INDIANA MICHIGAN POWER

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AEP-NRC-2020-33
10 CFR 50.90

Docket Nos.: 50-315
50-316

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Donald C. Cook Nuclear Plant, Units 1 and 2
Application to Revise Technical Specifications to Adopt TSTF-567, "Add Containment Sump TS to Address GSI-191 Issues"

Pursuant to 10 CFR 50.90, Indiana Michigan Power Company (I&M), the licensee for Donald C. Cook Nuclear Plant (CNP) is submitting a request for an amendment to the Technical Specifications (TS) for CNP Units 1 and 2.

I&M requests adoption of TSTF-567, "Add Containment Sump TS to Address GSI-191 Issues," which is an approved change to the TS, into the CNP Units 1 and 2 TS,. The proposed amendment adds a new TS 3.6.15, "Containment Recirculation Sump," and adds an Action to address the condition of the containment recirculation sump made inoperable due to containment accident generated and transported debris exceeding the analyzed limits. The Action provides time to correct or evaluate the condition in lieu of an immediate plant shutdown.

Enclosure 1 provides an affirmation statement pertaining to the information contained herein.

Enclosure 2 provides a description and assessment of the proposed changes.

Enclosures 3 and 4 provide existing Units 1 and 2 TS pages, respectively, marked up to show the proposed changes.

Enclosures 5 and 6 provide existing Units 1 and 2 TS Bases pages, respectively, marked up to show the proposed changes. TS Bases markups are included for information only. Changes to the existing TS Bases will be implemented under TS 5.5.12, "Technical Specifications Bases Control Program."

Approval of the proposed amendment is requested within 6 months. Once approved, the amendment shall be implemented within 90 days. In accordance with 10 CFR 50.91, a copy of this application, with enclosures, is being provided to the designated Michigan state officials

A001
NRR

New, clean, Units 1 and 2 TS pages with proposed changes incorporated will be provided to the Nuclear Regulatory Commission (NRC) Licensing Project Manager when requested.

There are no new regulatory commitments made in this letter. Should you have any questions, please contact Mr. Michael K. Scarpello, Regulatory Affairs Director, at (269) 466-2649.

Sincerely,

Quinton S. Lies

Q. Shane Lies
Site Vice President
Indiana Michigan Power Company

DLW/mll

Enclosures:

1. Affirmation
2. Description and Assessment of the Technical Specification Changes
3. Donald C. Cook Nuclear Plant Unit 1 Technical Specification Pages Marked To Show Proposed Changes
4. Donald C. Cook Nuclear Plant Unit 2 Technical Specification Pages Marked To Show Proposed Changes
5. Donald C. Cook Nuclear Plant Unit 1 Technical Specification Bases Pages Marked To Show Proposed Changes (For Information Only)
6. Donald C. Cook Nuclear Plant Unit 2 Technical Specification Bases Pages Marked To Show Proposed Changes (For Information Only)

c: R. J. Ancona – MPSC
EGLE – RMD/RPS
J. B. Giessner – NRC Region III
NRC Resident Inspector
S. P. Wall – NRC, Washington, D.C.
A. J. Williamson – AEP Ft. Wayne, w/o enclosures

Enclosure 1 to AEP-NRC-2020-33

AFFIRMATION

I, Q. Shane Lies, being duly sworn, state that I am the Site Vice President of Indiana Michigan Power Company (I&M), that I am authorized to sign and file this request with the U. S. Nuclear Regulatory Commission on behalf of I&M, and that the statements made and the matters set forth herein pertaining to I&M are true and correct to the best of my knowledge, information, and belief.

Indiana Michigan Power Company

Quinton S. Lies

Q. Shane Lies
Site Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 30 DAY OF April 2020

Regan D. Weng
Notary Public

My Commission Expires 01/21/2025

Enclosure 2 to AEP-NRC-2020-33

Description and Assessment of Technical Specification Changes

1.0 DESCRIPTION

Indiana Michigan Power Company (I&M), the licensee for Donald C. Cook Nuclear Plant (CNP), Units 1 and 2, requests adoption of TSTF-567, "Add Containment Sump TS to Address GSI-191 Issues," which is an approved change to the Improved Standard Technical Specifications (ISTS), into the CNP Units 1 and 2 Technical Specifications (TS).

The proposed amendment adds a new TS 3.6.15, "Containment Recirculation Sump," and adds an Action to address the condition of the containment recirculation sump made inoperable due to containment accident generated and transported debris exceeding the analyzed limits. The Action provides time to correct or evaluate the condition in lieu of an immediate plant shutdown. This Action is placed in a new specification on the containment recirculation sump that otherwise retains the existing TS requirements. An existing Surveillance Requirement (SR) is moved from TS 3.5.2 to the new specification. The requirement to perform the SR in TS 3.5.3 is deleted.

