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	⑤
3.6.4, 4.6.4.3	SR 3.6.3.~~5~~ 4	Verify the isolation time of each automatic power operated containment isolation valve is within limits.	~~[~~In accordance with the INSERVICE TESTING PROGRAM ~~OR~~ ~~[92 days]~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~	⑤ ③
	~~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~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~	⑥

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
4.6.1.7.2	SR 3.6.3.~~7~~ 5	INSERT 3 ~~[~~ Perform leakage rate testing for containment purge valves with resilient seals.	~~[184 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ ~~AND~~ ~~Within 92 days after opening the valve]~~	⑤ ③ ⑥ ③
4.6.4.2 DOC LA01 DOC L06	SR 3.6.3.~~8~~ 6	Verify each automatic containment isolation valve that is not locked, sealed or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	⑤ ③ ⑥
	~~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~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]]~~	⑥

INSERT 3

4.6.1.7.2

--------------------------------NOTE------------------------------

Not required to be met for valves in penetrations isolated by blind flanges.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
~~SR 3.6.3.10~~	~~[Verify each [ ] inch containment purge valve is blocked to restrict the valve from opening > [50]%.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]]~~ ⑤ ⑥ ③
~~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]~~ ③

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.3, CONTAINMENT ISOLATION VALVES

1. The type of Containment (Atmospheric, Subatmospheric, Ice Condenser, and Dual) is deleted because it is unnecessary. This information is provided in NUREG-1431, Improved Standard Technical Specification – Westinghouse Plants, Rev. 5.0 (ISTS), to assist in identifying the appropriate Specification to be used as a model for the plant specific Improved Technical Specifications (ITS) conversion but serves no purpose in a plant specific implementation.

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

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

4. The ISTS includes NRC approved (75 FR 39991) TSTF-446, "Risk Informed Evaluation of Extensions to Containment Isolation Valve Completion Times (WCAP-15791)," (ADAMS Accession No. ML080510164). Florida Power & Light (FPL) is not requesting approval to adopt TSTF-446 because FPL has adopted TSTF-505, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b," at Turkey Point Unit 3 and Unit 4 (PTN) (ADAMS Accession No. ML18270A429). TSTF-446's added information is removed, the deleted information is restored, and the proper plant specific information is inserted to reflect the current licensing basis. Additionally, due to the insertion of ACTION C and the deletion of ISTS 3.6.3 ACTIONS B and D (reversing changes made under TSTF-446), subsequent ACTIONS have been renumbered.

5. ISTS Surveillance Requirement (SR) 3.6.3.1 is a bracketed SR. The ISTS contains bracketed information and/or values that are generic to Westinghouse vintage plants. Turkey Point Unit 3 and Unit 4 have 48-inch purge supply valves and 54-inch purge exhaust valves for containment purge. Analysis has demonstrated their ability to close during a Loss of Coolant Accident (LOCA) to limit offsite dose if blocks are installed limiting open travel. Because the containment purge valves are able to close during a LOCA when blocked this SR is not necessary. Additionally, subsequent Surveillances were renumbered because of the deletion of ISTS SR 3.6.3.1 and other surveillances that are not applicable.

6. ISTS SR 3.6.3.6 and SR 3.6.3.9 are bracketed SRs. The ISTS contains bracketed information and/or values that are generic to Westinghouse vintage plants. Because PTN does not have weight or spring-loaded check valves, these Surveillances is not required. Additionally, subsequent Surveillances were renumbered because of the deletion of ISTS SR 3.6.3.6 and SR 3.6.3.9.

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 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. These barriers (typically containment isolation valves) make up the Containment Isolation System (Ref. 1). ②

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 ~~purge and exhaust~~ instrument air bleed valves receive an isolation signal on a containment high radiation condition. 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). ③

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.

BACKGROUND (continued)

~~Shutdown~~ Containment Purge System ~~([42] inch purge valves)~~ ④

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 ⑤ valves ~~in some units~~ are not qualified for automatic closure from their ② fully (90 degrees) open position under DBA conditions. ~~Therefore,~~ the ~~[42] inch~~ purge ⑤ valves are ~~normally~~ maintained closed in MODES 1, 2, 3, and 4 to ensure the containment boundary is maintained.

~~Minipurge System ([8] inch purge valves)~~ ④

The ~~Minipurge~~ Containment Purge 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 instrument air bleed valves ~~used in the Minipurge System~~ are designed to meet the ⑤ ② requirements for automatic containment isolation valves, these valves may be opened as needed in MODES 1, 2, 3, and 4.

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.

The DBAs that result in a release of radioactive material within containment are a loss of coolant accident (LOCA) and a rod ejection accident (Ref. ~~1~~ 2). ② 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~~. ②

BASES

APPLICABLE SAFETY ANALYSES (continued)

The DBA analysis assumes that, within ~~60~~ 8 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~~ 8 seconds includes signal delay~~, diesel generator startup (for loss of offsite power),~~ and containment isolation valve stroke times. ⑥

~~[~~ 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 are pneumatically operated spring closed~~, respectively~~. This arrangement was designed to preclude common mode failures from disabling both valves on a purge line. ~~]~~ INSERT 1 ②

~~[~~ The purge valves ~~may be~~ are unable to automatically 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. ~~]~~ ② ⑦

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

LCO

Containment isolation valves form a part of the containment boundary. The containment isolation 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 and deactivated ~~[or have blocks installed to prevent full opening]~~. ~~[Blocked purge valves also actuate on an automatic signal.]~~ The valves covered by this LCO are listed along with their associated stroke times in the FSAR (Ref. ~~2~~ 3). ⑦ ②

The normally closed isolation valves are considered OPERABLE when manual valves are closed, automatic valves are de-activated and secured in their closed position, blind flanges are in place, and closed systems are intact. These passive isolation valves/devices are those listed in Reference ~~2~~ 3. ②

②

INSERT 1

However, each containment purge supply and exhaust isolation valve is required to be administratively sealed closed and deactivated or the associated penetration(s) is required to be isolated by a blind flange with double o-rings. Maintaining the subject valves administratively sealed closed and deactivated or isolating by blind flange assures the penetration(s) will perform their containment ventilation isolation function without reliance on ESFAS instrumentation.

BASES

LCO (continued)

Purpose valves with resilient seals ~~[and secondary containment bypass valves]~~ must meet additional leakage rate requirements. The other containment isolation valve leakage rates and blind flange leakage rates are addressed by LCO 3.6.1, "Containment," ~~as Type C testing~~. ⑦ ②

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, "Containment Penetrations."

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.~~ ⑤ ②

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

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

BASES

ACTIONS (continued)

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.

~~-------------------------------REVIEWERS NOTE-----------------------------------~~
~~Conditions A and B may be combined into one Condition that addresses both the containment isolation valve pressure boundary intact and containment isolation valve pressure boundary not intact by specifying the limiting Completion Time for each configuration identified in Tables D-1, D-2, and D-3 of Reference 4.~~
~~---~~ ⑧

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

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

~~Condition A is applicable to penetration flow paths with two [or more] containment isolation valves, and penetration flow paths with only one containment isolation valve and a closed system. The closed system must meet the requirements of Reference 3~~. ⑨

In the event one containment isolation valve in one or more penetration flow paths is inoperable, ~~[~~except for purge valve ~~or shield building bypass~~ ⑦ leakage not within limit~~], and the containment isolation valve pressure boundary is intact~~, the affected penetration flow path must be isolated. ~~The containment isolation valve pressure boundary is considered to be intact when the inoperable containment isolation valve is capable of maintaining the boundary between the contained fluid and the containment or outside atmosphere. An example of when a containment isolation valve would be inoperable and the pressure boundary is considered to be intact is when work is being performed on a valve actuator.~~ ⑨ 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

BASES

ACTIONS (continued)

4 hours

one to containment. Required Action A.1 must be completed within ~~the Completion Time specified for each Category of containment isolation valve identified in [a licensee controlled document] [~~or is determined in accordance with the Risk Informed Completion Time Program~~]~~. ~~The Completion Time is justified in Reference 4.~~ ⑨

INSERT 2

~~------------------------------REVIEWERS NOTE-----------------------------------~~

~~Conditions A and B may be combined into one Condition that addresses both the containment isolation valve pressure boundary intact and containment isolation valve pressure boundary not intact by specifying the limiting Completion Time for each configuration identified in Tables D-1, D-2, and D-3 of Reference 4.~~

~~The plant specific determination of the containment isolation valve Completion Time categories is performed by comparing the plant specific penetration types to the generic penetration types evaluated that are identified in Tables D-1, D-2, and D-3 of Reference 4.~~

~~The plant specific application of the generic analysis that justified the generic Completion Time categories is discussed in Section 9.0 of Reference 4.~~ ⑧

~~Plant specific Completion Time categories may also be calculated in lieu of the generic Completion Time categories. This approach is discussed in Section 10.0 of Reference 4.~~

~~For plants not adopting the risk-informed extended Completion Time for containment isolation valves, a Completion Time of 4 hours is maintained. 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. A Condition for one or more penetration flow paths with one containment isolation valve inoperable for penetrations with one containment isolation valve and a closed system would be required.~~

~~---~~

For affected penetration flow paths that cannot be restored to OPERABLE status within the specified Completion Time and that have been isolated in accordance with Required Action A.1, the affected penetration flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that containment penetrations required to be isolated following an accident and no longer capable of being automatically isolated will be in the isolation position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification that those isolation devices

⑨ INSERT 2

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.

BASES

ACTIONS (continued)

outside containment and capable of being mispositioned are in the correct position. The Completion Time of "once per 31 days ~~[~~following isolation~~]~~ for isolation devices outside containment" is appropriate considering the fact that the devices are operated under administrative controls and the probability of their misalignment is low. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

INSERT 3 ⑨

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 and B.2~~

~~Condition B is applicable to penetration flow paths with two [or more] containment isolation valves, and penetration flow paths with only one containment isolation valve and a closed system. The closed system must meet the requirements of Reference 3.~~

~~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,] and the containment isolation valve pressure boundary is not intact, the affected penetration flow path must be isolated. The containment isolation valve pressure boundary is considered not to be intact when the inoperable containment isolation valve is not capable of maintaining the boundary between the contained fluid and the containment or outside atmosphere. 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~~ ⑨

⑨ INSERT 3

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.

BASES

ACTIONS (continued)

~~accordance with Required Action B.1, the device used to isolate the penetration should be the closest available one to containment. Required Action B.1 must be completed within [the Completion Time specified for each Category of containment isolation valve identified in [a licensee controlled document] [or is determined in accordance with the Risk Informed Completion Time Program]. The Completion Time is justified in Reference 4.~~ ⑨

~~-----------------------------------REVIEWERS NOTE-----------------------------------~~
~~Conditions A and B may be combined into one Condition that addresses both the containment isolation valve pressure boundary intact and containment isolation valve pressure boundary not intact by specifying the limiting Completion Time for each configuration identified in Tables D-1, D-2, and D-3 of Reference 4.~~

~~The plant specific determination of the containment isolation valve Completion Time categories is performed by comparing the plant specific penetration types to the generic penetration types evaluated that are identified in Tables D-1, D-2, and D-3 of Reference 4.~~

~~The plant specific application of the generic analysis that justified the generic Completion Time categories is discussed in Section 9.0 of Reference 4.~~ ⑧

~~Plant specific Completion Time categories may also be calculated in lieu of the generic Completion Time categories. This approach is discussed in Section 10.0 of Reference 4.~~

~~For plants not adopting the risk-informed extended Completion Time for containment isolation valves, a Completion Time of 4 hours is maintained. 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. A Condition for one or more penetration flow paths with one containment isolation valve inoperable for penetrations with one containment isolation valve and a closed system would be required.~~
~~---~~

~~For affected penetration flow paths that cannot be restored to OPERABLE status within the specified Completion Time and that have been isolated in accordance with Required Action B.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 an isolated position should an event occur. This Required Action does not require any testing or device~~ ⑨

BASES

ACTIONS (continued)

~~manipulation. Rather, it involves verification that those isolation devices outside containment and capable of being mispositioned, are in the correct position. The Completion Time of "once per 31 days [following isolation] for isolation devices outside containment" is appropriate considering the fact that the devices are operated under administrative controls and the probability of their misalignment is low. For 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.~~ ⑨

~~Required Action B.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 the 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.]~~ ⑨

~~C~~B.1 ⑩

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 ~~C~~B.1, the affected penetration must be verified to be isolated on a periodic basis per Required Action A.2 ~~or B.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. ⑦ ⑩

BASES

ACTIONS (continued)

B

Condition ~~C~~ is modified by a Note indicating this Condition is only applicable to penetration flow paths with two ~~[~~or more~~]~~ containment isolation valves. INSERT 4 ⑩ ⑦ ⑨

INSERT 5 ⑨ ⑨

~~D. 1~~

~~--------------------------------REVIEWERS NOTE-----------------------------------~~
~~The analysis in Reference 4 evaluated each CIV in each penetration individually and determines an acceptable Completion Time based on the ICLERP and ΔLERF for each CIV. It is assumed that only a single CIV is inoperable in one penetration flow path. If plant specific analyses are performed to evaluate multiple inoperable CIVs in separate penetration flow paths, Condition D should be revised to reflect the plant specific analyses.~~
~~---~~ ⑧

~~In the event one containment isolation valve in two or more penetration flow paths is inoperable [except for purge valve or shield building bypass leakage not within limit], all but one of the affected penetration flow path(s) 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 D.1, the device used to isolate the penetration should be the closest available one to containment. Required Action D.1 must be completed within 4 hours. For subsequent containment isolation valve inoperabilities, the Required Action and Completion Time continue to apply to each additional containment isolation valve inoperability, with the Completion Time based on each subsequent entry into the Condition consistent with Note 2 to the ACTIONS Table (e.g., for each entry into the Condition). Each containment isolation valve(s) that is (are) declared inoperable for subsequent Condition D entries shall meet the Required Action and Completion Time. For the penetration flow paths isolated in accordance with Required Action D.1, the affected penetration(s) must be verified to be isolated on a periodic basis per Required Action A.2 [or B.2], which remains in effect. This periodic verification is necessary to assure that the penetrations requiring isolation following an accident are isolated. 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.~~ ⑨

⑨ INSERT 4

Condition A of this LCO addresses the condition of one containment isolation valve inoperable in this type of penetration flow path.

⑨ INSERT 5

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.

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. 2. This Note is necessary because this Condition is written to specifically address those penetration flow paths in a closed system.

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 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.

BASES

ACTIONS (continued)

D
~~[E~~.1 ⑩

With the ~~shield building bypass leakage rate (SR 3.6.3.11) [or~~ purge valve leakage rate (SR 3.6.3.5 ~~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 72 ~~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.~~]~~ ⑦ ⑦ ⑩ ⑨

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

~~The options (in both ACTION E and ACTION F) for purge valve leakage, are based primarily on the design - if leakage rates can be measured separately for each purge valve, ACTION F is intended to apply. This would be required to be able to implement Required Action F.3. Should the design allow only for leak testing both purge valves simultaneously, then the Completion Time for ACTION E should include the "24 hours for purge valve leakage" and ACTION F should be eliminated.]]~~
~~--~~ ⑧

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

~~In the event one or more containment purge valves in one or more penetration flow paths are not within the purge valve leakage limits, purge valve leakage must be restored to within limits, or the affected penetration 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 F.1~~ ⑦

①

BASES

ACTIONS (continued)

~~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.~~ ⑦

~~In accordance with Required Action F.2, this penetration flow path must be verified to be isolated on a periodic basis. The periodic verification is necessary to ensure that containment penetrations required to be isolated following an accident, which are no longer capable of being automatically isolated, will be in the isolation position should an event occur. This Required Action does not require any testing or valve manipulation. Rather, it involves verification that those isolation devices outside 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.~~ ⑦

~~For the containment purge valve with resilient seal that is isolated in accordance with Required Action F.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. 5). 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.~~ ⑦

~~Required Action F.2 is modified by two Notes. Note 1 applies to isolation devices located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned.]~~ ⑦

②

BASES

ACTIONS (continued)

E

~~G~~.1 and ~~G~~.2 ⑩

If the Required Actions and associated Completion Times are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 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 3.6.3.1 ⑦

and deactivated or the associated penetration(s) isolated by flange

Elimination of the automatic closure signal prevents

Each ~~[42] inch~~ containment purge valve is required to be verified sealed closed. 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 of 31 days is a result of an NRC initiative, Generic Issue B-24 (Ref. 6), 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.~~ ⑩ ⑦

~~OR~~

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

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]]~~ ⑧

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~[SR 3.6.3.2~~ ⑩

~~This SR ensures that the minipurge valves are closed as required or, if open, open for an allowable reason. If a purge valve is open in violation of this SR, the valve is considered inoperable. If the inoperable valve is not otherwise known to have excessive leakage when closed, it is not considered to have leakage outside of limits. The SR is not required to be met when the minipurge valves are open for the reasons stated. 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 3.6.3.3.~~

~~OR~~

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

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~ ⑧
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]]~~

SR 3.6.3.2~~3~~ ⑩

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 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.~~ ⑦

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~OR~~ ⑦

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

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~ ⑧

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.

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 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 ⑩

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.

BASES

SURVEILLANCE REQUIREMENTS (continued)

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 ⑩

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.