2.0 ASSESSMENT

2.1 Applicability of Published Safety Evaluation

I&M has reviewed the safety evaluation for TSTF-567 provided to the Technical Specifications Task Force in a letter dated July 3, 2018. This review included the Nuclear Regulatory Commission (NRC) staff's evaluation, as well as the information provided in TSTF-567. As described herein, I&M has concluded that the justifications presented in TSTF-567 and the safety evaluation prepared by the NRC staff are applicable to CNP Units 1 and 2 and justify this amendment for the incorporation of the changes to the CNP TS.

2.2 Optional Changes and Variations

I&M is proposing the following variations from the TS changes described in the TSTF-567 or the applicable parts of the NRC staff's safety evaluation. These variations do not affect the applicability of TSTF-567 or the NRC staff's safety evaluation to the proposed license amendment.

The CNP Units 1 and 2 TS utilize different numbering and titles than the Standard Technical Specifications on which TSTF-567 was based. Specifically,

- SR 3.5.2.8 in the ISTS corresponds to CNP SR 3.5.2.7
- New TS 3.6.19 "Containment Sump," will be titled "Containment Recirculation Sump" in the CNP TS
- The term "containment sump" will be replaced with "containment recirculation sump" for all instances
- New TS 3.6.19, "Containment Sump," will be numbered TS 3.6.15 in the CNP TS

- TS 3.6.6, “Containment Spray and Cooling System” is titled TS 3.6.6, “Containment Spray System” in the CNP TS

These differences are administrative and do not affect the applicability of TSTF-567 to the CNP TS.

The traveler and model safety evaluation discuss the applicable regulatory requirements and guidance, including the 10 CFR 50, Appendix A, General Design Criteria (GDC). CNP Units 1 and 2 were not licensed to the 10 CFR 50, Appendix A, GDC. The CNP equivalents of the referenced GDC are the Plant-Specific Design Criteria (PSDC), discussed in Section 1.4 of the CNP Updated Final Safety Analysis Report. These criteria are based on the Atomic Energy Commission proposed GDC published in the Federal Register on July 11, 1967.

The GDCs referenced in TSTF-567 with the corresponding CNP PSDC is shown below:

- GDC 4, "Environmental and Dynamic Effects Design Bases," states:
  Structures, systems, and components important to safety shall be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents.

    - PSDC Criterion 2, “Performance Standards,” states:
      Those structures, systems and components of reactor facilities which are essential to the prevention, or to the mitigation of the consequences, of nuclear accidents which could cause undue risk to the health and safety of the public shall be designed, fabricated, and erected to performance standards that enable such structures, systems and components to withstand, without undue risk to the health and safety of the public, the forces that might reasonably be imposed by the occurrence of an extraordinary natural phenomenon such as earthquake, tornado, flooding condition, high wind or heavy ice.

- GDC 35, "Emergency Core Cooling," states:
  A system to provide abundant emergency core cooling shall be provided. The system safety function shall be to transfer heat from the reactor core following any loss of reactor coolant at a rate such that (1) fuel and clad damage that could interfere with continued effective core cooling is prevented and (2) clad metal-water reaction is limited to negligible amounts.

    - PSDC Criterion 44, “Emergency Core Cooling System Capability,” states:
      An emergency core cooling system with the capability for accomplishing adequate emergency core cooling shall be provided. This core cooling system and the core shall be designed to prevent fuel and clad damage that would interfere with the emergency core cooling function and to limit the clad metal-water reaction to acceptable amounts for all sizes of breaks in the reactor coolant piping up to the equivalent of a double-ended rupture of the largest pipe.

- GDC 38, "Containment Heat Removal," states:

A system to remove heat from the reactor containment shall be provided. The system safety function shall be to reduce rapidly, consistent with the functioning of other associated systems, the containment pressure and temperature following any loss-of-coolant accident and maintain them at acceptably low levels.

  - PSDC Criterion 52, "Containment Heat Removal Systems," states:
    Where active heat removal systems are needed under accident conditions to prevent exceeding containment pressure, at least two systems, each with full capacity, shall be provided.

- GDC 41, "Containment Atmospheric Cleanup," states:

Systems to control fission products, hydrogen, oxygen, and other substances which may be released into the reactor containment shall be provided as necessary to reduce, consistent with the functioning of other associated systems, the concentration and quality of fission products released to the environment following postulated accidents, and to control the concentration of hydrogen or oxygen and other substances in the containment atmosphere following postulated accidents to assure that containment integrity is maintained.