~~-------------------------------REVIEWER'S NOTE-------------------------------~~
~~If the testing is within the scope of the licensee's INSERVICE TESTING PROGRAM, the Frequency "In accordance with the INSERVICE TESTING PROGRAM" should be used. Otherwise, the periodic Frequency of 92 days or the reference to the Surveillance Frequency Control Program should be used.~~
~~--~~ ⑧

~~[~~ The ~~[~~isolation time and~~]~~ Frequency of this SR is in accordance with ~~[~~the INSERVICE TESTING PROGRAM~~] [92 days~~. ⑦

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.]]~~ ⑦

~~-------------------------------REVIEWER'S NOTE-------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~ ⑧

~~[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 valves will remain closed when the inside containment atmosphere~~ ⑦

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~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.~~ ⑦

~~OR~~

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

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ ⑧
~~---]]~~

~~[~~ SR 3.6.3.~~7~~ 5 ⑩

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. ⑦ ~~[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. 5).~~ ⑦

~~OR~~ INSERT 6

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

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ ⑧
~~---]~~

~~Additionally, this SR must be performed within 92 days after opening the valve. The 92 day Frequency was chosen recognizing that cycling the~~ ⑦

② **INSERT 6**

The Note applies to containment purge valves with resilient seals located in penetrations that are isolated by a blind flange. These penetrations rely on the blind flange to limit the leakage rate to within limits. Therefore, testing the containment purge valves located in penetrations that are isolated by a blind flange is not needed to ensure the leakage rate for the penetration is within limits.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~valve could introduce additional seal degradation (beyond that occurring to a valve that has not been opened). Thus, decreasing the interval is a prudent measure after a valve has been opened.]~~ ⑦

SR 3.6.3.6~~8~~ ⑩

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] 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 this Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~ ⑦

~~OR~~

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

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~ ⑧

~~[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.~~ ⑦

①

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~OR~~

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

⑦

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

⑧

~~[SR 3.6.3.10~~

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.~~
~~--~~

⑧

~~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.~~

~~OR~~

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

⑦

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

⑧

②

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~[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. 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.~~ ⑦

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

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Unless specifically exempted.]]~~ ⑧
~~--~~

REFERENCES

2 ~~1~~. U FSAR, Section ~~[15]~~ 14. ② ⑦

1 ~~2~~. U FSAR, Section ~~[6.2]~~ 6.6. ② ⑦

3 FSAR, Table 6.6-1 ②

~~3. Standard Review Plan 6.2.4.~~ ⑪

~~4. WCAP-15791-A, Rev. 2, "Risk-Informed Evaluation of Extensions to Containment Isolation Valve Completion Times," [Date to be supplied later].~~ ⑨

~~5. Generic Issue B-20, "Containment Leakage Due to Seal Deterioration."~~ ⑦

~~6. Generic Issue B-24.~~ ⑦

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.3 BASES, CONTAINMENT ISOLATION VALVES

1. The type of Containment (Atmospheric, Subatmospheric, Ice Condenser, and Dual) is deleted since it is unnecessary. This information is provided in NUREG-1431, Improved Standard Technical Specification – Westinghouse Plants, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation.

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

3. ISTS 3.6.3 Background section describes the signal that actuates containment ventilation isolation and lists the valves the containment ventilation isolation signal actuates. The containment ventilation isolation signal does not close the containment purge valves containment ventilation isolation signal but closes the instrument air bleed valve. Change is made to list the instrument air bleed valves.

4. ISTS 3.6.3 Background section describes the Shutdown Purge System and the Minipurge System. Turkey Point Nuclear Generating Station (PTN) does not have a Shutdown Purge System or a Minipurge System. Instead PTN uses the Containment Purge System. Therefore, all information pertaining to the Shutdown Purge System and the Minipurge System has been deleted and information pertaining to the Containment Purge System has been added.

5. ISTS 3.6.3 Background section includes purge valve dimensions within in brackets. This information is included to differentiate between the conditions at which the valve may be uninsulated. The ISTS bracket information includes a 42-inch purge valve and an eight-inch purge valve with the allowance that the eight-inch purge valve may be opened at power to reduce the concentration of noble gases and equalize pressure. PTN uses the instrument air bleed valves similar to the eight-inch purge line for pressure control during Modes 1, 2, 3, and 4. PTN has supply purge valves and exhaust purge valves, 48-inch and 54-inch respectively. Because the containment purge supply and exhaust valves associated with the Containment Purge System are the only purge valves, including the size is not needed and is removed from the bases.

6. ISTS 3.6.3 Applicable Safety Analysis (ASA) section states "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." For PTN this time is 8 seconds and does not include diesel generator startup (for loss of offsite power). Therefore, the time duration has been changed to reflect the proper Design Basis Accident (DBA) time for PTN.

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

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

9. The ISTS includes NRC approved (75 FR 39991) TSTF-446, "Risk Informed Evaluation of Extensions to Containment Isolation Valve Completion Times (WCAP-15791)," (ADAMS Accession No. ML080510164). Florida Power & Light (FPL) is not requesting approval to adopt TSTF-446 because FPL has adopted TSTF-505, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b," at Turkey Point Unit 3 and Unit 4 (PTN) (ADAMS Accession No. ML18270A429). TSTF-446's added information is removed, the deleted information is restored, and the proper plant specific information is inserted to reflect the current licensing basis.

10. Changes are made to be consistent with changes made to the Specification.

11. PTN Improved Technical Specification (ITS) 3.6.3 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 ISTS bases for Conditions A and B state that the closed system must meet the requirements of Reference 3, NRC Standard Review Plan 6.2.4, "Containment Isolation System." The PTN Updated Final Safety Analysis Report (UFSAR) Section 6.6 contains the criteria that PTN must meet in order for PTN systems to qualify as a closed system. The ITS bases have been changed to reflect the PTN criteria.

Specific No Significant Hazards Considerations (NSHCs)

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

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

ATTACHMENT 4

ITS Section 3.6.4 – Containment Pressure

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

CONTAINMENT SYSTEMS

CONTAINMENT

A02

~~INTERNAL~~ PRESSURE

LIMITING CONDITION FOR OPERATION

A02

LCO 3.6.4 3.6.1.4 ~~Primary~~ containment ~~internal~~ pressure shall be maintained between -2 and +1 psig.

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

ACTION:

ACTION A

ACTION B

With the containment internal pressure outside of the limits above, restore the internal pressure to within the limits within 1 hour or be in at least HOT STANDBY 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 be within the limits in accordance with the Surveillance Frequency Control Program.

DISCUSSION OF CHANGES
ITS 3.6.4, CONTAINMENT PRESSURE

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN) 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. 5.0, "Standard Technical Specifications- Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

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

A02 CTS 3.6.1.4 states, in part, "Primary containment internal pressure shall be maintained between -2 and +1 psig…" ITS 3.6.4 states "Containment pressure shall be ≥ -2 and ≤ +1 psig." Additionally, the title for CTS 3.6.1.4 is "Internal Pressure." The title for ITS 3.6.4 is "Containment Pressure." This changes the CTS by changing the title and changing the Limiting Condition for Operation (LCO) statement.

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

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

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

3.6 CONTAINMENT SYSTEMS

3.6.1.4

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

LCO 3.6.4~~A~~ Containment pressure shall be ≥ ~~[-0.3]~~ -2 psig and ≤ ~~[+1.5]~~ +1 psig. ① ③

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
3.6.1.4 ACTION	A. Containment pressure not within limits.	A.1 Restore containment pressure to within limits.	1 hour
3.6.1.4 ACTION	B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY	
4.6.1.4	SR 3.6.4~~A~~.1 Verify containment pressure is within limits.	~~[12 hours~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	① ③

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 Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS). This information is provided in NUREG-1431, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation. In addition, the Subatmospheric Containment Pressure Specification (ISTS 3.6.4B) is not used and is not shown.

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

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

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

B 3.6 CONTAINMENT SYSTEMS

B 3.6.4A 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 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.

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 peak pressure standpoint (Ref. 1).

The initial pressure condition used in the containment analysis was ~~[17.7]~~ 16.1 psia (~~[3.0]~~ 1.4 psig). This resulted in a maximum peak pressure from a LOCA of ~~[53.9]~~ 53.85 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]~~ 53.85 psig, does not exceed the containment design pressure, ~~[~~55~~]~~ psig. ③ ③

The containment was also designed for an external pressure load equivalent to ~~[~~-2.5~~]~~ psig. ③ ~~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.~~ 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).

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

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~~. ②

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.

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.

BASES

ACTIONS (continued)

B.1 and B.2

If containment pressure cannot be restored to within limits 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 3.6.4~~A~~.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.~~

~~OR~~ ③

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

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

REFERENCES

1. UFSAR, Section ~~[6.2]~~ 14.3.4. ② ③
2. 10 CFR 50, Appendix K.

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 because they are unnecessary (only one Containment Pressure Specification is used in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS). This information is provided in NUREG-1431, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation. In addition, the Subatmospheric Containment Pressure Bases (ISTS B 3.6.4B) is not used and is not shown.

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

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

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

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.4, CONTAINMENT PRESSURE

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

ATTACHMENT 5

ITS Section 3.6.5 – Containment Air Temperature

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

CONTAINMENT SYSTEMS

AIR TEMPERATURE

LIMITING CONDITION FOR OPERATION

LCO 3.6.5 3.6.1.5 Primary containment average air temperature shall not exceed 125°F and shall not exceed 120°F by more than 336 equivalent hours* during a calendar year.

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

ACTION:

ACTION A ACTION B With the containment average air temperature greater than 125°F or greater than 120°F for more than 336 equivalent hours* during a calendar year, reduce the average air temperature to within the applicable limit 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

LA01

SR 3.6.5.1 4.6.1.5 The primary containment average air temperature ~~shall be the arithmetical average of the temperatures at the following locations and~~ shall be determined in accordance with the Surveillance Frequency Control Program:

~~Approximate Location~~ LA01

~~a. 0° Azimuth 58 feet elevation~~

~~b. 120° Azimuth 58 feet elevation~~

~~c. 240° Azimuth 58 feet elevation~~

LA01

~~* Equivalent hours are determined from actual hours using the time-temperature relationships that support the environmental qualification requirements of 10 CFR 50.49.~~

DISCUSSION OF CHANGES
ITS 3.6.5, CONTAINMENT AIR TEMPERATURE

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN) 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. 5.0, "Standard Technical Specifications-Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

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

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.6.1.5 includes a Note that states that equivalent hours are determined from actual hours using the time-temperature relationships that support the environmental qualification requirements of 10 CFR 50.49. CTS 4.6.1.5.1 requires the primary containment average air temperature to be the arithmetical average of the temperatures at the listed approximate locations. ITS Limiting Condition for Operation (LCO) 3.6.5 does not include this Note and ITS Surveillance Requirement (SR) 3.6.5.1 requires verification that containment average air temperature is within limit. This changes the CTS by moving the description of how compliance with the Technical Specification LCO is determined to the Bases.

The removal of these details for performing SRs from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to verify containment average air temperatures are within limits. Also, this change is acceptable because these types of procedural details will be adequately controlled in the Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

None

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

3.6 CONTAINMENT SYSTEMS

3.6.5~~A~~ Containment Air Temperature ~~(Atmospheric and Dual)~~ ①

125

3.6.1.5 LCO 3.6.5~~A~~ Containment average air temperature shall be ≤ ~~[120]~~°F. ① ③

and shall not exceed 120°F by more than 336 equivalent hours during a calendar year. ②

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
3.6.1.5 ACTION	A. Containment average air temperature not within limit.	A.1 Restore containment average air temperature to within limit.	8 hours
3.6.1.5 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	
4.6.1.5	SR 3.6.5~~A~~.1 Verify containment average air temperature is within limit.	~~[24 hours~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program~~]~~	③ ③

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.5, CONTAINMENT AIR TEMPERATURE

1. The type of Containment (Atmospheric and Dual) and the Specification designator "A" are deleted because they are unnecessary (only one Containment Specification is used in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS). This information is provided in NUREG-1431, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation. In addition, the Ice Containment and Subatmospheric Containment Specifications (ISTS 3.6.5B and ISTS 3.6.5C) are not used and are not shown.

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

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

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

B 3.6 CONTAINMENT SYSTEMS

B 3.6.5~~A~~ Containment Air Temperature ~~(Atmospheric and Dual)~~ ①

BASES

BACKGROUND

The containment structure serves to contain radioactive material that may be released from the reactor core following a Design Basis Accident (DBA). The containment average air temperature is limited during normal operation to preserve the initial conditions assumed in the accident analyses for a loss of coolant accident (LOCA) or steam line break (SLB).

The containment average air temperature limit is derived from the input conditions used in the containment functional analyses and the containment structure external pressure analyses. This LCO ensures that initial conditions assumed in the analysis of containment response to a DBA are not violated during unit operations. The total amount of energy to be removed from containment by the Containment Spray and Cooling systems during post accident conditions is dependent 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 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.

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~~ INSERT 1 ~~analyses for containment~~ (Ref. 1). ②

The limiting DBAs considered relative to containment 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 the Containment Spray System, Residual Heat Removal System, and Containment Cooling System being rendered inoperable.

② INSERT 1

The limitations on containment average air temperature ensure that the design limits for a LOCA are not exceeded, and that the environmental qualification of equipment is not impacted.

BASES

APPLICABLE SAFETY ANALYSES (continued)

The limiting DBA for the maximum peak containment air temperature is an SLB. The initial containment average air temperature assumed in the design basis analyses (Ref. 1) is ~~[120]~~ 130°F. This resulted in a maximum containment air temperature of ~~[384.9]~~ 315°F. The EQ design temperature is ~~[320]~~ 321°F. ② ③

The temperature limit is used to establish the environmental qualification operating envelope for containment. The maximum peak containment ~~air~~ structural temperature was calculated to ~~exceed~~ remain below the containment design temperature ~~for only a few seconds during the transient~~. ~~The basis of the containment design temperature, however, is to ensure the performance of safety related equipment inside containment (Ref. 2). 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 temperature is acceptable for the DBA SLB. ②

~~The temperature limit is also used in the depressurization analyses to ensure that the minimum pressure limit is maintained following an inadvertent actuation of the Containment Spray System (Ref. 1)~~. ②

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 limit is used in this analysis to ensure that in the event of an accident the maximum containment internal pressure will not be exceeded.

Containment average air temperature satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

LCO

During a DBA, with an initial containment average air temperature less than or equal to the LCO temperature limit, the resultant accident temperature profile assures that the containment structural temperature is maintained below its design temperature and that required safety related equipment will continue to perform its function.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, maintaining containment average air temperature within the limit is not required in MODE 5 or 6.

BASES

ACTIONS

A.1

When containment average air temperature is not within the limit of the LCO, it must be restored to within limit within 8 hours. This Required Action is necessary to return operation to within the bounds of the containment analysis. The 8-hour Completion Time is acceptable considering the sensitivity of the analysis to variations in this parameter and provides sufficient time to correct minor problems.

B.1 and B.2

If the containment average air temperature cannot be restored to within its limit within the required Completion Time, the plant must be brought to a MODE in which 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 3.6.5~~A~~.1 ①

Verifying that containment average air temperature is within the LCO limit ensures that containment operation remains within the limit assumed for the containment analyses. In order to determine the containment average air temperature, an arithmetic average is calculated using measurements taken at locations within the containment selected to provide a representative sample of the overall containment atmosphere.

INSERT 2

~~[The 24 hour Frequency of this SR is considered acceptable based on observed slow rates of temperature increase within containment as a result of environmental heat sources (due to the large volume of containment). Furthermore, the 24 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to an abnormal containment temperature condition.~~ ② ③

~~OR~~

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

②

INSERT 2

The locations within the containment selected to provide a representative sample of the overall containment atmosphere are the following approximate locations:

a.	0° Azimuth	58 feet elevation
b.	120° Azimuth	58 feet elevation
c.	240° Azimuth	58 feet elevation

Equivalent hours are determined from actual hours using the time-temperature relationships that support the environmental qualification requirements of 10 CFR 50.49. Measurements shall be made at all listed locations, whether by fixed or portable instruments, prior to determining the average air temperature.

BASES

SURVEILLANCE REQUIREMENT (continued)

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

REFERENCES

1. U FSAR, Section ~~[6.2]~~ 14.3.4. ② ③

2. 10 CFR 50.49.

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.5 BASES, CONTAINMENT AIR TEMPERATURE

1. The type of Containment (Atmospheric and Dual) and the Specification designator "A" are deleted since they are unnecessary (only one Containment Specification is used in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS). This information is provided in NUREG-1431, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion, but serves no purpose in a plant specific implementation. In addition, the Ice Condenser and Subatmospheric Containment Specification (ISTS 3.6.5B and ISTS 3.6.5C) are not used and are not shown.

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

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

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

Specific No Significant Hazards Considerations (NSHCs)

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

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

ATTACHMENT 6

ITS Section 3.6.6 – Containment Spray and Cooling Systems

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

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

LA01

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 manually transferring suction to the containment sump via the RHR System~~.

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

ACTION:

Action A a. With one Containment Spray System inoperable restore the inoperable Spray System to OPERABLE status within 72 hours or in accordance with the Risk Informed Completion Time Program,

Action B or be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN~~ MODE 4 within ~~the following~~ ~~30~~ 54 hours.

L01

Add proposed Action B.2 Note

A04

Action E b. With two Containment Spray Systems inoperable restore at least one Spray System to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ~~Restore both Spray Systems to OPERABLE status within 72 hours of initial loss or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

A02

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each Containment Spray System shall be demonstrated OPERABLE:

SR 3.6.6.1 a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position* and that power is available to flow path components that require power for operation;

SR 3.6.6.5 b. By verifying that each Containment Spay pump's developed head at the test flow point is greater than or equal to the required developed head, when tested in accordance with the INSERVICE TESTING PROGRAM.

SR 3.6.6.4 c. In accordance with the Surveillance Frequency Control Program by verifying containment spray locations susceptible to gas accumulation are sufficiently filled with water.

SR 3.6.6.1 Note

* Not required to be met for system vent flow paths opened under administrative control.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

L02

d. In accordance with the Surveillance Frequency Control Program ~~during shutdown~~ by:

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

L03

SR 3.6.6.6 1) Verifying that each automatic valve in the flow path actuates to its correct position on ~~a containment spray~~ actuation ~~test~~ signal, and

L04

an actual or simulated

SR 3.6.6.7 2) Verifying that each spray pump starts automatically on ~~a containment spray~~ actuation ~~test~~ signal. ~~The manual isolation valves in the spray lines at the containment shall be locked closed for the performance of these tests~~.

LA02

SR 3.6.6.9 e. In accordance with the Surveillance Frequency Control Program by ~~performing an air or smoke flow test through each spray header and~~ verifying each spray nozzle is unobstructed.

LA03

CONTAINMENT SYSTEMS

EMERGENCY CONTAINMENT COOLING SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.6.6 3.6.2.2 Three emergency containment cooling units shall be OPERABLE.

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

Action C a. With one of the above required emergency containment cooling units inoperable restore the inoperable cooling unit to OPERABLE status within 72 hours or in accordance with the Risk Informed Completion Time Program,

Action D or be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN~~ MODE 4 within ~~the following 30~~ 12 hours. L05

Action E b. With two or more of the above required emergency containment cooling units inoperable, restore at least two cooling units to OPERABLE status within 1 hour or be in at least HOT STANDBY A04 within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ~~Restore all of the above required cooling units to OPERABLE status within 72 hours of initial loss or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~ A03

Add proposed Action D.2 Note L05

SURVEILLANCE REQUIREMENTS

4.6.2.2 Each emergency containment cooling unit shall be demonstrated OPERABLE:

SR 3.6.6.2 a. In accordance with the Surveillance Frequency Control Program by starting each cooler unit from the control room and verifying that each unit motor reaches the nominal operating current for the test conditions and operates for at least 15 minutes.

b. In accordance with the Surveillance Frequency Control Program by:

SR 3.6.6.8 1) Verifying that two emergency containment cooling units start automatically on ~~a safety injection (SI) test~~ an actual or simulated actuation signal, and L04

SR 3.6.6.3 2) Verifying a cooling water flow rate of greater than or equal to 2000 gpm to each cooler.

DISCUSSION OF CHANGES
ITS 3.6.6, CONTAINMENT SPRAY SYSTEM

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN) 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. 5.0, "Standard Technical Specifications-Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

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

A02 CTS 3.6.2.1 Action a, states, in part, that with one Containment Spray system inoperable restore the inoperable Spray System to OPERABLE status within 72 hours. Similar to CTS 3.6.2.1.a, CTS 3.6.2.1.b also states to restore both Spray Systems to OPERABLE status within 72 hours of initial loss. ITS 3.6.6 Action F, two inoperable containment spray trains, requires entry into Limiting Condition for Operation (LCO) 3.0.3 (Action shall be initiated within 1 hour to place the unit, as applicable, in MODE 3 within 7 hours, MODE 4 within 13 hours, and MODE 5 within 37 hours). This changes the CTS by eliminating the CTS 3.6.2.1 ACTION b, requirement to restore both containment spray systems within 72 hours.

The purpose of the second required action in CTS 3.6.2.1 ACTION b, is to ensure a condition where one or more containment spray systems are inoperable does not continue for more than 72 hours without commencing a unit shutdown. This change is acceptable because ITS 3.6.6 Action A will continue to ensure a condition where one or more containment spray systems are inoperable does not continue for more than 72 hours without commencing a unit shutdown. ITS Section 1.3, Completion Times, states that if situations are discovered that require entry into more than one Condition at a time within a single LCO (multiple Conditions), the Required Actions for each Condition must be performed within the associated Completion Time. Thus, if two containment spray trains are inoperable there is also one containment spray system that is inoperable and the conditions for one and for two containment spray trains inoperable are entered. Completion Times are then tracked for each Condition starting from the discovery of the situation that required entry into the Condition, unless otherwise specified. Therefore, from the time of discovery until all containment spray trains must be operable is a maximum of 72 hours. This change is designated as administrative because it does not result in technical changes to the CTS.

A03 CTS 3.6.2.2 Action a, states, in part, that with one of the above required emergency containment cooling units inoperable restore the inoperable cooling unit to OPERABLE status within 72 hours. Similar to CTS 3.6.2.2.a, CTS 3.6.2.2.b also states to restore all of the above required cooling units to OPERABLE status within 72 hours of initial loss. ITS 3.6.6 Action F, any combination of three or more trains/units inoperable, requires entry into LCO 3.0.3 (Action shall be initiated within 1 hour to place the unit, as applicable, in MODE 3 within 7 hours, MODE 4 within 13 hours, and MODE 5 within

37 hours). This changes the CTS by eliminating the CTS 3.6.2.2 Action b, requirement to restore all the above required cooling units to OPERABLE status within 72 hours of initial loss.

The purpose of the second required action in CTS 3.6.2.2 Action b, is to ensure a condition where two or more emergency containment cooling units are inoperable does not continue for more than 72 hours without commencing a unit shutdown. This change is acceptable because ITS 3.6.6 Action C and Action D will continue to ensure a condition where one or two emergency containment cooling units are inoperable does not continue for longer than the associated Required Action's completion time without commencing a unit shutdown. ITS Section 1.3, Completion Times, states that if situations are discovered that require entry into more than one Condition at a time within a single LCO (multiple Conditions), the Required Actions for each Condition must be performed within the associated Completion Time. Thus, if two or three emergency containment cooling units are inoperable there is also one emergency containment cooling units that is inoperable and the conditions for one and for two emergency containment cooling units inoperable are entered. Completion Times are then tracked for each Condition starting from the discovery of the situation that required entry into the Condition, unless otherwise specified. Therefore, from the time of discovery until all emergency containment cooling units must be operable are tracked for each condition entered starting at the time of discovery. This change is designated as administrative because it does not result in technical changes to the CTS.

A04 CTS 3.6.2.1 Action b, states, in part, with two Containment Spray Systems inoperable restore at least one Spray System to OPERABLE status within 1 hour or be in HOT STANDBY in 6 hours and COLD SHUTODWN within the following 30 hours. CTS 3.6.2.1 Action b, states, in part, with two or more of the above required emergency containment cooling units inoperable, restore at least two cooling units to OPERABLE status within 1 hour or be in HOT STANDBY in 6 hours and COLD SHUTODWN within the following 30 hours. ITS ACTION E requires immediate entry into LCO 3.0.3 when both containment spray trains are inoperable or if two or more emergency containment cooling units are inoperable. This changes the CTS by adopting the ITS 3.6.6 ACTION E in lieu of the aforementioned CTS Actions.

The purpose of the stated portions of the CTS Actions is to minimize the time in which a loss of safety function may exist. The one hour provide to "restore" needed equipment followed by a shutdown to COLD SHUTDOWN is equivalent to the time to be in MODE 5 (COLD SHUTDOWN) when applying ITS LCO 3.0.3 (Action shall be initiated within 1 hour to place the unit, as applicable, in MODE 3 within 7 hours, MODE 4 within 13 hours, and MODE 5 within 37 hours). Therefore, this change is designated as administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 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 Refueling Water Storage Tank (RWST) and manually transferring suction to the containment sump via the Residual Heat Removal (RHR) System. ITS LCO 3.6.6 requires two containment spray systems to be OPERABLE. This changes the CTS by moving the detail that the train must be "independent," and the details of what composes an OPERABLE containment spray subsystem 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 requirements 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 Specifications Bases Control Program in Chapter 5. This program provides for the evaluation of changes to the Bases to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA02 (*Type 3 - Removing Procedural Details for Meeting TS Requirements or Reporting Requirements*) CTS 4.6.2.1.d.2 requires each spray pump to be started automatically and states "the manual isolation valves in the spray lines at the containment shall be locked closed for the performance of these tests." ITS Surveillance Requirement (SR) 3.6.6.7 states to verify each containment spray pump starts automatically on an actual or simulated actuation signal. This changes the CTS by moving the details of how to perform the test to the Bases.

The removal of these details for performing SRs 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 pumps be started automatically. 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.

LA03 (Type 3 - Removing Procedural Details for Meeting TS Requirements or Reporting Requirements) CTS 4.6.2.1.e states to perform "an air or smoke flow test through each spray header" to verify each spray nozzle is unobstructed. ITS SR 3.6.6.9 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 SRs 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 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

L01 *(Category 4 – Relaxation of Required Action)* CTS 3.6.2.1, Action a, states that with an inoperable Containment Spray System, restore the inoperable Spray System to OPERABLE status within 72 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ITS 3.6.6 Action A, similarly, states that with one containment spray train inoperable, restore the containment spray train to an Operable status within 72 hours or in accordance with the Risk Informed Completion Time. ITS 3.6.6 Action B states that if the Required Action and associated Completion Time of Condition A is not met then action is required to place the unit in Mode 3 within 6 hours and Mode 4 within 54 hours. Additionally, ITS 3.6.6 Required Action B.2 includes a Note stating that LCO 3.0.4.a is not applicable when entering Mode 4. This changes the CTS by permitting a Required Action end state of hot shutdown (Mode 4) rather that an end state of cold shutdown (Mode 5).

One purpose of CTS 3.6.2.1, ACTION a is to provide an end state, a condition that the reactor must be placed in, if the Required Actions allowing remedial measures to be taken in response to the degraded conditions with continued operation are not met. End states are usually defined based on placing the unit into a mode or condition in which the TS LCO is not applicable. MODE 5 is the current end state for LCOs that are applicable in MODES 1 through 4. This change is acceptable because the risk of the transition from MODE 1 to MODES 4 or 5 depends on the availability of alternating current (AC) sources such that remaining in MODE 4 may be safer. During the realignment from MODE 4 to MODE 5, there is an increased potential for loss of shutdown cooling and loss of inventory events. Decay heat removal following a loss-of-offsite power event in MODE 5 is dependent on AC power for shutdown cooling whereas, in MODE 4, the turbine driven auxiliary feedwater (AFW) pump will be available. Therefore, transitioning to MODE 5 is not always the appropriate end state from a risk perspective. For specific Technical Specification conditions, Westinghouse Topical Report WCAP-16294-A R1 (ADAMS Accession No. ML103430249) justifies MODE 4 as an acceptable alternate end state to Mode 5. The proposed change to the Technical Specifications will allow time to perform short-duration repairs, which currently necessitate exiting the original mode of applicability. The MODE 4 ITS end state is applied, and risk is assessed and managed in accordance with Title 10 of the Code of Federal Regulations (10 CFR) Section 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants." Modified end states are limited to conditions where: (1) entry into the shutdown mode is for a short interval, (2) entry is initiated by inoperability of a single train of equipment or a restriction on a plant operational parameter, unless otherwise stated in the applicable Technical Specification, and (3) the primary purpose is to correct the initiating condition and return to power operation as soon as is practical. This proposed change is consistent with NRC approved Technical Specification Task Force (TSTF) traveler TSTF-432-A Revision 1 (ADAMS Accession No. ML103360003) that was noticed its availability in the Federal Register (77 FR 27814) by the NRC on May 11, 2012. The NRC's approval of WCAP16294-A included four limitations and conditions on its use as identified in Section 4.0 of the NRC Safety Evaluation associated with WCAP-16294-A. Implementation of these stipulations were addressed in the Bases of TSTF-432-A. Florida Power & Light implemented these limitations and conditions at PTN in the adoption of the associated TSTF-432-A Bases. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L02 *(Category 7 – Relaxation of Surveillance Frequency Change - Non-24 month Change)* CTS 4.6.2.1.d.1) and 2) states, in part, to verify that each automatic valve in the flow path actuates to its correct position and verify that each spray pump starts automatically, respectively, during shutdown. CTS 4.6.2.1.d.2 states, in part, during shutdown verify that each automatic valve in the flow path actuates to its correct position and ITS SR 3.6.3.6 states to 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 signal without requiring the verification be perform in COLD SHUTDOWN or REFUELING MODES. This changes the CTS by removing the restriction on surveillance performance during specific MODES.

The purpose of CTS 4.6.2.1.d is to demonstrate OPERABILITY of each containment spray automatic valve in the flow path and each spray pump. The proposed change is acceptable because it does not change the method of test or frequency of the affected surveillances. The proposed change only deletes the requirement to perform this testing during shutdown conditions. In addition, allowing this testing to be performed either at refueling, shutdown or at power does not affect the applicable safety analysis conclusions and allows shutdown activities to be planned which will aid to reduce risk and increase equipment availability during shutdowns. Thus, the proposed change will continue to provide adequate assurance the required components are routinely tested to ensure system operability while providing some additional flexibility in planning and scheduling the required testing. In addition, due to system designs that allow for safe testing at power, the proposed change will not adversely affect the safe operation of the plant. The proposed change is designated as less restrictive because less stringent SRs are being applied in the ITS than were applied in the CTS.

L03 *(Category 5 - Deletion of Surveillance Requirement)* CTS 4.6.2.1.d.1) requires verification that each automatic valve in the flow path actuates to its correct position. ITS SR 3.6.6.6 requires verification that each automatic valve in the flow path "that is not locked, sealed, or otherwise secured in position" actuates to the correct position. This changes the CTS by excluding those automatic valves that are locked, sealed or otherwise secured in position from the verification.

The purpose of CTS 4.6.2.1.d.1 is to provide assurance that the automatic valves required to actuate in case of a design basis accident (DBA) actuate to the correct position. This change is acceptable because the deleted SR is not necessary to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a Frequency necessary to provide confidence that the equipment can perform its specified safety function. Those automatic valves that are locked, sealed, or otherwise secured in position are not required to actuate in order to perform the specified safety function because the valves are already in the required position. Testing such valves would not provide any additional assurance of OPERABILITY. Valves that are required to actuate will continue to be tested. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L04 *(Category 6 - Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.6.2.1.d.1 and 4.6.2.1.d.2 require verification of the automatic actuation of containment spray components on a containment spray actuation "test" signal. CTS 4.6.2.2.b.1 requires two containment cooling units be verified to start automatically upon receipt of a safety injection (SI) test signal. ITS SR 3.6.6.6, SR 3.6.6.7, and SR 3.6.6.8 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.d.1 and 4.6.2.1.d.2 is to ensure the containment spray components operate correctly upon receipt of an actuation signal. The purpose of CTS 4.6.2.2.b.1 is to ensure the containment cooling units operate correctly upon receipt of an actuation signal. This change is acceptable because the relaxed SR acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its specified safety 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. This change is designated as less restrictive because less stringent SRs are being applied in the ITS than were applied in the CTS.

L05 *(Category 4 – Relaxation of Required Action)* CTS 3.6.2.2, Action a, states that with an inoperable emergency containment cooling unit, restore the inoperable cooling unit to OPERABLE status within 72 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ITS 3.6.6 ACTION C, states that with one emergency containment cooling units inoperable, restore the emergency containment cooling unit to an OPERABLE status within 72 hours or in accordance with the Risk Informed Completion Time. ITS 3.6.6 Action D states that if the Required Action and associated Completion Time of Condition C is not met, action is required to place the unit in Mode 3 within 6 hours and Mode 4 within 12 hours. Additionally, ITS 3.6.6 Required Action D.2 includes a Note stating that LCO 3.0.4.a is not applicable when entering MODE 4. This changes the CTS by permitting a Required Action end state of HOT SHUTDOWN (MODE 4) rather that an end state of COLD SHUTDOWN (MODE 5).

One purpose of CTS 3.6.2.2, ACTION a is to provide an end state, a condition that the reactor must be placed in, if the Required Actions allowing remedial measures to be taken in response to the degraded conditions with continued operation are not met. End states are usually defined based on placing the unit into a MODE or condition in which the Technical Specification LCO is not applicable. MODE 5 is the current end state for LCOs that are applicable in MODES 1 through 4. This change is acceptable because the risk of the transition from MODE 1 to MODES 4 or 5 depends on the availability of alternating current (AC) sources such that remaining in MODE 4 may be safer. During the realignment from MODE 4 to MODE 5, there is an increased potential for loss of shutdown cooling and loss of inventory events. Decay heat removal following a loss-of-offsite power event in MODE 5 is dependent on AC power for shutdown cooling whereas, in MODE 4, the turbine driven AFW pump will be available. Therefore, transitioning to MODE 5 is not always the appropriate end state from a risk perspective. Thus, for specific Technical Specification conditions, Westinghouse Topical Report WCAP-16294-A R1 (ADAMS Accession No. ML103430249) justifies MODE 4 as an acceptable alternate end state to Mode 5. The proposed change to the Technical Specifications will allow time to perform short-duration repairs, which currently necessitate exiting the original mode of applicability. The MODE 4 Technical Specification end state is applied, and risk is assessed and managed in accordance with Title 10 of the Code of Federal Regulations (10 CFR) Section 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants." Modified end states are limited to conditions where: (1) entry into the shutdown mode is for a short interval, (2) entry is initiated by inoperability of a single train of equipment or a restriction on a plant operational parameter, unless otherwise stated in the applicable Technical Specification, and (3) the primary purpose is to correct the initiating condition and return to power operation as soon as is practical. This proposed change is consistent with NRC approved Technical Specification Task Force (TSTF) traveler TSTF-432-A Revision 1 (ADAMS Accession No. ML103360003) that was noticed its availability in the Federal Register (77 FR 27814) by the NRC on May 11, 2012. The NRC's approval of WCAP-16294-A included four limitations and conditions on its use as identified in Section 4.0 of the NRC Safety Evaluation associated with WCAP-16294-A.

Implementation of these stipulations were addressed in the Bases of TSTF-432-A. Florida Power & Light implemented these limitations and conditions at PTN in the adoption of the associated NUREG-1431 Rev. 5 Bases. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

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

3.6 CONTAINMENT SYSTEMS

3.6.6~~A~~ Containment Spray and Cooling Systems ~~(Atmospheric and Dual) (Credit taken for iodine removal by the Containment Spray System)~~ ①

3.6.2.1
3.6.2.2

LCO 3.6.6~~A~~ Two containment spray trains and ~~[two]~~ three emergency containment cooling ~~trains~~ units shall be OPERABLE. ① ② ③

Applicability

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
3.6.2.1 Action a	A. One containment spray train inoperable.	A.1 Restore containment spray train to OPERABLE status.	72 hours ~~[~~OR ② In accordance with the Risk Informed Completion Time Program~~]~~ ②
3.6.2.1 Action a	B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	6 hours
		AND	
DOC L01 DOC L01		B.2 --------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------- Be in MODE 4.	54 hours

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
	~~C. One [required] containment cooling train inoperable.~~	~~C.1 Restore [required] containment cooling train to OPERABLE status.~~	~~7 days~~ ~~[OR~~ ~~In accordance with the Risk Informed Completion Time Program]~~	④
3.6.2.2 Action a	~~D~~ C. ~~Two~~ One emergency ~~[required]~~ containment cooling ~~trains~~ unit inoperable.	~~D~~ C.1 Restore ~~one~~ emergency ~~[required]~~ containment cooling ~~train~~ unit to OPERABLE status.	72 hours ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~	② ③ ③ ② ②
3.6.2.2 Action a DOC L06 DOC L06	~~E~~ D. Required Action and associated Completion Time of Condition C ~~or D~~ not met.	~~E~~ D.1 Be in MODE 3. AND ~~E~~ D.2 -------------- NOTE -------------- LCO 3.0.4.a is not applicable when entering MODE 4. --- Be in MODE 4.	6 hours 12 hours	③ ③ ③
3.6.2.1 Action b 3.6.2.2 Action b	~~F~~ E. Two containment spray trains inoperable. OR ~~Any combination of three~~ Two or more ~~trains~~ emergency containment cooling units inoperable.	~~F~~ E.1 Enter LCO 3.0.3.	Immediately	③ ②

SURVEILLANCE REQUIREMENTS

		SURVEILLANCE	FREQUENCY	
4.6.2.1.a 4.6.2.1.a*	SR 3.6.6~~A~~.1	------------------------------NOTE------------------------------ Not required to be met for system vent flow paths opened under administrative control. --- Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	① ② ②
4.6.2.2.a	SR 3.6.6~~A~~.2	Operate each ~~[required]~~ emergency containment cooling ~~train~~ unit fan unit for ≥ 15 minutes.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	① ③ ② ②
4.6.2.2.b.2)	SR 3.6.6~~A~~.3	Verify each ~~[required]~~ emergency containment cooling ~~train~~ unit cooling water flow rate is ≥ ~~[700]~~ 2000 gpm.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	① ③ ② ②

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
4.6.2.1.c	SR 3.6.6A.4	Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	① ② ②
4.6.2.1.b	SR 3.6.6A.5	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	
4.6.2.1.d.1)	SR 3.6.6A.6	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	① ② ②

SURVEILLANCE REQUIREMENTS (continued)

		SURVEILLANCE	FREQUENCY	
4.6.2.1.d.2)	SR 3.6.6A.7	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	① ② ②
4.6.2.2.b.1)	SR 3.6.6A.8	Verify each ~~[required]~~ emergency containment cooling ~~train~~ unit starts automatically on an actual or simulated actuation signal.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	① ③ ② ②
4.6.2.1.e	SR 3.6.6A.9	Verify each spray nozzle is unobstructed.	~~[At first refueling]~~ ~~AND~~ ~~[10 years~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	① ② ②

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.6, CONTAINMENT SPRAY SYSTEM

1. The type of Containment (Atmospheric and Dual), the information crediting iodine removal, and the Specification designator "A" are deleted because they are unnecessary (only one Containment Specification is used in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS). This information is provided in NUREG-1431, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation. In addition, the Atmospheric and Dual (Credit not Taken for iodine removal), Ice Condenser, and Subatmospheric containment Specifications (ISTS 3.6.6B, ISTS 3.6.6C, ISTS 3.6.6D, and ISTS 3.6.5E) are not used and are not shown.