  - CNP does not have an equivalent PSDC for Atmospheric cleanup. The reactor containment structure, with the aid of containment heat removal systems including the ice bed, are designed to assure containment integrity. The Containment Spray System (TS 3.6.6) and Spray Additive System (TS 3.6.7) assist in reducing post-accident fission products in containment and limit releases to below 10 CFR 50.67 acceptance criteria. Additionally, CNP has a distributed ignition system (DIS) (TS 3.6.9) which is required by 10 CFR 50.44 to reduce the hydrogen concentration in the primary containment following a degraded core accident. The DIS, however, is not credited for mitigation of a design basis accident. GDC 41 states that the containment atmospheric cleanup is provided as necessary to limit fission product releases to the environment and maintain containment integrity. CNP is able to meet these requirements without a containment atmosphere cleanup system.

- GDC 36, "Inspection of Emergency Core Cooling," states:

The emergency core cooling system shall be designed to permit appropriate periodic inspection of important components, such as spray rings in the reactor pressure vessel, water injection nozzles, and piping, to assure the integrity and capability of the system.

  - PSDC Criterion 45, "Inspection of Emergency Core Cooling System," states:
    Design provisions shall, where practical, be made to facilitate inspection of physical parts of the Emergency Core Cooling System including reactor vessel internals and water injection nozzles.

- GDC 39, "Inspection of Containment Heat Removal," states:

The containment heat removal system shall be designed to permit appropriate periodic inspection of important components, such as the torus, sumps, spray nozzles, and piping to assure the integrity and capability of the system.

- PSDC Criterion 58, "Inspection of Pressure-Reducing Systems," states
Design provisions shall be made, to the extent practical, to facilitate the periodic physical inspection of all important components of the containment pressure-reducing systems such as pumps, valves, spray nozzles and sumps.

- GDC 42, "Inspection of Containment Atmospheric Cleanup," states:
The containment atmosphere cleanup systems shall be designed to permit appropriate periodic inspection of important components, such as filter frames, ducts, and piping to assure the integrity and capability of the systems.

  - CNP does not have an Atmospheric Cleanup system. Periodic inspection of the system is not part of the PSDC.

The CNP PSDCs meet the requirements of the GDCs. The differences does not alter the conclusion that the proposed change is applicable to CNP.

The CNP TSs contain a Surveillance Frequency Control Program. Therefore, the Frequency for SR 3.6.15.1 is "In accordance with the Surveillance Frequency Control Program."

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Determination

The proposed amendment adds a new TS 3.6.15, "Containment Recirculation Sump," and adds an Action to address the condition of the containment recirculation sump made inoperable due to containment accident generated and transported debris exceeding the analyzed limits. The Action provides time to correct or evaluate the condition in lieu of an immediate plant shutdown. This Action is placed in a new specification on the containment recirculation sump that otherwise retains the existing TS requirements. An existing SR is moved from TS 3.5.2 to the new specification. The requirement to perform the SR in TS 3.5.3 is deleted.

I&M has evaluated whether a significant hazards consideration is involved with the proposed change by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. *Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?*

   Response: No.

   The proposed change adds a new specification to the TS for the containment recirculation sump. An existing SR on the containment recirculation sump is moved to the new specification and a duplicative requirement to perform the SR in TS 3.5.3 is removed. The new specification retains the existing requirements on the containment recirculation sump and the actions to be taken when the containment recirculation sump is inoperable with the exception of adding new actions to be taken when the containment recirculation sump is inoperable due to containment accident generated and transported debris exceeding the analyzed limits. The new action provides time to evaluate and correct the condition instead of requiring an immediate plant shutdown.

The containment recirculation sump is not an initiator of any accident previously evaluated. The containment recirculation sump is a passive component and the proposed change does not increase the likelihood of the malfunction. As a result, the probability of an accident is unaffected by the proposed change.

The containment recirculation sump is used to mitigate accidents previously evaluated by providing a borated water source for the Emergency Core Cooling System (ECCS) and Containment Spray System (CSS). The design of the containment recirculation sump and the capability of the containment recirculation sump assumed in the accident analysis is not changed. The proposed action requires implementation of mitigating actions while the containment recirculation sump is inoperable and more frequent monitoring of reactor coolant leakage to detect any increased potential for an accident that would require the containment recirculation sump. The consequences of an accident during the proposed action are no different than the current consequences of an accident if the containment recirculation sump is inoperable.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. *Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?*

Response: No.

The proposed change adds a new specification to the TS for the containment recirculation sump. An existing SR on the containment recirculation sump is moved to the new specification and a duplicative requirement to perform the SR in TS 3.5.3 is removed. The new specification retains the existing requirements on the containment recirculation sump and the actions to be taken when the containment recirculation sump is inoperable with the exception of adding new actions to be taken when the containment recirculation sump is inoperable due to containment accident generated and transported debris exceeding the analyzed limits. The new action provides time to evaluate and correct the condition instead of requiring an immediate plant shutdown.

The proposed change does not alter the design or design function of the containment recirculation sump or the plant. No new systems are installed or removed as part of the proposed change. The containment recirculation sump is a passive component and cannot initiate a malfunction or accident. No new credible accident is created that is not encompassed by the existing accident analyses that assume the function of the containment recirculation sump.

Therefore the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. *Does the proposed amendment involve a significant reduction in a margin of safety?*

Response: No.

The proposed change adds a new specification to the TS for the containment recirculation sump. An existing SR on the containment recirculation sump is moved to the new specification and a duplicative requirement to perform the SR in TS 3.5.3 is removed. The new specification retains the existing requirements on the containment recirculation sump and the actions to be taken when the containment recirculation sump is inoperable with the exception of adding new actions to be taken when the containment recirculation sump is inoperable due to containment accident generated and transported debris exceeding the analyzed limits. The new action provides time to evaluate and correct the condition instead of requiring an immediate plant shutdown.

The proposed change does not affect the controlling values of parameters used to avoid exceeding regulatory or licensing limits. No Safety Limits are affected by the proposed change. The proposed change does not affect any assumptions in the accident analyses that demonstrate compliance with regulatory and licensing requirements.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, I&M concludes that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

3.2 Conclusion

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

4.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

Enclosure 3 to AEP-NRC-2020-33

Donald C. Cook Nuclear Plant Unit 1 Technical Specification Pages Marked to Show Proposed Changes

3.5.2-3
3.5.3-2
3.6.15-1
3.6.15-2
3.6.15-3

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.6	Verify, for each ECCS throttle valve listed below, each position stop is in the correct position. <u>Valve Number</u> 1-SI-121 N 1-SI-121 S 1-SI-141 L1 1-SI-141 L2 1-SI-141 L3 1-SI-141 L4	In accordance with the Surveillance Frequency Control Program
~~SR 3.5.2.7~~	~~Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet strainers show no evidence of structural distress or abnormal corrosion.~~ Deleted	~~In accordance with the Surveillance Frequency Control Program~~ Deleted
SR 3.5.2.8	Verify ECCS locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.3.1	-------------------------------NOTE------------------------------ For SR 3.5.2.2, the SR is modified to allow the valves to not be in the correct position, provided they can be aligned to the correct position. ---	
	The following SRs are applicable for all equipment required to be OPERABLE: SR 3.5.2.2, SR 3.5.2.3, SR 3.5.2.6, ~~SR 3.5.2.7,~~ and SR 3.5.2.8	In accordance with applicable SRs

3.6 CONTAINMENT SYSTEMS

3.6.15 Containment Recirculation Sump

LCO 3.6.15 The containment recirculation sump shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment recirculation sump 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 AND A.2 Perform SR 3.4.13.1 AND A.3 Restore the containment recirculation sump to OPERABLE status.	Immediately Once per 24 hours 90 days
B. Containment recirculation sump 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 recirculation sump 2. Enter applicable Conditions and Required Actions of LCO 3.6.6, "Containment Spray System," for	

CONDITION	REQUIRED ACTION	COMPLETION TIME
	containment spray trains made inoperable by the containment sump. --- Restore the containment recirculation sump to OPERABLE status.	72 hours
C. Required Action and associated Completion Time not met	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.15.1	Verify, by visual inspection, the containment recirculation sump does not show structural damage, abnormal corrosion, or debris blockage.	In accordance with the Surveillance Frequency Control Program

Enclosure 4 to AEP-NRC-2020-33

Donald C. Cook Nuclear Plant Unit 2 Technical Specification Pages Marked to Show Proposed Changes

3.5.2-3
3.5.3-2
3.6.15-1
3.6.15-2
3.6.15-3

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.5.2.6	Verify, for each ECCS throttle valve listed below, each position stop is in the correct position. Valve Number 2-SI-121 N 2-SI-121 S 2-SI-141 L1 2-SI-141 L2 2-SI-141 L3 2-SI-141 L4	In accordance with the Surveillance Frequency Control Program
~~SR 3.5.2.7~~	~~Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet strainers show no evidence of structural distress or abnormal corrosion.~~ Deleted	~~In accordance with the Surveillance Frequency Control Program~~ Deleted
SR 3.5.2.8	Verify ECCS locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.3.1	-------------------------------NOTE------------------------------ For SR 3.5.2.2, the SR is modified to allow the valves to not be in the correct position, provided they can be aligned to the correct position. --- The following SRs are applicable for all equipment required to be OPERABLE: SR 3.5.2.2, SR 3.5.2.3, SR 3.5.2.6, ~~SR 3.5.2.7,~~ and SR 3.5.2.8	In accordance with applicable SRs