2. The Improved Standard Technical Specification (ISTS) contain bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed, and the proper plant specific information/value is provided. This is acceptable because the information/value is revised to reflect the current licensing basis.

3. 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.

4. ISTS 3.6.6A, Action C, requires that with one [required] containment cooling train inoperable to restore [required] containment cooling train to OPERABLE status within 7 days [OR In accordance with the Risk Informed Completion Time Program]. The 7-day completion time assumed that the containment cooling system and containment spray system were redundant to each other in providing post-accident cooling of the containment atmosphere. As a result of this redundancy in cooling capability, the allowable out of service time requirements for the containment cooling system was adjusted from 72 hours to 7 days. With the approval of the Extended Power Uprate the redundancy in cooling capability is no longer available as one containment spray train and two emergency containment cooling units are required to provide post-accident cooling. Therefore, this Action is deleted and the completion time for one inoperable emergency containment cooling train has been returned to 72 hours in ITS Condition C.

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

B 3.6 CONTAINMENT SYSTEMS

B 3.6.6~~A~~ Containment Spray and Cooling Systems ~~(Atmospheric and Dual) (Credit taken for iodine removal by the Containment Spray System)~~ ①

BASES

BACKGROUND

The Containment Spray and Emergency Containment Cooling systems provide containment atmosphere cooling to limit post accident pressure and temperature in containment to less than the design values. Reduction of containment pressure and the iodine removal capability of the spray reduces the release of fission product radioactivity from containment to the environment, in the event of a Design Basis Accident (DBA), to within limits. INSERT 1 ~~The Containment Spray and Containment Cooling systems are 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). ② ②

The Emergency Containment Cooling System and Containment Spray System are Engineered Safety Feature (ESF) systems. They are designed to ensure that the heat removal capability required during the post accident period can be attained. The Containment Spray System and the Emergency Containment Cooling System provide a ~~redundant~~ method~~s~~ to limit and maintain post accident conditions to less than the containment design values. ② ② ②

Containment Spray System

The Containment Spray System consists of two separate trains of equal capacity~~, each capable of meeting the design bases~~. Each train includes a containment spray pump, spray headers, nozzles, valves, and piping. Each train is powered from a separate 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 sump(s) via the RHR System. ② ②

The Containment Spray System provides a spray of cold borated water ~~mixed with sodium hydroxide (NaOH) from the spray additive tank~~ into the upper regions of containment to reduce the containment pressure and temperature and to reduce fission products from the containment atmosphere during a DBA. The RWST solution temperature is an ②

②

INSERT 1

The Turkey Point Nuclear Generating Station (PTN) Unit 3 and Unit 4, Containment Spray System and Containment Cooling System, were designed to meet Criterion 52, "Containment Heat Removal Systems," Criterion 58, "Inspection of Containment Pressure-Reducing Systems," Criterion 59, "Testing of Containment Pressure-Reducing Systems Components," Criterion 60, "Testing of Containment Spray Systems," Criterion 61, "Testing of Operational Sequence of Containment Pressure-Reducing Systems," and Criterion 62, "Inspection of Air Cleanup Systems (Ref. 1),

BASES

BACKGROUND (continued)

important factor in determining the heat removal capability of the Containment Spray System during the injection phase. In the recirculation mode of operation, heat is removed from the containment sump water by the residual heat removal coolers. ~~Each train of the Containment Spray System provides adequate spray coverage to meet the system design requirements for containment heat removal~~. ②

INSERT 2 ~~The Spray Additive System injects an NaOH solution into the spray~~. The resulting alkaline pH of the spray enhances the ability of the spray to scavenge fission products from the containment atmosphere. The ~~NaOH~~ NaTB ~~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 minimizes the occurrence of chloride and caustic stress corrosion on mechanical systems and components exposed to the fluid. ② ②

The Containment Spray System is actuated ~~either~~ automatically by a containment High-~~3~~ High pressure signal coincident with a containment High 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 level alarm for the RWST ~~actuates valves to align the Containment Spray System pump suction with 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 operating procedures. ② ②

Emergency <u>Containment Cooling System</u>

~~Two trains~~ Three units of emergency containment cooling~~, each of sufficient capacity to supply 100% of the design cooling requirement,~~ are provided. Each ~~train of two~~ fan unit~~s~~ is supplied with cooling water from a ~~separate~~ train of ~~essential service~~ component cooling water (CCW) ~~water (ESW)~~. Air is drawn into the coolers through the fan and discharged to the ~~steam generator compartments, pressurizer compartment, and instrument tunnel, and outside the secondary shield in the~~ upper ~~lower~~ areas of containment. ②

②

INSERT 2

The NaTB Baskets are located below the minimum post-LOCA flood height ensuring the NaTB is quickly and completely dissolved in the sump fluid ensuring that the post-LOCA sump pH achieves a minimum value of 7.0 at the onset of spray recirculation and maintains the post-LOCA sump pH during long-term recirculation.

BACKGROUND (continued)

During normal operation, ~~all four fan~~ the normal containment cooling system units are operating. The fans are normally operated ~~at high speed~~ with ~~ESW~~ CCW supplied to the cooling coils. The Normal Containment Cooling System, operating in conjunction with the ~~Containment~~ Control Rod Drive Mechanism (CRDM) Cooling System ~~Ventilation and Air Conditioning systems~~, is designed to limit the ambient containment air temperature during normal unit operation to less than the limit specified in LCO 3.6.5~~A~~, "Containment Air Temperature." This temperature limitation ensures that the containment temperature does not exceed the initial temperature conditions assumed for the DBAs. ② ①

In post accident operation following an actuation signal, ~~the~~ two Emergency Containment Cooling System fans are designed to start automatically ~~in slow speed~~ if not already running. ~~If running in high (normal) speed, the fans automatically shift to slow speed. The fans are operated at the lower speed during accident conditions to prevent motor overload from the higher mass atmosphere~~ INSERT 3. The temperature of the ~~ESW~~ CCW is an important factor in the heat removal capability of the fan units. ②

APPLICABLE SAFETY ANALYSES

The Containment Spray System and Emergency Containment Cooling System limit the temperature and pressure that could be experienced following a DBA. The limiting DBAs considered 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. No DBAs are assumed to occur simultaneously or consecutively. The postulated DBAs are analyzed with regard to containment ESF systems, assuming the loss of one ESF bus, which is the worst case single active failure and results in one train of the Containment Spray System and Emergency Containment Cooling System being rendered inoperable. ② ②

The analysis and evaluation show that under the worst case scenario, the highest peak containment pressure is ~~[44.1]~~ 53.85 psig (experienced during a LOCA). The analysis shows that the peak containment structural temperature is ~~[384.5]~~ 279.4°F (experienced during an SLB). Both results meet the intent of the design basis. (See the Bases for LCO 3.6.4~~A~~, "Containment Pressure," and LCO 3.6.5~~A~~, "Containment Air Temperature," for a detailed discussion.) The analyses and evaluations assume a unit specific power level of ~~[~~100~~]~~%, for LOCAs and various power levels for a SLBs, one containment spray train and ~~one~~ two emergency containment cooling ~~train~~ units operating, and initial (pre-accident) containment conditions of ~~[120]°F and [1.5] psig~~ INSERT 4. The analyses also assume a response time delayed initiation to provide conservative peak calculated containment pressure and temperature responses. ② ③ ① ③ ② ③

② INSERT 3

Only two of the three emergency containment fans start on a safety injection signal (Containment High-1 pressure setpoint). The third emergency containment fan is required to be available and will automatically start if there is a failure of one of the other units.

INSERT 4

90°F and 13.26 psia for a LOCA while 130°F and 16.1 psia for a SLB

BASES

APPLICABLE SAFETY ANALYSES (continued)

For certain aspects of transient accident analyses, maximizing the calculated containment pressure is not conservative. In particular, the 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 effect of an inadvertent containment spray actuation has been analyzed. An inadvertent spray actuation results in a [2.0] psig containment pressure and is associated with the sudden cooling effect in the interior of the leak tight containment. Additional discussion is provided in the Bases for LCO 3.6.4A.~~ ②

The modeled Containment Spray System actuation from the containment analysis is based on a response time associated with exceeding the containment High-~~3~~2 pressure setpoint to achieving full flow through the containment spray nozzles. ② The Containment Spray System total response time of ~~[~~60~~]~~ seconds includes diesel generator (DG) startup (for loss of offsite power), block loading of equipment, containment spray pump startup, and spray line filling (Ref. 3). ③

Emergency Containment cooling train performance for post accident conditions is given in Reference 4. ~~The result of the analysis is that each train can provide 100% of the required peak cooling capacity during the post accident condition.~~ ② The train post accident cooling capacity under varying containment ambient conditions, required to perform the accident analyses, is also shown in Reference ~~5~~4. ②

The modeled Emergency Containment Cooling System actuation from the containment analysis is based upon a response time associated with SI Actuation ~~exceeding the containment High-3 pressure setpoint~~ to achieving full Emergency Containment Cooling System air and safety grade cooling water flow. ② The Emergency Containment Cooling System total response time of ~~[60] seconds~~ 35 seconds for a SLB with 50 seconds and 60 seconds for the first and second units starting during a LOCA, ③ includes signal delay, DG startup (for loss of offsite power), and ~~service~~ component cooling water pump startup times (Ref. ~~6~~4). ②

The Containment Spray System and the Emergency Containment Cooling System satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii). ②

BASES

LCO

During a DBA, a minimum of ~~one~~ two emergency containment cooling ~~train~~ units and one containment spray train are required to maintain the containment peak pressure and temperature below the design limits (Ref. ~~7~~ 4). Additionally, one containment spray train is also required to remove iodine from the containment atmosphere and maintain concentrations below those assumed in the safety analysis. To ensure that these requirements are met, two containment spray trains and ~~two~~ three emergency containment cooling ~~trains~~ units must be OPERABLE. Therefore, in the event of an accident, at least one ~~train in~~ containment spray train and two emergency containment cooling units ~~each system~~ operate~~s~~, assuming the worst case single active failure occurs. ② ② ② ②

Each Containment Spray System typically includes a spray pump, spray headers, nozzles, valves, 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. Management of gas voids is important to Containment Spray System OPERABILITY.

Each Emergency Containment Cooling System typically includes ~~demisters,~~ cooling coils, ~~dampers,~~ fans, instruments, and controls to ensure an OPERABLE flow path. ②

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 trains and emergency containment cooling ~~trains~~ units. 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. Thus, the Containment Spray System and the Emergency Containment Cooling System are not required to be OPERABLE in MODES 5 and 6. ②

ACTIONS

A.1

With one containment spray train inoperable, the inoperable containment spray train must be restored to OPERABLE status within 72 hours ~~[~~or in accordance with the Risk Informed Completion Time Program~~]~~. In this Condition, the remaining OPERABLE spray and cooling trains are adequate to perform the iodine removal and containment cooling functions. The 72-hour Completion Time takes into account the redundant heat removal capability afforded by the Containment Spray System, reasonable time for repairs, and low probability of a DBA occurring during this period. ③

BASES

ACTIONS (continued)

B.1 and B.2

If the inoperable containment spray train cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which overall plant risk is reduced. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 54 hours.

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. ~~8~~5). ② In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference ~~8~~5, ② the steam turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.

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

The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems. The extended interval to reach MODE 4 allows 48 hours to restore additional time for attempting restoration of the containment spray train to OPERABLE status in MODE 3. This is reasonable when considering the driving force for a release of radioactive material from the Reactor Coolant System is reduced in MODE 3.

~~C.1~~ ②

~~With one of the required containment cooling trains inoperable, the inoperable required containment cooling train must be restored to~~

BASES

ACTIONS (continued)

~~OPERABLE status within 7 days [or in accordance with the Risk Informed Completion Time Program]. The components in this degraded condition provide iodine removal capabilities and are capable of providing at least 100% of the heat removal needs. The 7 day Completion Time was developed taking into account the redundant heat removal capabilities afforded by combinations of the Containment Spray System and Containment Cooling System and the low probability of DBA occurring during this period.~~ ②

~~D~~C.1 ②

With ~~two~~ one ~~required~~ emergency containment cooling ~~trains~~ unit inoperable, ~~one of~~ the ~~required~~ emergency containment cooling ~~trains~~ unit must be restored to OPERABLE status within 72 hours ~~[~~or in accordance with the Risk Informed Completion Time Program~~]~~. The components in this degraded condition provide iodine removal capabilities and are capable of providing at least 100% of the heat removal needs after an accident. The 72-hour Completion Time was developed taking into account the redundant heat removal capabilities afforded by combinations of the Containment Spray System and Emergency Containment Cooling System, the iodine removal function of the Containment Spray System, and the low probability of DBA occurring during this period. ② ②

~~E~~D.1 and ~~E~~D.2 ④

If the Required Action and associated Completion Time of Condition C ~~or D~~ of this LCO are not met, the plant must be brought to a MODE in which overall plant risk is reduced. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours. ④

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. ~~8~~5). ② In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference ~~8~~5, ② the steam turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.

BASES

ACTIONS (continued)

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

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.

~~F~~ E.1 ④

With two containment spray trains or ~~any combination of three~~ two or more ~~containment spray and~~ emergency containment cooling ~~trains~~ units inoperable, the unit is in a condition outside the accident analysis. Therefore, LCO 3.0.3 must be entered immediately. ②

SURVEILLANCE REQUIREMENTS

SR 3.6.6~~A~~.1 ①

Verifying the correct alignment for manual, power operated, and automatic valves in the containment spray flow path provides assurance that the proper flow paths will exist for Containment Spray System operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these were verified to be in the correct position prior to locking, sealing, or securing. This SR does not require any testing or valve manipulation. Rather, it involves verification that those valves outside containment (only check valves are inside containment) and capable of potentially being mispositioned are in the correct position.

~~[The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.~~ ③

~~OR~~

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

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~ ⑤

The Surveillance is modified by a Note which exempts system vent flow paths opened under administrative control. The administrative control should be proceduralized and include stationing a dedicated individual at the system vent flow path who is in continuous communication with the operators in the control room. This individual will have a method to rapidly close the system vent flow path if directed.

SR 3.6.6~~A~~.2 ①

Operating each ~~[required]~~ emergency containment cooling ~~train~~ fan unit for ③ ②
≥ 15 minutes ensures that all ~~trains~~ units are OPERABLE and that all ②
associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. ~~[The 31 day Frequency was developed considering the known reliability of the fan units and controls, the two train redundancy available, and the low probability of significant degradation of the containment cooling train occurring between surveillances. It has also been shown to be acceptable through operating experience.~~

~~OR~~ ③

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

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~ ⑤

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.6~~A~~.3 ①

Verifying that each ~~[required]~~ emergency containment cooling ~~train~~ unit CCW ~~ESW~~ cooling flow rate to each cooling unit is ≥ 2000 ~~[700]~~ gpm provides assurance that the design flow rate assumed in the safety analyses will be achieved (Ref. 6 ~~3~~). ③ ②
~~[The Frequency of 3 days was developed considering the known reliability of the Cooling Water System, the two train redundancy available, and the low probability of a significant degradation of flow occurring between surveillances.~~ ③

~~OR~~

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

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ ⑤
~~--]~~

SR 3.6.6~~A~~.4 ①

Containment Spray System piping and components have the potential to develop voids and pockets of entrained gases. Preventing and managing gas intrusion and accumulation is necessary for proper operation of the containment spray trains and may also prevent water hammer and pump cavitation.

Selection of Containment Spray System locations susceptible to gas accumulation is based on a review of system design information, including piping and instrumentation drawings, isometric drawings, plan and elevation drawings, and calculations. The design review is supplemented by system walk downs to validate the system high points and to confirm the location and orientation of important components that can become sources of gas or could otherwise cause gas to be trapped or difficult to remove during system maintenance or restoration. Susceptible locations depend on plant and system configuration, such as stand-by versus operating conditions.

BASES

SURVEILLANCE REQUIREMENTS (continued)

The Containment Spray System is OPERABLE when it is sufficiently filled with water. Acceptance criteria are established for the volume of accumulated gas at susceptible locations. If accumulated gas is discovered that exceeds the acceptance criteria for the susceptible location (or the volume of accumulated gas at one or more susceptible locations exceeds an acceptance criterion for gas volume at the suction or discharge of a pump), the Surveillance is not met. If the accumulated gas is eliminated or brought within the acceptable criteria limits during performance of the Surveillance, the Surveillance is met and past system OPERABILITY is evaluated under the Corrective Action Program. If it is determined by subsequent evaluation that the Containment Spray System is not rendered inoperable by the accumulated gas (i.e., the system is sufficiently filled with water), the Surveillance may be declared met. Accumulated gas should be eliminated or brought within the acceptance criteria limits.