3.6 CONTAINMENT SYSTEMS

3.6.15 Containment Recirculation Sump

LCO 3.6.15 The containment recirculation sump shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment recirculation sump inoperable due to containment accident generated and transported debris exceeding the analyzed limits.	A.1 Initiate action to mitigate containment accident generated and transported debris	Immediately
	AND	
	A.2 Perform SR 3.4.13.1	Once per 24 hours
	AND	
	A.3 Restore the containment recirculation sump to OPERABLE status.	90 days
B. Containment recirculation sump 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 2. Enter applicable Conditions and Required Actions of LCO 3.6.6, "Containment Spray System," for	

CONDITION	REQUIRED ACTION	COMPLETION TIME
	containment spray trains made inoperable by the containment recirculation sump. Restore the containment recirculation sump to OPERABLE status.	72 hours
C. Required Action and associated Completion Time not met	C.1 Be in MODE 3.	6 hours
	AND	
	C.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.15.1	Verify, by visual inspection, the containment recirculation sump does not show structural damage, abnormal corrosion, or debris blockage.	In accordance with the Surveillance Frequency Control Program

Enclosure 5 to AEP-NRC-2020-33

Donald C. Cook Nuclear Plant Unit 1 Technical Specification Bases Pages Marked to Show Proposed Changes (For Information Only)

B3.5.2-3
B3.5.2-9
B3.5.3-1
B3.6.15-1
B3.6.15-2
B3.6.15-3
B3.6.15-4
B3.6.15-5

BASES

BACKGROUND (continued)

The ECCS subsystems are actuated upon receipt of an SI signal. The actuation of safeguard loads is accomplished in a programmed time sequence. If offsite power is available, the safeguard loads start in the programmed sequence. If offsite power is not available, the Engineered Safety Feature (ESF) buses shed normal operating loads and are connected to the emergency diesel generators (EDGs). Safeguard loads are then actuated in the programmed time sequence. The time delay associated with diesel starting, sequenced loading, and pump starting determines the time required before pumped flow is available to the core following a LOCA.

The active ECCS components, along with the passive accumulators, ~~and~~ the RWST, and the containment recirculation sump, covered in LCO 3.5.1, "Accumulators," ~~and~~ LCO 3.5.4, "Refueling Water Storage Tank (RWST)," and LCO 3.6.15, "Containment Recirculation Sump," provide the cooling water necessary to meet Plant Specific Design Criteria 37, 41, and 44 (Ref. 1).

APPLICABLE SAFETY ANALYSES

The LCO helps to ensure that the following acceptance criteria for the ECCS, established by 10 CFR 50.46 (Ref. 2), will be met following a LOCA:

a. Maximum fuel element cladding temperature is ≤ 2200°F;

b. Maximum cladding oxidation is ≤ 0.17 times the total cladding thickness before oxidation;

c. Maximum hydrogen generation from a zirconium water reaction is ≤ 0.01 times the hypothetical amount generated if all of the metal in the cladding cylinders surrounding the fuel, excluding the cladding surrounding the plenum volume, were to react;

d. Core is maintained in a coolable geometry; and

e. Adequate long term core cooling capability is maintained.

The LCO also limits the magnitude of the post trip return to power following an MSLB event and ensures that containment temperature limits are met.

Each ECCS subsystem is taken credit for in a large break LOCA event at full power (Ref. 3). This event establishes the requirement for runout flow for the ECCS pumps, as well as the maximum response time for their actuation. The centrifugal charging pumps and SI pumps are credited in a small break LOCA event (Ref. 4). This event establishes the required flow and discharge head at the design point for the centrifugal charging

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~SR 3.5.2.7~~

Deleted
~~Periodic inspections of the containment sump suction inlets ensure that they are unrestricted and stay in proper operating condition. This Surveillance verifies that the sump suction inlets are not restricted by debris and the suction inlet strainers show no evidence of structural distress, such as openings or gaps, which would allow debris to bypass the strainers. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

SR 3.5.2.8

ECCS 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 ECCS and may also prevent water hammer, pump cavitation, and pumping of noncondensible gas into the reactor vessel.

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

The ECCS 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 it is determined by subsequent evaluation that the ECCS 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.

ECCS locations susceptible to gas accumulation are monitored and, if gas is found, the gas volume is compared to the acceptance criteria for

B 3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

B 3.5.3 ECCS - Shutdown

BASES

BACKGROUND	The Background section for Bases 3.5.2, "ECCS - Operating," as it describes the design of the ECCS, is applicable to these Bases, with the following modifications. In MODE 4, the required ECCS train consists of two separate subsystems: centrifugal charging (high head) and residual heat removal (RHR) (low head). The ECCS flow paths consist of piping, valves, heat exchangers, and pumps such that water from the refueling water storage tank (RWST) and the containment recirculation sump can be injected into the Reactor Coolant System (RCS) following the accidents described in Bases 3.5.2.
APPLICABLE SAFETY ANALYSES	The Cook Nuclear Plant Licensing Basis does not require performance of an analysis to determine the effects of a Loss of Coolant Accident (LOCA) occurring in MODE 4, nor does it require an analysis to prove ECCS equipment capability to mitigate a MODE 4 LOCA. However, these Technical Specifications require certain ECCS subsystems to be OPERABLE in MODE 4 to ensure sufficient ECCS flow is available to the core and adequate core cooling is maintained following a MODE 4 LOCA. Due to the stable conditions associated with operation in MODE 4 and the reduced probability of occurrence of a Design Basis Accident (DBA), the ECCS operational requirements are reduced. It is understood in these reductions that automatic safety injection (SI) actuation is not available. In this MODE, sufficient time exists for manual actuation of the required ECCS to mitigate the consequences of a DBA. Only one train of ECCS is required for MODE 4. This requirement dictates that single failures are not considered during this MODE of operation. ECCS - Shutdown satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).
LCO	In MODE 4, one of the two independent (and redundant) ECCS trains is required to be OPERABLE to ensure that sufficient ECCS flow is available to the core following a DBA. In MODE 4, an ECCS train consists of a centrifugal charging subsystem and an RHR subsystem. Each train includes the piping, instruments, and controls to ensure an OPERABLE flow path capable of taking suction from the RWST and transferring suction to the containment sump.

B 3.6 CONTAINMENT SYSTEMS

B 3.6.15 Containment Recirculation Sump

BASES

BACKGROUND

The containment recirculation sump provides a borated water source to support recirculation of coolant from the containment recirculation sump for residual heat removal, emergency core cooling, and containment cooling, during accident conditions.

The containment recirculation sump supplies both trains of the Emergency Core Cooling System (ECCS) and the Containment Spray System (CTS) during any accident that requires recirculation of coolant from the containment recirculation sump. The recirculation mode is initiated when the pump suction is transferred to the containment recirculation sump on low Refueling Water Storage Tank (RWST) level, which ensures the containment sum recirculation p has enough water to supply the net positive suction head to the ECCS and CTS pumps. The use of a single containment recirculation sump to supply both trains of the ECCS and CTS is acceptable since the containment recirculation sump is a passive component, and passive failures are not required to be assumed to occur coincident with Design Basis Events.

The containment recirculation 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.

While the majority of debris accumulates on the strainers, some fraction penetrates the strainers and is transported to downstream components in the ECCS, CTS, 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 recirculation 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 recirculation sump provides a source of borated water to the ECCS and CTS pumps. As such, it supports residual heat removal, emergency core cooling, and containment cooling, 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

BASES

APPLICABLE SAFETY ANALYSIS (continued)

B 3.5.2, "ECCS - Operating," B 3.5.3, "ECCS - Shutdown," and B 3.6.6, "Containment Spray System."

UFSAR Section 14.3.9 (Ref. 2) describes evaluations that confirm long-term core cooling is assured following any accident that requires recirculation from the containment recirculation sump.

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

LCO

The containment recirculation sump is required to ensure a source of borated water to support ECCS and CTS OPERABILITY. A containment recirculation sump consists of the containment drainage flow paths, debris interceptors including a debris gate in the Annulus, flood-up overflow wall openings, the containment recirculation sump strainers, and the inlet to the ECCS and CTS. An OPERABLE containment recirculation 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.

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 recirculation 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 recirculation 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 recirculation sump pool or are generated within containment and transported to the containment recirculation sump.

Containment debris limits are defined in UFSAR Section 14.3.9 (Ref. 2).

APPLICABILITY

In MODES 1, 2, 3, and 4, containment recirculation sump OPERABILITY requirements are dictated by the ECCS and CTS OPERABILITY requirements. Since both the ECCS and the CTS must be OPERABLE in MODES 1, 2, 3, and 4, the containment recirculation 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 recirculation 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 UFSAR Section 14.3.9 (Ref. 2).

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 recirculation 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 recirculation 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 recirculation sump is inoperable.

The inoperable containment recirculation 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

BASES

ACTIONS (continued)

recirculation sump under accident conditions. The likelihood of an initiating event in the 90-day Completion 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

When the containment recirculation 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 recirculation sump occurring during this period.