Containment Spray System locations susceptible to gas accumulation are monitored and, if gas is found, the gas volume is compared to the acceptance criteria for the location. Susceptible locations in the same system flow path which are subject to the same gas intrusion mechanisms may be verified by monitoring a representative sub-set of susceptible locations. Monitoring may not be practical for locations that are inaccessible due to radiological or environmental conditions, the plant configuration, or personnel safety. For these locations alternative methods (e.g., operating parameters, remote monitoring) may be used to monitor the susceptible location. Monitoring is not required for susceptible locations where the maximum potential accumulated gas void volume has been evaluated and determined to not challenge system OPERABILITY. The accuracy of the method used for monitoring the susceptible locations and trending of the results should be sufficient to assure system OPERABILITY during the Surveillance interval.

~~[The 31 day Frequency takes into consideration the gradual nature of gas accumulation in the Containment Spray System piping and the procedural controls governing system operation.~~ ③

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Surveillance Frequency may vary by location susceptible to gas accumulation.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~---------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~ ⑤

SR 3.6.6~~A~~.5 ①

Verifying each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head ensures that spray pump performance has not degraded during the cycle. Flow and differential pressure are normal tests of centrifugal pump performance required by the ASME Code (Ref. ~~9~~ 7). Since the containment spray pumps cannot be tested with flow through the spray headers, they are tested on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice tests confirm component OPERABILITY, trend performance, and detect incipient failures by abnormal performance. The Frequency of the SR is in accordance with the INSERVICE TESTING PROGRAM. ②

SR 3.6.6~~A~~.6 and SR 3.6.6~~A~~.7 ①

These SRs require verification that each automatic containment spray valve actuates to its correct position and that each containment spray pump starts upon receipt of an actual or simulated actuation of a containment High-~~3~~ High pressure signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. INSERT 5 ~~[The [18] month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillances when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~ ② ②

~~OR~~ ③

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

②

INSERT 5

The manual isolation valves in the spray lines at the containment shall be locked closed for the performance of the containment spray pump automatic start tests.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-------------------------------REVIEWER'S NOTE-------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~ ⑤

The surveillance of containment sump isolation valves is also required by SR 3.5.2.2. A single surveillance may be used to satisfy both requirements.

SR 3.6.6~~A~~.8

This SR requires verification that each ~~[required]~~ emergency containment cooling ~~train~~ unit actuates upon receipt of an actual or simulated safety injection signal. ③ ② ~~[The [18] month Frequency is based on engineering judgment and has been shown to be acceptable through operating experience. See SR 3.6.6A.6 and SR 3.6.6A.7, above, for further discussion of the basis for the [18] month Frequency.~~ ③

~~OR~~

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

~~-------------------------------REVIEWER'S NOTE-------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~ ⑤

SR 3.6.6~~A~~.9 ①

With the containment spray inlet valves closed and the spray header drained of any solution, low pressure air or smoke can be blown through test connections. This SR ensures that each spray nozzle is unobstructed and provides assurance that spray coverage of the containment during an accident is not degraded. ~~[Due to the passive design of the nozzle, a test at [the first refueling and at] 10 year intervals is considered adequate to detect obstruction of the nozzles.~~

~~OR~~ ③

BASES

SURVEILLANCE REQUIREMENTS (continued)

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

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

REFERENCES

1. ~~10 CFR 50, Appendix A, GDC 38, GDC 39, GDC 40, GDC 41, GDC 42, and GDC 43~~ UFSAR Sections 6.3 and 6.4. ②

2. 10 CFR 50, Appendix K.

3. UFSAR, Section ~~[ ]~~ 6.3.

4. UFSAR, Section ~~[ ]~~ 14.3.

~~5. FSAR, Section [ ].~~

~~6. FSAR, Section [ ].~~

~~7. FSAR, Section [ ].~~

~~8~~ 5. WCAP-16294-NP-A, Rev. 1, "Risk-Informed Evaluation of Changes to Technical Specification Required Action Endstates for Westinghouse NSSS PWRs," June 2010.

6. UFSAR, Section 9.3

~~9~~ 7. ASME Code for Operation and Maintenance of Nuclear Power Plants. ②

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.6 BASES, CONTAINMENT SPRAY SYSTEM

1. The type of Containment (Atmospheric and Dual), the information crediting iodine removal, and the Specification designator "A" are deleted because they are unnecessary (only one Containment Specification is used in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS). This information is provided in NUREG-1431, Rev. 5, 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 (Credit not Taken for iodine removal), Ice Condenser, and Subatmospheric containment Specifications (ISTS 3.6.6B, ISTS 3.6.6C, ISTS 3.6.6D, and ISTS 3.6.5E) are not used and are not shown.

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

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

4. Changes are made to be consistent with changes made to the Specification.

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

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.6, CONTAINMENT SPRAY AND COOLING SYSTEMS

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

ATTACHMENT 7

ITS Section 3.6.7 – Recirculation pH Control System

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

CONTAINMENT SYSTEMS

3/4.6.2.3 RECIRCULATION pH CONTROL SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.6.7 3.6.2.3 The Recirculation pH Control System shall be OPERABLE.

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

ACTION:

Action A Action B With the Recirculation pH Control System inoperable, restore the buffering agent to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN~~ Mode 4 within the next ~~72~~ 54 hours. L01

Add proposed Required Action B.2 Note

SURVEILLANCE REQUIREMENTS

4.6.2.3 The Recirculation pH Control System shall be demonstrated OPERABLE:

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

SR 3.6.7.1 1. Verifying that the buffering agent baskets are in place and intact;

SR 3.6.7.2 2. Collectively contain ≥ 7500 pounds (154 cubic feet) of sodium tetraborate decahydrate, or equivalent.

~~3/4.6.3 DELETED~~

DISCUSSION OF CHANGES
ITS 3.6.7, RECIRCULATION pH CONTROL SYSTEM

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN) 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. 5.0, "Standard Technical Specifications- Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

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

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

L01 *(Category 4 – Relaxation of Required Action)* CTS 3.6.2.3, Action, states that with an inoperable Recirculation pH Control System, restore the buffering agent to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 72 hours. ITS 3.6.7 Action A, similarly, states that with Recirculation pH Control System inoperable, restore the Recirculation pH Control System to an OPERABLE status within 72 hours. ITS 3.6.7 Action B states that if the Required Action and associated Completion Time of Condition A is not met then action is required to place the unit in MODE 3 within 6 hours and MODE 4 within 54 hours. Additionally, ITS 3.6.7 Required Action B.2 includes a Note stating that Limiting Condition for Operation (LCO) 3.0.4.a is not applicable when entering MODE 4. This changes the CTS by permitting a Required Action end state of HOT SHUTDOWN (MODE 4) rather that an end state of COLD SHUTDOWN (MODE 5).

One purpose of CTS 3.6.2.3, Action is to provide an end state, a condition that the reactor must be placed in, if the Required Actions allowing remedial measures to be taken in response to the degraded conditions with continued operation are not met. End states are usually defined based on placing the unit into a MODE or condition in which the Technical Specification LCO is not applicable. MODE 5 is the current end state for LCOs that are applicable in

MODES 1 through 4. This change is acceptable because the risk of the transition from MODE 1 to MODES 4 or 5 depends on the availability of alternating current (AC) sources such that remaining in MODE 4 may be safer. During the realignment from MODE 4 to MODE 5, there is an increased potential for loss of shutdown cooling and loss of inventory events. Decay heat removal following a loss-of-offsite power event in MODE 5 is dependent on AC power for shutdown cooling whereas, in MODE 4, the turbine driven AFW pump will be available. Therefore, transitioning to MODE 5 is not always the appropriate end state from a risk perspective. Thus, for specific Technical Specification conditions, Westinghouse Topical Report WCAP-16294-A R1 (ADAMS Accession No. ML103430249) justifies MODE 4 as an acceptable alternate end state to Mode 5. The proposed change to the Technical Specifications will allow time to perform short-duration repairs, which currently necessitate exiting the original mode of applicability. The MODE 4 Technical Specification end state is applied, and risk is assessed and managed in accordance with Title 10 of the Code of Federal Regulations (10 CFR) Section 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants." Modified end states are limited to conditions where: (1) entry into the shutdown mode is for a short interval, (2) entry is initiated by inoperability of a single train of equipment or a restriction on a plant operational parameter, unless otherwise stated in the applicable Technical Specification, and (3) the primary purpose is to correct the initiating condition and return to power operation as soon as is practical. This proposed change is consistent with NRC approved Technical Specification Task Force (TSTF) traveler TSTF-432-A Revision 1 (ADAMS Accession No. ML103360003) that was noticed its availability in the Federal Register (77 FR 27814) by the NRC on May 11, 2012. The NRC's approval of WCAP-16294-A included four limitations and conditions on its use as identified in Section 4.0 of the NRC Safety Evaluation associated with WCAP-16294-A. Implementation of these stipulations were addressed in the Bases of TSTF-432-A. Florida Power & Light implemented these limitations and conditions at PTN in the adoption of the associated NUREG-1431 Rev. 5 Bases. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

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

3.6 CONTAINMENT SYSTEMS

3.6.7 ~~Spray Additive~~ Recirculation pH Control System ~~(Atmospheric, Subatmospheric, Ice Condenser, and Dual)~~ ② ①

3.6.2.3 LCO 3.6.7 The ~~Spray Additive~~ Recirculation pH Control System shall be OPERABLE. ②

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
3.6.2.3 ACTION	A. ~~Spray Additive~~ Recirculation pH Control System inoperable.	A.1 Restore ~~Spray Additive~~ Recirculation pH Control System to OPERABLE status.	72 hours ②
3.6.2.3 ACTION	B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
		AND	
DOC L01		B.2 --------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. -------------------------------------	
DOC L01		Be in MODE 4.	54 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.6.2.3.a.1	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~~. Verify the buffering agent baskets are in place and intact.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	② ③ ③
4.6.2.3.a.2	SR 3.6.7.2	~~Verify spray additive tank solution volume is ≥ [2568] gal and ≤ [4000] gal.~~ Verify the buffering agent baskets collectively contain > 7500 pounds (154 cubic feet) of sodium tetraborate decahydrate, or equivalent.	~~[184 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	② ③ ③
	~~SR 3.6.7.3~~	~~Verify spray additive tank [NaOH] solution concentration is ≥ [30]% and ≤ [32]% by weight.~~	~~[184 days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program~~]	②
	~~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] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~	②

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
~~SR 3.6.7.5~~	~~Verify spray additive flow [rate] from each solution's flow path.~~	~~[5 years~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

②

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.7, CONTAINMENT SPRAY SYSTEM

1. The type of Containment (Atmospheric, Subatmospheric, Ice Condenser, and Dual) is deleted because it is unnecessary (only one Containment Specification is used in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS). This information is provided in NUREG-1431, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation.

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

3. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed, and the proper plant specific information/value is provided. This is acceptable because the information/value is revised to reflect the current licensing basis.

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

B 3.6 CONTAINMENT SYSTEMS

B 3.6.7 ~~Spray Additive~~ Recirculation pH Control System ~~(Atmospheric, Subatmospheric, Ice Condenser, and Dual)~~ ② ①

BASES

BACKGROUND

The ~~Spray Additive~~ Recirculation pH Control 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

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~~.

INSERT 1

~~Eductor Feed Systems Only~~

~~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

~~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 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

INSERT 1

The Recirculation pH Control System is a passive safeguard consisting of 10 stainless steel wire mesh baskets (2 large and 8 small) containing sodium tetra borate decahydrate (NaTB) located in the containment basement (14' elevation). The initial containment spray will be boric acid solution from the Refueling Water Storage Tank. The recirculation pH control system adds NaTB to the Containment Sump when the level of boric acid solution from the Containment Spray and the coolant lost from the Reactor Coolant System rises above the bottom of the buffering agent baskets. As the sump level rises, the NaTB will begin to dissolve. The addition of NaTB from the buffering agent baskets ensures the containment sump pH will be greater than 7.0. The resultant alkaline pH of the spray enhances the ability of the recirculated spray to scavenge fission products from the containment atmosphere. The alkaline pH in the recirculation sump water minimizes the evolution of iodine and minimizes the occurrence of chloride and caustic stress corrosion on stainless steel piping systems exposed to the solution.

BASES

BACKGROUND (continued)

~~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 31% NaOH solution is drawn into the spray pump suctions. 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 ≥ 9.0 and ≤ 9.5. 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~~. ②

APPLICABLE SAFETY ANALYSES

Recirculation pH Control

The ~~Spray Additive~~ System is essential to the removal of airborne iodine within containment following a DBA. ②

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

34.5

INSERT 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."~~

~~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.~~ ②

Recirculation pH Control

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

LCO

Recirculation pH Control

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 solution pH to a level conducive to iodine removal, namely, to between ~~[7.2 and 11.0]~~. 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~~. ② ② ③ ②

amount of NaTB in the buffering agent baskets

7.0 and 8.05

②

INSERT 2

The NaTB Baskets are designed to disperse the NaTB readily once in contact with flood water. The NaTB Baskets located in the containment sump will passively achieve a minimum pH of 7.0 at the onset of containment spray recirculation and will ensure that environmental qualification and chemical effects pH limits are not exceeded. The NaTB Baskets are located below the minimum post-LOCA flood height ensuring the NaTB is quickly and completely dissolved in the sump fluid.

BASES

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~~ Recirculation pH Control System. The ~~Spray Additive~~ Recirculation pH Control System assists in reducing the iodine fission product inventory prior to release to the environment. ②

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~~ Recirculation pH Control 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 enhancement is reduced in this condition. The Containment Spray System would still be available and would remove some iodine from the containment atmosphere in the event of a DBA. The 72 hour Completion Time takes into account ~~the redundant flow path capabilities and~~ the low probability of the worst case DBA occurring during this period. ② ②

B.1 and B.2

If the ~~Spray Additive~~ Recirculation pH Control System cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which overall plant risk is reduced. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 54 hours. ②

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 2). In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 2, the steam turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.

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

BASES

ACTIONS (continued)

results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems. The extended interval to reach MODE 4 allows 48 hours to restore the Recirculation pH Control ~~Spray Additive~~ System to OPERABLE status in MODE 3. This is reasonable when considering the reduced pressure and temperature conditions in MODE 3 for the release of radioactive material from the Reactor Coolant System. ②

SURVEILLANCE REQUIREMENTS

SR 3.6.7.1

INSERT 3

~~Verifying the correct alignment of Spray Additive System manual, power operated, and automatic valves in the spray additive flow path provides assurance that the system is able to provide additive to the Containment Spray System in the event of a DBA. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these valves were verified to be in the correct position prior to locking, sealing, or securing. This SR does not require any testing or valve manipulation. Rather, it involves verification that those valves outside containment and capable of potentially being mispositioned are in the correct position.~~

~~[The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.~~

~~OR~~ ② ④

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

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

②

INSERT 3

Verifying the buffering agent baskets are in place and intact provides assurance that the system is able to provide additive to the containment sump in the event of a DBA. This verification ensures the NaTB baskets are in the proper location, the leveling feet are in the proper position, the baskets are at the proper height off the floor, and basket covers are installed (Ref. 3).

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.7.2

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~~ amount of NaTB must ~~provide~~ be a sufficient ~~volume of spray additive~~ to adjust pH for all recirculated water ~~injected~~. This SR is performed to verify the amount of NaTB ~~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 ③

~~OR~~

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

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~ ⑤

~~SR 3.6.7.3~~

~~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.~~ ②

~~OR~~

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

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-------------------------------------REVIEWER'S NOTE-------------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~ ②

~~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 [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.~~ ②

~~OR~~

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

~~-------------------------------------REVIEWER'S NOTE-------------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~ ②

~~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. [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

~~OR~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~ ②

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

REFERENCES

1. U FSAR, Chapter ~~[15]~~ 14. ② ③

2. WCAP-16294-NP-A, Rev. 1, "Risk-Informed Evaluation of Changes to Technical Specification Required Action Endstates for Westinghouse NSSS PWRs," June 2010.

3. FSAR, Section 6.4. ②

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.7 BASES, RECIRCULATION pH CONTROL SYSTEM

1. The type of Containment (Atmospheric, Subatmospheric, Ice Condenser, and Dual) is deleted because it is unnecessary (only one Containment Specification is used in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS). This information is provided in NUREG 1431, Rev. 5.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion but serves no purpose in a plant specific implementation.

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

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

4. Changes are made to be consistent with changes made to the Specification.

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

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.6.7, RECIRCULATION pH CONTROL SYSTEM

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

ATTACHMENT 8

Relocated/Deleted Current Technical Specifications (CTS)

None

ATTACHMENT 9

Improved Standard Technical Specifications (ISTS) Not Adopted in the Turkey Point ITS

- 3.6.8 – Shield Building (Dual and Ice Condenser)
- 3.6.9 – Hydrogen Mixing System (HMS) (Atmospheric, Ice Condenser, and Dual)
- 3.6.10 – Hydrogen Ignition System (HIS) (Ice Condenser)
- 3.6.11 – Iodine Cleanup System (ICS) (Atmospheric and Subatmospheric)
- 3.6.12 – Vacuum Relief Valves (Atmospheric and Ice Condenser)
- 3.6.13 – Shield Building Air Cleanup System (SBACS) (Dual and Ice Condenser)
- 3.6.14 – Air Return System (ARS) (Ice Condenser)
- 3.6.15 – Ice Bed (Ice Condenser)
- 3.6.16 – Ice Condenser Doors (Ice Condenser)
- 3.6.17 – Divider Barrier Integrity (Ice Condenser)
- 3.6.18 – Containment Recirculation Drains (Ice Condenser)
- 3.6.19 – Containment Sump

ISTS 3.6.8, SHIELD BUILDING (DUAL AND ICE CONDENSER)

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

①

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.8 Shield Building (Dual and Ice Condenser)~~

~~LCO 3.6.8~~ ~~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~~

①

~~SURVEILLANCE REQUIREMENTS~~

~~SURVEILLANCE~~	~~FREQUENCY~~
~~SR 3.6.8.1 [Verify annulus negative pressure is > [5] inches water gauge.~~	~~[12 hours~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

①

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~SR 3.6.8.2~~	~~Verify one shield building access door in each access opening is closed.~~	~~[31 days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.8.3~~	~~[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]~~
~~SR 3.6.8.4~~	~~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~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

1

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.8, "SHIELD BUILDING (DUAL AND ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.8, "Shield Building (Dual and Ice Condenser)," is not being adopted because Turkey Point (PTN) Unit 3 and Unit 4 design does not include the Shield Building. ISTS 3.6.8 Bases Background Section states that 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). ISTS 3.6.8 Bases Applicable Safety Analyses Section further states that 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. At PTN, the reactor containment, a continuous, post-tensioned concrete structure with a welded steel liner to provide leak tightness, completely encloses the entire reactor and reactor coolant system to ensure, with certain engineered safeguards that an acceptable upper limit for leakage of radioactive materials to the environment will not be exceeded, even if the Maximum Hypothetical Accident were to occur. The design assures that the integrity of the reactor containment is maintained under normal and accident conditions. Because the PTN containment is a concrete structure, with a welded steel line no shield building exists. Therefore, ISTS 3.6.8 is not included in the PTN Improved Technical Specifications.

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

~~B 3.6 CONTAINMENT SYSTEMS~~

~~B 3.6.8 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.~~ ①

~~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 3.6.8.1~~ 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.~~

~~OR~~

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

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

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SR 3.6.8.2~~

~~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.~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~ ①

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

~~[SR 3.6.8.3~~

~~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.]~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SR 3.6.8.4~~

~~The Shield Building Air Cleanup System produces a negative pressure to prevent leakage from the building. SR 3.6.8.4 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 3.6.8.4, 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 3.6.8.4, 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.~~ ①

~~OR~~

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

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

~~REFERENCES None.~~

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.8 BASES, "SHIELD BUILDING (DUAL AND ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.8 Bases, "Shield Building (Dual and Ice Condenser)," are not included in the Turkey Point Unit 3 and Unit 4 (PTN) Improved Technical Specifications (ITS) because the Specification, ISTS 3.6.8, has not been included in the PTN ITS.

ISTS 3.6.9, HYDROGEN MIXING SYSTEM (HMS) (ATMOSPHERIC, ICE CONDENSER, AND DUAL)

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

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.9 Hydrogen Mixing System (HMS) (Atmospheric, 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 Restore HMS train to OPERABLE status.~~	~~30 days~~ ①
~~B. Two HMS trains inoperable.~~	~~B.1 Verify by administrative means that the hydrogen control function is maintained.~~	~~1 hour~~ ~~AND~~ ~~Once per 12 hours thereafter~~
	~~AND~~	
	~~B.2 Restore one HMS train to OPERABLE status.~~	~~7 days~~
~~C. Required Action and associated Completion Time not met.~~	~~C.1 Be in MODE 3.~~	~~6 hours~~

~~SURVEILLANCE REQUIREMENTS~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~SR 3.6.9.1~~	~~Operate each HMS train for ≥ 15 minutes.~~	~~[92 days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.9.2~~	~~Verify each HMS train flow rate on slow speed is ≥ [4000] cfm.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.9.3~~	~~Verify each HMS train starts on an actual or simulated actuation signal.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

①

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.9, "HYDROGEN MIXING SYSTEM (HMS) (ATMOSPHERIC, ICE CONDENSER, AND DUAL)"

1. Improved Standard Technical Specification (ISTS) 3.6.9, "Hydrogen Mixing System (HMS) (Atmospheric, Ice Condenser, and Dual)," is not being adopted because Turkey Point (PTN) Unit 3 and Unit 4 design does not include the Hydrogen Mixing System. ISTS 3.6.9 Bases Background Section states that 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. ISTS 3.6.9 Bases Applicable Safety Analyses Section further states that the HMS provides the capability for reducing the local hydrogen concentration to approximately the bulk average concentration. At PTN, hydrogen mixing within the containment is accomplished by the Containment Emergency Cooling System fans and the Containment Spray System. These systems and the internal structures of the containment are designed to maintain a well-mixed containment atmosphere, and to prevent hydrogen pocketing. Because at PTN hydrogen mixing within the containment is accomplished by the Containment Emergency Cooling System fans and the Containment Spray System, a separate HMS is not required. Therefore, ISTS 3.6.9 is not included in the PTN Improved Technical Specifications.

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

~~B 3.6 CONTAINMENT SYSTEMS~~

~~B 3.6.9 Hydrogen Mixing System (HMS) (Atmospheric, 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.~~ ①

~~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~~

~~BASES~~

~~BACKGROUND (continued)~~

~~be operated on fast speed during normal operation when a containment 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~~ ①

~~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.~~

~~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 Containment Spray System and Hydrogen Purge System.~~ ①

~~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 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.~~

~~BASES~~

~~ACTIONS (continued)~~

~~---------------------------------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.~~

①

~~C.1~~

~~If an inoperable HMS train cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems.~~

~~SURVEILLANCE REQUIREMENTS~~

~~SR 3.6.9.1~~

~~Operating each HMS train for ≥ 15 minutes ensures that 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.~~

~~OR~~

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

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

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

~~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.~~ ①

~~OR~~

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

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

~~SR 3.6.9.3~~

~~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~~

(1)

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~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.~~

~~OR~~

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

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

(1)

~~REFERENCES~~

1. ~~10 CFR 50.44.~~
2. ~~10 CFR 50, Appendix A, GDC 41.~~
3. ~~Regulatory Guide 1.7, Revision [1].~~

(1)

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.9 BASES, "HYDROGEN MIXING SYSTEM (HMS) (ATMOSPHERIC, ICE CONDENSER, AND DUAL)"

1. Improved Standard Technical Specification (ISTS) 3.6.9 Bases, "Hydrogen Mixing System (HMS) (Atmospheric, Ice Condenser, and Dual)," are not included in the Turkey Point Unit 3 and Unit 4 (PTN) Improved Technical Specifications (ITS) because the Specification, ISTS 3.6.9, has not been included in the PTN ITS.

ISTS 3.6.10, HYDROGEN IGNITION SYSTEM (HIS) (ICE CONDENSER)

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

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.10 Hydrogen Ignition System (HIS) (Ice Condenser)~~

~~LCO 3.6.10 Two HIS trains shall be OPERABLE.~~

~~APPLICABILITY: MODES 1 and 2.~~

~~ACTIONS~~

~~CONDITION~~	~~REQUIRED ACTION~~	~~COMPLETION TIME~~
~~A. One HIS train inoperable.~~	~~A.1 Restore HIS train to OPERABLE status.~~	~~7 days~~ ~~[OR~~ ~~In accordance with the Risk Informed Completion Time Program]~~
	~~OR~~	
	~~A.2 Perform SR 3.6.10.1 on the OPERABLE train.~~	~~Once per 7 days~~
~~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~~ ~~[OR~~ ~~In accordance with the Risk Informed Completion Time Program]~~
~~C. Required Action and associated Completion Time not met.~~	~~C.1 Be in MODE 3.~~	~~6 hours~~

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~~SURVEILLANCE REQUIREMENTS~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~SR 3.6.10.1~~	~~Energize each HIS train power supply breaker and verify ≥ [32] ignitors are energized in each train.~~	~~[92 days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.10.2~~	~~Verify at least one hydrogen ignitor is OPERABLE in each containment region.~~	~~[92 days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.10.3~~	~~Energize each hydrogen ignitor and verify temperature is ≥ [1700]°F.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

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JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.10, "HYDROGEN IGNITION SYSTEM (HIS) (ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.10, "Hydrogen Ignition System (HIS) (Ice Condenser)," is not included in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS). PTN is not an ice condenser containment design. Therefore, ISTS 3.6.8 is not included in the PTN ITS.

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

~~B 3.6 CONTAINMENT SYSTEMS~~

~~B 3.6.10 Hydrogen Ignition System (HIS) (Ice Condenser)~~

~~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).~~

~~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.~~ ①

~~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] 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.~~

~~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 pockets of hydrogen at increased concentrations would burn before~~

~~BASES~~

~~BACKGROUND (continued)~~

~~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.~~

~~APPLICABLE SAFETY ANALYSES~~

~~The HIS causes hydrogen in containment to burn in a controlled manner as it accumulates following a degraded core accident (Ref. 3). 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.~~

~~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 ignitors 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 hydrogen ignitors satisfy Criterion 4 of 10 CFR 50.36(c)(2)(ii).~~ ①

~~LCO~~

~~Two HIS trains must be OPERABLE with power from two independent, safety related power supplies.~~

~~For this unit, an OPERABLE HIS train consists of 32 of 33 ignitors energized on the train.~~

~~Operation with at least one HIS train ensures that the hydrogen in containment can be burned in a controlled manner. Unavailability of both HIS 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.~~

~~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 v/o assuming a worst case single failure. This prevents overpressurization of containment and damage to safety related equipment and instruments located within containment.~~

~~BASES~~

~~APPLICABILITY (continued)~~

~~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.~~

~~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.~~

~~ACTIONS~~ ~~A.1 and A.2~~

~~With one HIS train inoperable, the inoperable train must be restored to OPERABLE status within 7 days [or in accordance with the Risk Informed Completion Time Program] or the OPERABLE train must be verified OPERABLE frequently by performance of SR 3.6.10.1. 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.~~

~~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.~~

~~Required Action B.1 calls for the restoration of one hydrogen ignitor in each region to OPERABLE status within 7 days [or in accordance with the Risk Informed Completion Time Program]. The 7 day Completion Time is based on the same reasons given under Required Action A.1.~~

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~~BASES~~

~~ACTIONS (continued)~~

~~C.1~~

~~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 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.~~ ①

~~OR~~

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

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

~~SR 3.6.10.2~~

~~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.~~

~~OR~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

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

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

~~SR 3.6.10.3~~

~~A more detailed functional test is performed 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 [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 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.~~ ①

~~OR~~

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

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

~~REFERENCES~~

~~1. 10 CFR 50.44.~~

~~2. 10 CFR 50, Appendix A, GDC 41.~~

~~3. FSAR, Section [6.2].~~

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.10 BASES, "HYDROGEN IGNITION SYSTEM (HIS) (ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.10 Bases, "Hydrogen Ignition System (HIS) (Ice Condenser)," are not included in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS) because the Specification, ISTS 3.6.10, has not been included in the PTN ITS.

ISTS 3.6.11, IODINE CLEANUP SYSTEM (ICS) (ATMOSPHERIC AND SUBATMOSPHERIC)

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

~~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.~~

①

~~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.~~	~~6 hours~~
	~~AND~~	
	~~B.2 --------------NOTE--------------~~ ~~LCO 3.0.4.a is not applicable when entering MODE 4.~~ ~~-----------------------------------~~ ~~Be in MODE 4.~~	~~12 hours~~

~~SURVEILLANCE REQUIREMENTS~~

~~SURVEILLANCE~~	~~FREQUENCY~~
~~SR 3.6.11.1 Operate each ICS train for ≥ 15 continuous minutes [with heaters operating].~~	~~[31 days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~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, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.11.4~~	~~[Verify each ICS filter bypass damper can be opened, except for dampers that are locked, sealed, or otherwise secured in the open position.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]]~~

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JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.11, "IODINE CLEANUP SYSTEM (ICS) (ATMOSPHERIC AND SUBATMOSPHERIC))"

1. Improved Standard Technical Specification (ISTS) 3.6.11, "Iodine Cleanup System (ICS) (Atmospheric and Subatmospheric)," is not being adopted because Turkey Point Nuclear Generating Station (PTN) design does not include the ICS. ISTS 3.6.11 Bases Background Section states that the ICS is provided 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 and consists of two 100% capacity, separate, independent, and redundant trains. At PTN, the emergency containment filtering system is no longer credited to reduce the iodine concentration in the containment atmosphere due to the implementation of the Alternative Source Term (AST) methodology for Turkey Point. The AST methodology implementation credits the use of sodium tetraborate decahydrate (NaTB) inside containment for post-LOCA (Loss of Coolant Accident) containment sump fluid pH control and for post-LOCA iodine removal/retention in conjunction with containment spray system operation. Therefore, ISTS 3.6.11 is not included in the PTN Improved Technical Specifications.

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

~~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.~~ ①

~~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. 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.]~~

~~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~~ ①

~~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.~~

~~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:~~

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~~BASES~~

~~ACTIONS (continued)~~

~~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 overall plant risk is reduced. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.~~

~~Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 5). In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 5, the steam turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.~~ ①

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

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

~~BASES~~

~~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. [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.~~

~~OR~~

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

~~-------------------------------REVIEWER'S NOTE------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
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~~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 SR excludes automatic dampers and valves that are locked, sealed, or otherwise secured in the actuated position. The SR does not apply to dampers or valves that are locked, sealed, or otherwise secured in the actuated position since the affected dampers or valves were verified to be in the actuated position prior to being locked, sealed, or otherwise secured. Placing an automatic valve or damper in a locked, sealed, or otherwise secured position requires an assessment of the OPERABILITY of the system or any supported systems, including whether it is necessary for the valve or~~

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~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~damper to be repositioned to the non-actuated position to support the accident analysis. Restoration of an automatic valve or damper to the non-actuated position requires verification that the SR has been met within its required Frequency. [The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. Furthermore, the Frequency was developed considering that the system equipment OPERABILITY is demonstrated at a 31 day Frequency by SR 3.6.11.1.~~

~~OR~~

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

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
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~~[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 SR excludes automatic dampers that are locked, sealed, or otherwise secured in the open position. The SR does not apply to dampers that are locked, sealed, or otherwise secured in the open position since the affected dampers were verified to be in the open position prior to being locked, sealed, or otherwise secured. Placing an automatic damper in a locked, sealed, or otherwise secured position requires an assessment of the OPERABILITY of the system or any supported systems, including whether it is necessary for the damper to be closed to support the accident analysis. Restoration of an automatic damper to the closed position requires verification that the SR has been met within its required Frequency. [The [18] month Frequency is considered to be acceptable~~

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~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~based on the damper reliability and design, the mild environmental conditions in the vicinity of the dampers, and the fact that operating experience has shown that the dampers usually pass the Surveillance when performed at the [18] month Frequency.~~

~~OR~~

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

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

~~5. WCAP-16294-NP-A, Rev. 1, "Risk-Informed Evaluation of Changes to Technical Specification Required Action Endstates for Westinghouse NSSS PWRs," June 2010.~~

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JUSTIFICATION FOR DEVIATIONS
ITS 3.6.11 BASES, "IODINE CLEANUP SYSTEM (ICS) (ATMOSPHERIC AND SUBATMOSPHERIC)"

1. Improved Standard Technical Specification (ISTS) 3.6.11 Bases, "Iodine Cleanup System (ICS) (Atmospheric and Subatmospheric)," are not included in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS) Bases because the Specification, ISTS 3.6.11, has not been included in the PTN ITS.

ISTS 3.6.12, VACUUM RELIEF VALVES (ATMOSPHERIC AND ICE CONDENSER)

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

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~~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.~~	~~6 hours~~
	~~AND~~	
	~~B.2 -------------- NOTE ------------- LCO 3.0.4.a is not applicable when entering MODE 4. ----------------------------------- Be in MODE 4.~~	~~12 hours~~

~~SURVEILLANCE REQUIREMENTS~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~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 (ATMOSPHERIC AND ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.12, "Vacuum Relief Valves (Atmospheric and Ice Condenser)," is not being adopted because Turkey Point Nuclear Generating Station (PTN) design does not include Vacuum Relief Valves. ISTS 3.6.12 Bases Background Section states that the purpose of the vacuum relief lines is to protect the containment vessel against negative pressure (i.e., a lower pressure inside than outside). ISTS 3.6.12 Bases Applicable Safety Analyses Section further states that the 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. At PTN the external design pressure of the containment shell is 2.5 psig. This value corresponds to the maximum external pressure that could be developed if the containment were sealed during a period of low barometric pressure and high temperature and subsequently the containment atmosphere was cooled with a concurrent rise in barometric pressure; however, vacuum breakers are not provided. Therefore, ISTS 3.6.12 is not included in the PTN Improved Technical Specifications.

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

~~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.~~ ①

~~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).~~

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~~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.~~

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~~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 overall plant risk is reduced. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.~~

~~Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 2). In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 2, the steam turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling~~

~~BASES~~

~~ACTIONS (continued)~~

~~be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.~~

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

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

~~SURVEILLANCE REQUIREMENTS~~

~~SR 3.6.12.1~~

~~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 the ASME Code (Ref. 3). Therefore, SR Frequency is governed by the INSERVICE TESTING PROGRAM.~~ ①

~~REFERENCES~~

1. ~~FSAR, Section [6.2].~~
2. ~~WCAP-16294-NP-A, Rev. 1, "Risk-Informed Evaluation of Changes to Technical Specification Required Action Endstates for Westinghouse NSSS PWRs," June 2010.~~
3. ~~ASME Code for Operation and Maintenance of Nuclear Power Plants.~~

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.12 BASES, "VACUUM RELIEF VALVES (ATMOSPHERIC AND ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.12 Bases, "Vacuum Relief Valves (Atmospheric and Ice Condenser)," are not included in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS) Bases because the Specification, ISTS 3.6.12, has not been included in the PTN ITS.

ISTS 3.6.13, SHIELD BUILDING AIR CLEANUP SYSTEM (SBACS) (DUAL AND ICE CONDENSER)

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

~~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.~~ ~~AND~~ ~~B.2 -------------NOTE-------------~~ ~~LCO 3.0.4.a is not applicable when entering MODE 4.~~ ~~---------------------------------~~ ~~Be in MODE 4.~~	~~6 hours~~ ~~12 hours~~

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~~SURVEILLANCE REQUIREMENTS~~

~~SURVEILLANCE~~	~~FREQUENCY~~
~~SR 3.6.13.1 Operate each SBACS train for ≥ 15 continuous minutes [with heaters operating].~~	~~[31 days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

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~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SURVEILLANCE~~	~~FREQUENCY~~
~~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, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.13.4 [Verify each SBACS filter bypass damper can be opened, except for dampers that are locked, sealed, or otherwise secured in the open position.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]]~~
~~SR 3.6.13.5 Verify each SBACS train flow rate is ≥ [ ] cfm.~~	~~[[18] months on a STAGGERED TEST BASIS~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

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JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.13, "SHIELD BUILDING AIR CLEANUP SYSTEM (SBACS) (DUAL AND ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.13, "Shield Building Air Cleanup System (SBACS) (Dual and Ice Condenser)," is not being adopted because Turkey Point Nuclear Generating Station (PTN) design does not include the Shield Building; the PTN containment is a concrete structure with a welded steel line. Therefore, ISTS 3.6.13 is not included in the PTN Improved Technical Specifications.