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 recirculation 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 Systems," should be entered if an inoperable containment recirculation sump results in an inoperable CTS 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 recirculation 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	<u>SR 3.6.15.1</u> Periodic inspections are performed to verify the containment recirculation sump does not show current or potential debris blockage, structural damage, or abnormal corrosion to ensure the operability and structural integrity of the containment recirculation sump (Ref. 1). The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.
REFERENCES	1. UFSAR, Chapter 6 and Chapter 14 2. UFSAR, Section 14.3.9, "Containment and Recirculation Sump Analyses".

Enclosure 6 to AEP-NRC-2020-33

Donald C. Cook Nuclear Plant Unit 2 Technical Specification Bases Pages Marked to Show Proposed Changes (For Information Only)

BASES

BACKGROUND (continued)

The ECCS subsystems are actuated upon receipt of an SI signal. The actuation of safeguard loads is accomplished in a programmed time sequence. If offsite power is available, the safeguard loads start in the programmed sequence. If offsite power is not available, the Engineered Safety Feature (ESF) buses shed normal operating loads and are connected to the emergency diesel generators (EDGs). Safeguard loads are then actuated in the programmed time sequence. The time delay associated with diesel starting, sequenced loading, and pump starting determines the time required before pumped flow is available to the core following a LOCA.

The active ECCS components, along with the passive accumulators, ~~and~~ the RWST, and the containment recirculation sump, covered in LCO 3.5.1, "Accumulators," ~~and~~ LCO 3.5.4, "Refueling Water Storage Tank (RWST)," and LCO 3.6.15, "Containment Recirculation Sump," provide the cooling water necessary to meet Plant Specific Design Criteria 37, 41, and 44 (Ref. 1).

APPLICABLE SAFETY ANALYSES

The LCO helps to ensure that the following acceptance criteria for the ECCS, established by 10 CFR 50.46 (Ref. 2), will be met following a LOCA:

a. Maximum fuel element cladding temperature is ≤ 2200°F;

b. Maximum cladding oxidation is ≤ 0.17 times the total cladding thickness before oxidation;

c. Maximum hydrogen generation from a zirconium water reaction is ≤ 0.01 times the hypothetical amount generated if all of the metal in the cladding cylinders surrounding the fuel, excluding the cladding surrounding the plenum volume, were to react;

d. Core is maintained in a coolable geometry; and

e. Adequate long term core cooling capability is maintained.

The LCO also limits the magnitude of the post trip return to power following an MSLB event and ensures that containment temperature limits are met.

Each ECCS subsystem is taken credit for in a large break LOCA event at full power (Ref. 3). This event establishes the requirement for runout flow for the ECCS pumps, as well as the maximum response time for their actuation. The centrifugal charging pumps and SI pumps are credited in a small break LOCA event (Ref. 4). This event establishes the required flow and discharge head at the design point for the centrifugal charging

BASES

SURVEILLANCE REQUIREMENTS (continued)

pump performance has not degraded to an unacceptable level during the cycle. Flow and differential head are normal tests of ECCS pump performance required by the ASME OM Code (Ref. 10). Since the ECCS pumps cannot be tested with flow through the normal ECCS flow paths, they are tested on recirculation flow (RHR and SI pumps) or normal charging flow path (centrifugal charging pumps). This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice tests confirm component OPERABILITY and detect incipient failures by indicating abnormal performance. The Frequency of this SR is in accordance with the INSERVICE TESTING PROGRAM.

SR 3.5.2.4 and SR 3.5.2.5

These Surveillances demonstrate that each automatic ECCS valve actuates to the required position on an actual or simulated SI signal and that each ECCS pump starts on receipt of an actual or simulated SI signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.5.2.6

Proper throttle valve position is necessary for proper ECCS performance. These valves have stops to allow proper positioning for restricted flow to a ruptured cold leg, ensuring that the other cold legs receive at least the required minimum flow. This Surveillance verifies the mechanical stop of each listed ECCS throttle valve is in the correct position. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.5.2.7

Deleted
~~Periodic inspections of the containment sump suction inlets ensure that they are unrestricted and stay in proper operating condition. This Surveillance verifies that the sump suction inlets are not restricted by debris and the suction inlet strainers show no evidence of structural distress, such as openings or gaps, which would allow debris to bypass the strainers. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.~~

B 3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

B 3.5.3 ECCS - Shutdown

BASES

BACKGROUND

The Background section for Bases 3.5.2, "ECCS - Operating," as it describes the design of the ECCS, is applicable to these Bases, with the following modifications.

In MODE 4, the required ECCS train consists of two separate subsystems: centrifugal charging (high head) and residual heat removal (RHR) (low head).

The ECCS flow paths consist of piping, valves, heat exchangers, and pumps such that water from the refueling water storage tank (RWST) and the containment recirculation sump can be injected into the Reactor Coolant System (RCS) following the accidents described in Bases 3.5.2.

APPLICABLE SAFETY ANALYSES

The Cook Nuclear Plant Licensing Basis does not require performance of an analysis to determine the effects of a Loss of Coolant Accident (LOCA) occurring in MODE 4, nor does it require an analysis to prove ECCS equipment capability to mitigate a MODE 4 LOCA. However, these Technical Specifications require certain ECCS subsystems to be OPERABLE in MODE 4 to ensure sufficient ECCS flow is available to the core and adequate core cooling is maintained following a MODE 4 LOCA.

Due to the stable conditions associated with operation in MODE 4 and the reduced probability of occurrence of a Design Basis Accident (DBA), the ECCS operational requirements are reduced. It is understood in these reductions that automatic safety injection (SI) actuation is not available. In this MODE, sufficient time exists for manual actuation of the required ECCS to mitigate the consequences of a DBA.

Only one train of ECCS is required for MODE 4. This requirement dictates that single failures are not considered during this MODE of operation.

ECCS - Shutdown satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

In MODE 4, one of the two independent (and redundant) ECCS trains is required to be OPERABLE to ensure that sufficient ECCS flow is available to the core following a DBA.

In MODE 4, an ECCS train consists of a centrifugal charging subsystem and an RHR subsystem. Each train includes the piping, instruments, and controls to ensure an OPERABLE flow path capable of taking suction from the RWST and transferring suction to the containment sump.

B 3.6 CONTAINMENT SYSTEMS

B 3.6.15 Containment Recirculation Sump

BASES

BACKGROUND

The containment recirculation sump provides a borated water source to support recirculation of coolant from the containment recirculation sump for residual heat removal, emergency core cooling, and containment cooling, during accident conditions.

The containment recirculation sump supplies both trains of the Emergency Core Cooling System (ECCS) and the Containment Spray System (CTS) during any accident that requires recirculation of coolant from the containment recirculation sump. The recirculation mode is initiated when the pump suction is transferred to the containment recirculation sump on low Refueling Water Storage Tank (RWST) level, which ensures the containment recirculation sump has enough water to supply the net positive suction head to the ECCS and CTS pumps. The use of a single containment recirculation sump to supply both trains of the ECCS and CTS is acceptable since the containment recirculation sump is a passive component, and passive failures are not required to be assumed to occur coincident with Design Basis Events.

The containment recirculation 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.

While the majority of debris accumulates on the strainers, some fraction penetrates the strainers and is transported to downstream components in the ECCS, CTS, 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 recirculation 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 recirculation sump provides a source of borated water to the ECCS and CTS pumps. As such, it supports residual heat removal, emergency core cooling, and containment cooling, 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

BASES

APPLICABLE SAFETY ANALYSIS (continued)

B 3.5.2, "ECCS - Operating," B 3.5.3, "ECCS - Shutdown," and B 3.6.6, "Containment Spray System."

UFSAR Section 14.3.9 (Ref. 2) describes evaluations that confirm long-term core cooling is assured following any accident that requires recirculation from the containment recirculation sump.

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

LCO

The containment recirculation sump is required to ensure a source of borated water to support ECCS and CTS OPERABILITY. A containment recirculation sump consists of the containment drainage flow paths, debris interceptors including a debris gate in the Annulus, flood-up overflow wall openings, the recirculation sump strainers, and the inlet to the ECCS and CTS.. An OPERABLE containment recirculation 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.

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 recirculation 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 recirculation 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 recirculation sump pool or are generated within containment and transported to the containment recirculation sump.

Containment debris limits are defined in UFSAR Section 14.3.9 (Ref. 2).

APPLICABILITY	In MODES 1, 2, 3, and 4, containment recirculation sump OPERABILITY requirements are dictated by the ECCS and CTS OPERABILITY requirements. Since both the ECCS and the CTS must be OPERABLE in MODES 1, 2, 3, and 4, the containment recirculation 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 recirculation 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 UFSAR Section 14.3.9 (Ref. 2).

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 recirculation 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 recirculation 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 recirculation sump is inoperable.

The inoperable containment recirculation 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

BASES

ACTIONS (continued)

recirculation sump under accident conditions. The likelihood of an initiating event in the 90-day Completion 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

When the containment recirculation 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 recirculation sump occurring during this period.

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 recirculation 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 Systems," should be entered if an inoperable containment recirculation sump results in an inoperable CTS 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 recirculation 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	<u>SR 3.6.15.1</u> Periodic inspections are performed to verify the containment recirculation sump does not show current or potential debris blockage, structural damage, or abnormal corrosion to ensure the operability and structural integrity of the containment recirculation sump (Ref. 1). The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.
REFERENCES	1. UFSAR, Chapter 6 and Chapter 14 2. UFSAR, Section 14.3.9, “Containment and Recirculation Sump Analyses”.