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

~~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.~~ 1

~~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. [The cooling coils cool the air to keep the charcoal beds from becoming too hot due to absorption of fission product.]~~

~~BACKGROUND (continued)~~

~~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.~~ ①

~~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 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.~~

~~BASES~~

~~APPLICABILITY (continued)~~

~~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 overall plant risk is reduced. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.~~ ①

~~Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 4). In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 4, the steam turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.~~

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

~~BASES~~

~~ACTIONS (continued)~~

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

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

~~SURVEILLANCE REQUIREMENTS~~

~~SR 3.6.13.1~~

~~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. [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.~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~ ①

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

~~SR 3.6.13.2~~

~~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.~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SR 3.6.13.3~~

~~The automatic startup ensures that each SBACS train responds properly. The SR excludes automatic dampers and valves that are locked, sealed, or otherwise secured in the actuated position. The SR does not apply to dampers or valves that are locked, sealed, or otherwise secured in the actuated position since the affected dampers or valves were verified to be in the actuated position prior to being locked, sealed, or otherwise secured. Placing an automatic valve or damper in a locked, sealed, or otherwise secured position requires an assessment of the OPERABILITY of the system or any supported systems, including whether it is necessary for the valve or damper to be repositioned to the non-actuated position to support the accident analysis. Restoration of an automatic valve or damper to the non-actuated position requires verification that the SR has been met within its required Frequency. [The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore the Frequency was concluded to be acceptable from a reliability standpoint. Furthermore, the SR interval was developed considering that the SBACS equipment OPERABILITY is demonstrated at a 31 day Frequency by SR 3.6.13.1.~~ ①

~~OR~~

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

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

~~[SR 3.6.13.4~~

~~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 SR excludes automatic dampers that are locked, sealed, or otherwise~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~secured in the open position. The SR does not apply to dampers that are locked, sealed, or otherwise secured in the open position since the affected dampers were verified to be in the open position prior to being locked, sealed, or otherwise secured. Placing an automatic damper in a locked, sealed, or otherwise secured position requires an assessment of the OPERABILITY of the system or any supported systems, including whether it is necessary for the damper to be closed to support the accident analysis. Restoration of an automatic damper to the closed position requires verification that the SR has been met within its required Frequency. [The [18] month Frequency is considered to be acceptable based on 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.~~

~~OR~~

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

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ ①
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~~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 system flow rate. [The [18] month Frequency on a STAGGERED TEST BASIS is consistent with Regulatory Guide 1.52 (Ref. 5) guidance for functional testing.~~

~~OR~~

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

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
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~~REFERENCES~~ ①

~~1. 10 CFR 50, Appendix A, GDC 41.~~

~~2. FSAR, Section [6.5].~~

~~3. FSAR, Chapter [15].~~

~~4. WCAP-16294-NP-A, Rev. 1, "Risk-Informed Evaluation of Changes to Technical Specification Required Action Endstates for Westinghouse NSSS PWRs," June 2010.~~

~~5. Regulatory Guide 1.52, Revision [2].~~

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.13 BASES, "SHIELD BUILDING (DUAL AND ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.13 Bases, "Shield Building (Dual and Ice Condenser)," are not included in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS) Bases because the Specification, ISTS 3.6.13, has not been included in the PTN ITS.

ISTS 3.6.14, AIR RETURN SYSTEM (ARS) (ICE CONDENSER)

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

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.14 Air Return System (ARS) (Ice Condenser)~~

~~LCO 3.6.14 Two ARS trains shall be OPERABLE.~~

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

~~ACTIONS~~

~~CONDITION~~	~~REQUIRED ACTION~~	~~COMPLETION TIME~~
~~A. One ARS train inoperable.~~	~~A.1 Restore ARS train to OPERABLE status.~~	~~72 hours~~ ~~[OR~~ ~~In accordance with the Risk Informed Completion Time Program]~~
~~B. Required Action and associated Completion Time not met.~~	~~B.1 Be in MODE 3.~~ ~~AND~~ ~~B.2 --------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. -----------------------------------~~ ~~Be in MODE 4.~~	~~6 hours~~ ~~12 hours~~

①

~~SURVEILLANCE REQUIREMENTS~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~SR 3.6.14.1~~	~~Verify each ARS fan starts on an actual or simulated actuation signal, after a delay of ≥ [9.0] minutes and ≤ [11.0] minutes, and operates for ≥ 15 minutes.~~	~~[[92] days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.14.2~~	~~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].~~	~~[92 days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program~~
~~SR 3.6.14.3~~	~~Verify, with the ARS fan not operating, each ARS fan damper opens when ≤ [11.0] lb is applied to the counterweight.~~	~~[92 days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.14.4~~	~~[Verify each motor operated valve in the hydrogen collection 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~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]]~~

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JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.14, "AIR RETURN SYSTEM (ARS) (ICE CONDENSER))"

1. Improved Standard Technical Specification (ISTS) 3.6.14, "Air Return System (ARS) (Ice Condenser)," is not being adopted because Turkey Point Nuclear Generating Station (PTN) is not an ice condenser containment design. Therefore, ISTS 3.6.14 is not included in the PTN Improved Technical Specifications.

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

~~B 3.6 CONTAINMENT SYSTEMS~~

~~B 3.6.14 Air Return System (ARS) (Ice Condenser)~~

~~BASES~~

~~BACKGROUND~~

~~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.~~

~~The ARS provides post accident hydrogen mixing in selected areas of containment. The associated Hydrogen Skimmer System consists of hydrogen collection 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.~~ 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 headers with isolation valves. Each train is powered from a separate Engineered Safety Features (ESF) bus.~~

~~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. 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.~~

~~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 after actuation, circulating air through the containment volume and~~

~~BASES~~

~~BACKGROUND (continued)~~

~~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.~~

~~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.~~

~~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.~~

~~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.~~ ①

~~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 System. The containment vacuum relief valves are designed to accommodate inadvertent actuation of either or both systems.~~

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~~BASES~~

~~APPLICABLE SAFETY ANALYSES (continued)~~

~~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.~~

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

~~LCO~~

~~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.~~

~~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.~~

~~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

~~ACTIONS~~

~~A.1~~

~~If one of the required trains of the ARS is inoperable, it must be restored to OPERABLE status within 72 hours [or in accordance with the Risk Informed Completion Time Program]. The components in this degraded condition 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.~~

~~B.1 and B.2~~

~~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 overall plant risk is reduced. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.~~

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~~BASES~~

~~ACTIONS (continued)~~

~~Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 3). In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 3, the steam turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.~~

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

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~~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 3.6.14.1~~

~~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.~~

~~OR~~

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

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~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

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

~~SR 3.6.14.2~~

~~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.~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~ ①

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

~~SR 3.6.14.3~~

~~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.~~

~~OR~~

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

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

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

~~[SR 3.6.14.4~~

~~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.~~ ①

~~OR~~

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

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

~~REFERENCES~~

1. ~~FSAR, Section [6.2].~~
2. ~~10 CFR 50, Appendix K.~~
3. ~~WCAP-16294-NP-A, Rev. 1, "Risk-Informed Evaluation of Changes to Technical Specification Required Action Endstates for Westinghouse NSSS PWRs," June 2010.~~

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.14 BASES, "AIR RETURN SYSTEM (ARS) (ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.14 Bases, "Air Return System (ARS) (Ice Condenser)," are not included in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS) Bases because the Specification, ISTS 3.6.14, has not been included in the PTN ITS.

ISTS 3.6.15, ICE BED (ICE CONDENSER)

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

①

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.15 Ice Bed (Ice Condenser)~~

~~LCO 3.6.15 The ice bed shall be OPERABLE.~~

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

~~ACTIONS~~

~~CONDITION~~	~~REQUIRED ACTION~~	~~COMPLETION TIME~~
~~A. Ice bed inoperable.~~	~~A.1 Restore ice bed to OPERABLE status.~~	~~48 hours~~
~~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~~

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~~SURVEILLANCE REQUIREMENTS~~

~~SURVEILLANCE~~	~~FREQUENCY~~
~~SR 3.6.15.1 Verify maximum ice bed temperature is ≤ [27]°F.~~	~~[12 hours~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

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~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SURVEILLANCE~~	~~FREQUENCY~~
~~SR 3.6.15.2 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~~ ~~Verify:~~ ~~1. Zone A (radial rows [7,8,9]), has a total mass of ≥ [733,400] lbs.~~ ~~2. Zone B (radial rows [4,5,6]), has a total mass of ≥ [733,400] lbs.~~ ~~3. Zone C (radial rows [1,2,3]), has a total mass of ≥ [733,400] lbs.~~	~~[18 months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.15.3 Verify that the ice mass of each basket sampled in SR 3.6.15.2 is ≥ 600 lbs.~~	~~[18 months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.15.4 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~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

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~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~SR 3.6.15.5~~	~~-----------------------------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] ppm and~~ ~~b. pH is ≥ [9.0] and ≤ [9.5].~~	~~[[54] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.15.6~~	~~Visually inspect, for detrimental structural wear, cracks, corrosion, or other damage, two ice baskets from each group of bays 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.~~	~~[40 months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.15.7~~	~~-----------------------------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 3.6.15.5.~~	~~Each ice addition~~

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JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.15, "ICE BED (ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.15, "Ice Bed (Ice Condenser)," is not being adopted because Turkey Point Nuclear Generating Station (PTN) is not an ice condenser containment design. Therefore, ISTS 3.6.15 is not included in the PTN Improved Technical Specifications.

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

~~B 3.6 CONTAINMENT SYSTEMS~~

~~B 3.6.15 Ice Bed (Ice Condenser)~~

~~BASES~~

~~BACKGROUND~~

~~The ice bed consists of a minimum of [2,200,000] lb of ice stored within the ice condenser. The 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.~~ ①

~~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) separates the upper and lower compartments and ensures that the steam is directed into the ice condenser.~~

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~~BASES~~

~~BACKGROUND (continued)~~

~~The ice, together with the containment spray, is adequate to absorb 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) 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.~~

~~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. 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.~~ 1

~~It is important for ice to exist in the ice baskets, the ice to be appropriately 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.~~

~~Two phenomena that can degrade the ice bed during the long service period are:~~

~~a. Loss of ice by melting or sublimation and~~

~~b. Obstruction of flow passages through the ice bed due to buildup of ice.~~

~~BASES~~

~~BACKGROUND (continued)~~

~~Both of these degrading phenomena are reduced by minimizing air leakage into and out of the ice condenser.~~

~~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.~~ ①

~~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."~~

~~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.~~

~~BASES~~

~~APPLICABLE SAFETY ANALYSES (continued)~~

~~The ice bed satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).~~

~~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 provide core SDM (boron content) and remove radioactive iodine from the containment atmosphere when the melted ice is recirculated through the ECCS and the Containment Spray System, respectively.~~

~~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.~~

①

~~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.~~

~~B.1 and B.2~~

~~If the ice bed cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS~~

~~SR 3.6.15.1~~

~~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.~~

~~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.~~

~~OR~~

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

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

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~~SR 3.6.15.2~~

~~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).~~

~~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.~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~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 one by adding 20 or more randomly selected baskets to verify the total mass of that Radial Zone.]~~

~~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~~

~~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.~~ ①

~~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.~~

~~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.~~

~~[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 the 18 month Frequency, the minimum mass and distribution requirements in the ice bed are maintained.~~

~~OR~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

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

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

~~SR 3.6.15.3~~

~~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.~~

~~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. Reference 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.~~ ①

~~As documented in Reference 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.~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SR 3.6.15.4~~

~~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:~~ ①

~~a. between ice baskets, and~~

~~b. past lattice frames and wall panels.~~

~~Due to a 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 on 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~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~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.~~

~~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, and can be brushed off with the open hand.~~

~~SR 3.6.15.5~~

~~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 value is used to assure reactor subcriticality in a post LOCA environment, while the maximum boron concentration is used as the bounding value in the hot leg switchover timing calculation (Ref. 3). 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 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 [54] months is intended to be consistent with the expected length of three fuel cycles, and was developed considering these facts:~~ ①

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~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.~~

~~OR~~

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

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~ ①
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
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~~SR 3.6.15.6~~

~~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. 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. [The Frequency of 40 months for a visual inspection of the structural soundness of the ice baskets is 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.~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~OR~~

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

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
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~~SR 3.6.15.7~~

~~This SR ensures that initial ice fill and any subsequent ice additions meet the boron concentration and pH requirements of SR 3.6.15.5. 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.~~ ①

~~REFERENCES~~

1. ~~FSAR, Section [6.2].~~
2. ~~10 CFR 50, Appendix K.~~
3. ~~[Westinghouse letter, WAT-D-10686, "Upper Limit Ice Boron Concentration In Safety Analysis."]~~
4. ~~Topical Report ICUG-001, "Application of the Active Ice Mass Management (AIMM) Concept to the Ice Condenser Ice Mass Technical Specifications," Revision 3, September 2003.~~
5. ~~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)."~~

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.15 BASES, "ICE BED (ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.15 Bases, "Ice Bed (Ice Condenser)," are not included in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS) Bases because the Specification, ISTS 3.6.15, has not been included in the PTN ITS.

ISTS 3.6.16, ICE CONDENSER DOORS (ICE CONDENSER)

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

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.16 Ice Condenser Doors (Ice Condenser)~~

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~~LCO 3.6.16 The ice condenser inlet doors, intermediate deck doors, and top deck [doors] shall be OPERABLE and closed.~~

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

~~ACTIONS~~

~~--NOTE--~~
~~Separate Condition entry is allowed for each ice condenser door.~~
~~--~~

~~CONDITION~~	~~REQUIRED ACTION~~	~~COMPLETION TIME~~
~~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~~ ~~[OR~~ ~~In accordance with the Risk Informed Completion Time Program]~~
~~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.~~ ~~AND~~ ~~B.2 Restore ice condenser door to OPERABLE status and closed positions.~~	~~Once per 4 hours~~ ~~14 days~~ ~~[OR~~ ~~In accordance with the Risk Informed Completion Time Program]~~

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~~ACTIONS (continued)~~

~~CONDITION~~	~~REQUIRED ACTION~~	~~COMPLETION TIME~~
~~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~~
~~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~~

~~SURVEILLANCE REQUIREMENTS~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~SR 3.6.16.1~~	~~Verify all inlet doors indicate closed by the Inlet Door Position Monitoring System.~~	~~[12 hours~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~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~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

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~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~SR 3.6.16.3~~	~~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~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.16.4~~	~~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~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

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~~SURVEILLANCE REQUIREMENTS (continued)~~

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~~SURVEILLANCE~~		~~FREQUENCY~~
~~SR 3.6.16.5~~	~~Perform a torque test on [a sampling of ≥ 25% of the] inlet doors.~~	~~[3 months during first year after receipt of license]~~ ~~AND~~ ~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.16.6~~	~~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~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.16.7~~	~~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~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.16, "ICE CONDENSER DOORS (ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.16, "Ice Condenser Doors (Ice Condenser)," is not being adopted because Turkey Point Nuclear Generating Station (PTN) is not an ice condenser containment design. Therefore, ISTS 3.6.16 is not included in the PTN Improved Technical Specifications.

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

~~B 3.6 CONTAINMENT SYSTEMS~~

~~B 3.6.16 Ice Condenser Doors (Ice Condenser)~~

~~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~~

~~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.~~ ①

~~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 separates the upper and lower compartments and ensures that the steam is directed into the ice condenser.~~

~~BASES~~

~~BACKGROUND (continued)~~

~~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.~~

~~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.~~ ①

~~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.~~

~~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.~~

~~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~~

~~BASES~~

~~APPLICABLE SAFETY ANALYSES (continued)~~

~~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 3.6.5B, "Containment Air Temperature."~~

~~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.~~ ①

~~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 ice condenser doors satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).~~

~~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 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.~~

①

~~BASES~~

~~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~~

~~A Note provides clarification that, for this LCO, separate Condition entry is allowed for each ice condenser door.~~

~~A.1~~

~~If one or more ice condenser inlet doors are inoperable due to being physically restrained from opening, the door(s) must be restored to OPERABLE status within 1 hour [or in accordance with the Risk Informed Completion Time Program]. 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.~~

①

~~B.1 and B.2~~

~~If one or more ice condenser doors are 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 [or in accordance with the Risk Informed Completion Time Program], 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 of 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 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,~~

~~BASES~~

~~ACTIONS (continued)~~

~~Required Actions D.1 and D.2, not Required Action C.1, must be taken. 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.~~

~~C.1~~

~~If Required Actions B.1 or B.2 are 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 decrease 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.~~

~~D.1 and D.2~~

①

~~If the ice condenser doors 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 3.6.16.1~~

~~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.~~

~~OR~~

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

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

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

~~SR 3.6.16.2~~

~~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.~~

~~OR~~

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

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

~~SR 3.6.16.3~~

~~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.~~

~~OR~~

①

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

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

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

~~SR 3.6.16.4~~

~~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/ft2. [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.~~

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~~OR~~

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

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

~~SR 3.6.16.5~~

~~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:~~

①

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

1. ~~Verify that the torque, T(OPEN), required to cause opening motion at the [40]° open position is ≤ [195] in-lb,~~

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. ~~Calculate the frictional torque, T(FRICT) = 0.5 {T(OPEN) - T(CLOSE)}, and verify that the T(FRICT) is ≤ [40] in-lb.~~

~~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 [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

~~OR~~

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

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

~~SR 3.6.16.6~~

~~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:~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~Door~~	~~Lifting Force~~
~~a. Adjacent to crane wall~~	~~< 37.4 lb~~
~~b. Paired with door adjacent to crane wall~~	~~≤ 33.8 lb~~
~~c. Adjacent to containment wall~~	~~≤ 31.8 lb~~
~~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).~~

~~OR~~

~~The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~ ①

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

~~SR 3.6.16.7~~

~~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,~~

~~b. Excessive air leakage would be detected by temperature monitoring in the ice condenser, and~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~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.~~

~~OR~~

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

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

~~REFERENCES~~

~~1. FSAR, Chapter [15].~~

~~2. 10 CFR 50, Appendix K.~~

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JUSTIFICATION FOR DEVIATIONS
ITS 3.6.16 BASES, "ICE CONDENSER DOORS (ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.16 Bases, "Ice Condenser Doors (Ice Condenser)," are not included in the Turkey Point Unit 3 and Unit 4 (PTN) Improved Technical Specifications (ITS) Bases because the Specification, ISTS 3.6.16, has not been included in the PTN ITS.

ISTS 3.6.17, DIVIDER BARRIER INTEGRITY (ICE CONDENSER)

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

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.17 Divider Barrier Integrity (Ice Condenser)~~

~~LCO 3.6.17 Divider barrier integrity shall be maintained.~~

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

~~ACTIONS~~

①

~~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~~ ~~[OR~~ ~~In accordance with the Risk Informed Completion Time Program]~~
~~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~~

~~SURVEILLANCE REQUIREMENTS~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~SR 3.6.17.1~~	~~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~~
~~SR 3.6.17.2~~	~~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~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~
~~SR 3.6.17.3~~	~~Verify, by visual inspection, each personnel access door or equipment hatch that has been opened for personnel transit entry is closed.~~	~~After each opening~~
~~SR 3.6.17.4~~	~~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]%.]~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

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~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~SR 3.6.17.5~~	~~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] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

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JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.17, "DIVIDER BARRIER INTEGRITY (ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.17, "Divider Barrier Integrity (Ice Condenser)," is not being adopted because Turkey Point Nuclear Generating Station (PTN) is not an ice condenser containment design. Therefore, ISTS 3.6.17 is not included in the PTN Improved Technical Specifications.

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

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~~B 3.6 CONTAINMENT SYSTEMS~~

~~B 3.6.17 Divider Barrier Integrity (Ice Condenser)~~

~~BASES~~

~~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.~~

~~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.~~

~~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.~~

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~~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.~~

~~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 3.6.5B, "Containment Air Temperature."~~

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~~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 divider barrier satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).~~

~~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 Condition A). The divider barrier functions with the ice condenser to limit the pressure and temperature that could be expected following a DBA.~~

~~BASES~~

~~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 personnel access doors or equipment hatches are inoperable or open, except for personnel transit entry, 1 hour is allowed to restore the door(s) and equipment hatches to OPERABLE status and the closed position. 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. [Alternatively, a Completion Time can be determined in accordance with the Risk Informed Completion Time Program.]~~

~~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~~

~~If divider barrier integrity cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.~~

~~BASES~~

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~~SURVEILLANCE REQUIREMENTS~~

~~SR 3.6.17.1~~

~~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.~~

~~SR 3.6.17.2~~

~~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, 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.~~

~~OR~~

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

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

~~SR 3.6.17.3~~

~~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.~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SR 3.6.17.4~~

~~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 performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~

~~OR~~

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

~~--------------------------------REVIEWER'S NOTE--------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
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~~SR 3.6.17.5~~

~~Visual inspection of the seal around the perimeter provides assurance that the seal is properly secured in place. [The Frequency of [18] 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] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~

~~OR~~

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~~BASES~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

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

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
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~~REFERENCES 1. FSAR, Section [6.2].~~

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JUSTIFICATION FOR DEVIATIONS
ITS 3.6.17 BASES, "DIVIDER BARRIER INTEGRITY (ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.17 Bases, "Divider Barrier Integrity (Ice Condenser)," are not included in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS) Bases because the Specification, ISTS 3.6.17, has not been included in the PTN ITS.

ISTS 3.6.18, CONTAINMENT RECIRCULATION DRAINS (ICE CONDENSER)

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

~~3.6 CONTAINMENT SYSTEMS~~ ①

~~3.6.18 Containment Recirculation Drains (Ice Condenser)~~

~~LCO 3.6.18 The ice condenser floor drains and the refueling canal drains shall be OPERABLE.~~

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

~~ACTIONS~~

~~CONDITION~~	~~REQUIRED ACTION~~	~~COMPLETION TIME~~
~~A. One ice condenser floor drain inoperable.~~	~~A.1 Restore ice condenser floor drain to OPERABLE status.~~	~~1 hour~~
~~B. One refueling canal drain inoperable.~~	~~B.1 Restore refueling canal drain to OPERABLE status.~~	~~1 hour~~
~~C. Required Action and associated Completion Time not met.~~	~~C.1 Be in MODE 3.~~	~~6 hours~~
	~~AND~~	
	~~C.2 -------------NOTE-------------~~ ~~LCO 3.0.4.a is not applicable when entering MODE 4.~~ ~~---------------------------------~~ ~~Be in MODE 4.~~	~~12 hours~~

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~~SURVEILLANCE REQUIREMENTS~~

~~SURVEILLANCE~~	~~FREQUENCY~~
~~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~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~ ~~AND~~ ~~Prior to entering MODE 4 from MODE 5 after each partial or complete fill of the canal~~
~~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~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

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JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.18, "CONTAINMENT RECIRCULATION DRAINS (ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.18, "Containment Recirculation Drains (Ice Condenser)," is not being adopted because Turkey Point Nuclear Generating Station (PTN) is not an ice condenser containment design. Therefore, ISTS 3.6.18 is not included in the PTN Improved Technical Specifications.

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

~~B 3.6 CONTAINMENT SYSTEMS~~

~~B 3.6.18 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 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.~~ ①

~~The two refueling canal 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 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.~~

~~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 Spray System and the Air Return System (ARS) also function to assist the ice bed in limiting pressures and temperatures. Therefore, the~~

~~BASES~~

~~APPLICABLE SAFETY ANALYSES (continued)~~

~~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.~~

~~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).~~

~~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. 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.~~ ①

~~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. As such, the containment recirculation drains are not required to be OPERABLE in these MODES.~~

①

~~BASES~~

~~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~~

~~If one refueling canal 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, which requires that containment be restored to OPERABLE status in 1 hour.~~

~~C.1 and C.2~~

~~If the affected drain(s) cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which overall plant risk is reduced. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.~~

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~~Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 2). In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 2, the steam turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.~~

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

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~~BASES~~

~~ACTIONS (continued)~~

~~establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.~~

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

~~SURVEILLANCE REQUIREMENTS~~ ~~SR 3.6.18.1~~

~~Verifying the OPERABILITY of the refueling canal drains ensures that they will be able to perform their functions in the event of a DBA. This Surveillance confirms that the refueling canal drain plugs 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. SR 3.6.18.1 must be performed before entering MODE 4 from MODE 5 after every filling of the canal to ensure 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.~~ ①

~~OR~~

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

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

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~SR 3.6.18.2~~

~~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.~~

~~OR~~

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

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

1. ~~FSAR, Section [6.2].~~
2. ~~WCAP-16294-NP-A, Rev. 1, "Risk-Informed Evaluation of Changes to Technical Specification Required Action Endstates for Westinghouse NSSS PWRs," June 2010.~~

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.18 BASES, "CONTAINMENT RECIRCULATION DRAINS (ICE CONDENSER)"

1. Improved Standard Technical Specification (ISTS) 3.6.18 Bases, "Containment Recirculation Drains (Ice Condenser)," are not included in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS) Bases because the Specification, ISTS 3.6.18, has not been included in the PTN ITS.

ISTS 3.6.19, CONTAINMENT SUMP

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

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.19 Containment Sump~~

~~LCO 3.6.19 [The][Two] containment sump[s] shall be OPERABLE.~~

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

~~ACTIONS~~

~~CONDITION~~	~~REQUIRED ACTION~~	~~COMPLETION TIME~~
~~A. [One or more] containment sump[s] inoperable due to containment accident generated and transported debris exceeding the analyzed limits.~~	~~A.1 Initiate action to mitigate containment accident generated and transported debris.~~	~~Immediately~~
	~~AND~~	
	~~A.2 Perform SR 3.4.13.1.~~	~~Once per 24 hours~~ ①
	~~AND~~	
	~~A.3 Restore the containment sump[s] to OPERABLE status.~~	~~90 days~~

~~ACTIONS (continued)~~

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~~CONDITION~~	~~REQUIRED ACTION~~	~~COMPLETION TIME~~
~~B. [One or more] containment sump[s] inoperable for reasons other than Condition A.~~	~~B.1 -------------NOTES------------~~ ~~1. Enter applicable Conditions and Required Actions of LCO 3.5.2, "ECCS - Operating," and LCO 3.5.3, "ECCS - Shutdown," for emergency core cooling trains made inoperable by the containment sump[s].~~ ~~2. Enter applicable Conditions and Required Actions of LCO 3.6.6, "[Containment Spray and Cooling Systems]," for [containment spray] trains made inoperable by the containment sump[s].~~ ~~-----------------------------------~~ ~~Restore the containment sump[s] to OPERABLE status.~~	~~[72 hours]~~ ~~[OR~~ ~~In accordance with the Risk Informed Completion Time Program]~~
~~C. Required Action and associated Completion Time not met.~~	~~C.1 Be in MODE 3.~~ ~~AND~~ ~~C.2 Be in MODE 5.~~	~~6 hours~~ ~~36 hours~~

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~~SURVEILLANCE REQUIREMENTS~~

~~SURVEILLANCE~~		~~FREQUENCY~~
~~SR 3.6.19.1~~	~~Verify, by visual inspection, the containment sump[s] does not show structural damage, abnormal corrosion, or debris blockage.~~	~~[[18] months~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

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JUSTIFICATION FOR DEVIATIONS
ISTS 3.6.19, "CONTAINMENT SUMP"

1. Improved Standard Technical Specification (ISTS) 3.6.19, "Containment Sump," is not being adopted because Turkey Point Nuclear Generating Station (PTN) does not include a separate Containment Sump specification. Therefore, ISTS 3.6.19 is not included in the PTN Improved Technical Specifications.

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

~~B 3.6 CONTAINMENT SYSTEMS~~

~~B 3.6.19 Containment Sump~~

~~BASES~~

~~BACKGROUND~~

~~------------------------------------ REVIEWER'S NOTE -----------------------------------~~
~~Some plant designs have more than one containment sump. LCO 3.6.19 provides the option of specifying one or two containment sumps. The Bases specify when to discuss differences between one or more sump designs by providing bracketed information. However, for clarity, all references to the containment sump are not provided with plural bracketed alternatives. Licensees adopting this Bases section for plants with two or more containment sumps should make the appropriate changes to the Bases to reflect the plant design.~~
~~---~~

~~The containment sump provides a borated water source to support recirculation of coolant from the containment sump for residual heat removal, emergency core cooling, containment cooling, and [containment atmosphere cleanup] during accident conditions.~~

~~The containment sump supplies both trains of the Emergency Core Cooling System (ECCS) and the [Containment Spray System (CSS)][Recirculation Spray (RS) System] during any accident that requires recirculation of coolant from the containment sump. The recirculation mode is initiated when the pump suction is transferred to the containment sump on low Refueling Water Storage Tank (RWST) level, which ensures the containment sump has enough water to supply the net positive suction head to the ECCS and [CSS][RS System] pumps. [The use of a single containment sump to supply both trains of the ECCS and [CSS][RS System] is acceptable since the containment sump is a passive component, and passive failures are not required to be assumed to occur coincident with Design Basis Events.][Describe the design of plants with two or more containment sumps.]~~ ①

~~The containment sump contains strainers to limit the quantity of the debris materials from entering the sump suction piping. Debris accumulation on the strainers can lead to undesirable hydraulic effects including air ingestion through vortexing or deaeration, and reduced net positive suction head (NPSH) at pump suction piping.~~

~~BASES~~

~~BACKGROUND (continued)~~

~~While the majority of debris accumulates on the strainers, some fraction penetrates the strainers and is transported to downstream components in the ECCS, [CSS][RS System], and the Reactor Coolant System (RCS). Debris that penetrates the strainer can result in wear to the downstream components, blockages, or reduced heat transfer across the fuel cladding. Excessive debris in the containment sump water source could result in insufficient recirculation of coolant during the accident, or insufficient heat removal from the core during the accident.~~

~~APPLICABLE SAFETY ANALYSIS~~

~~During all accidents that require recirculation, the containment sump provides a source of borated water to the ECCS and [CSS][RS System] pumps. As such, it supports residual heat removal, emergency core cooling, containment cooling, and [containment atmosphere cleanup] during an accident. It also provides a source of negative reactivity (Ref. 1). The design basis transients and applicable safety analyses concerning each of these systems are discussed in the Applicable Safety Analyses section of B 3.5.2, "ECCS - Operating," B 3.5.3, "ECCS - Shutdown," and B 3.6.6, "[Containment Spray and Cooling Systems][Recirculation Spray (RS) System]."~~ ①

~~FSAR Section X.XX (Ref. 2) describes evaluations that confirm long-term core cooling is assured following any accident that requires recirculation from the containment sump.~~

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

~~LCO~~

~~---------------------------- REVIEWER'S NOTE -----------------------------------~~
~~The containment sump description should include all design features credited in the containment debris analysis.~~
~~---~~

~~[The][Two] containment sump is required to ensure a source of borated water to support ECCS and [CSS][RS System] OPERABILITY. A containment sump consists of the containment drainage flow paths, [design features upstream of the containment sump that are credited in the containment debris analysis,] the containment sump strainers, the pump suction trash racks, and the inlet to the ECCS and [CSS][RS System] piping. An OPERABLE containment sump has no structural damage or abnormal corrosion that could prevent recirculation of coolant and will not be restricted by containment accident generated and transported debris.~~

~~BASES~~

~~LCO (continued)~~

~~Containment accident generated and transported debris consists of the following:~~

~~a. Accident generated debris sources - Insulation, coatings, and other materials which are damaged by the high-energy line break (HELB) and transported to the containment sump. This includes materials within the HELB zone of influence and other materials (e.g., unqualified coatings) that fail due to the post-accident containment environment following the accident;~~

~~b. Latent debris sources – Pre-existing dirt, dust, paint chips, fines or shards of insulation, and other materials inside containment that do not have to be damaged by the HELB to be transported to the containment sump; and~~

~~c. Chemical product debris sources – Aluminum, zinc, carbon steel, copper, and non-metallic materials such as paints, thermal insulation, and concrete that are susceptible to chemical reactions within the post-accident containment environment leading to corrosion products that are generated within the containment sump pool or are generated within containment and transported to the containment sump.~~ ①

~~Containment debris limits are defined in FSAR Section X.XX (Ref. 2).~~

~~APPLICABILITY~~

~~In MODES 1, 2, 3, and 4, containment sump OPERABILITY requirements are dictated by the ECCS and [CSS][RS System] OPERABILITY requirements. Since both the ECCS and the [CSS][RS System] must be OPERABLE in MODES 1, 2, 3, and 4, the containment sump must also be OPERABLE to support their operation.~~

~~In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Thus, the containment sump is not required to be OPERABLE in MODES 5 or 6.~~

~~ACTIONS~~

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

~~Condition A is applicable when there is a condition which results in containment accident generated and transported debris exceeding the analyzed limits. Containment debris limits are defined in FSAR Section X.XX (Ref. 2).~~

~~BASES~~

~~ACTIONS (continued)~~

~~Immediate action must be initiated to mitigate the condition. Examples of mitigating actions are:~~

- ~~Removing the debris source from containment or preventing the debris from being transported to the containment sump;~~
- ~~Evaluating the debris source against the assumptions in the analysis;~~
- ~~Deferring maintenance that would affect availability of the affected systems and other LOCA mitigating equipment;~~
- ~~Deferring maintenance that would affect availability of primary defense-in-depth systems, such as containment coolers;~~
- ~~Briefing operators on LOCA debris management actions; or~~
- ~~Applying an alternative method to establish new limits.~~

~~While in this condition, the RCS water inventory balance, SR 3.4.13.1, must be performed at an increased Frequency of once per 24 hours. An unexpected increase in RCS leakage could be indicative of an increased potential for an RCS pipe break, which could result in debris being generated and transported to the containment sump. The more frequent monitoring allows operators to act in a timely fashion to minimize the potential for an RCS pipe break while the containment sump is inoperable.~~ ①

~~[For the purposes of applying LCO 3.0.6 and the Safety Function Determination Program while in Condition A, the [two] containment sumps are considered a single support system for all ECCS and [CSS][RS System] trains because containment accident generated and transported debris issues that would render one sump inoperable would render all of the sumps inoperable.]~~

~~The inoperable containment sump must be restored to OPERABLE status in 90 days. A 90-day Completion Time is reasonable for emergent conditions that involve debris in excess of the analyzed limits that could be generated and transported to the containment sump under accident conditions. The likelihood of an initiating event in the 90-day Completion~~

~~BASES~~

~~ACTIONS (continued)~~

~~Time is very small and there is margin in the associated analyses. The mitigating actions of Required Action A.1 provide additional assurance that the effects of debris in excess of the analyzed limits will be mitigated during the Completion Time.~~

~~B.1~~

~~------------------------------------ Reviewer's Note -----------------------------------~~
~~The Required Action B.1 Completion Time should be the same as the LCO 3.6.6 Completion Time for a single inoperable CSS train.~~
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~~When the containment sump is inoperable for reasons other than Condition A, such as blockage, structural damage, or abnormal corrosion that could prevent recirculation of coolant, it must be restored to OPERABLE status within [72 hours]. The [72 hour] Completion Time takes into account the reasonable time for repairs, and low probability of an accident that requires the containment sump occurring during this period. [Alternately, a Completion Time can be determined in accordance with the Risk Informed Completion Time Program.]~~ ①

~~Required Action B.1 is modified by two Notes. The first Note indicates that the applicable Conditions and Required Actions of LCO 3.5.2, "ECCS - Operating," and LCO 3.5.3, "ECCS - Shutdown," should be entered if an inoperable containment sump results in an inoperable ECCS train. The second Note indicates that the applicable Conditions and Required Actions of LCO 3.6.6, "[Containment Spray and Cooling Systems][Recirculation Spray (RS) System]," should be entered if an inoperable containment sump results in an inoperable [CSS][RS System] train. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components.~~

~~C.1 and C.2~~

~~If the containment sump cannot be restored to OPERABLE status within the associated Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.~~

~~BASES~~

~~SURVEILLANCE REQUIREMENTS~~

~~SR 3.6.19.1~~

~~Periodic inspections are performed to verify the containment sump does not show current or potential debris blockage, structural damage, or abnormal corrosion to ensure the operability and structural integrity of the containment sump (Ref. 1).~~

~~[The 18 month Frequency is based on the need to perform this Surveillance during a refueling outage, because of the need to enter containment. This Frequency is sufficient to detect any indication of structural damage, abnormal corrosion, or debris blockage of the containment sump.~~

~~OR~~

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

~~--------------------------------REVIEWER'S NOTE---------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
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①

~~REFERENCES~~

~~1. FSAR, Chapter [6] and Chapter [15].~~

~~2. FSAR, Section [X.XX], [Sump Debris Evaluation].~~

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.19 BASES, "CONTAINMENT SUMP"

1. Improved Standard Technical Specification (ISTS) 3.6.19 Bases, "Containment Sump," are not included in the Turkey Point Nuclear Generating Station (PTN) Improved Technical Specifications (ITS) Bases because the Specification, ISTS 3.6.19, has not been included in the PTN ITS.