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AEP-NRC-2017-30
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Docket Nos.: 50-315
50-316

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

Donald C. Cook Nuclear Plant Unit 1 and Unit 2
Response to Request for Additional Information Regarding the License Amendment
Request to Revise Technical Specification 3.9.3, Containment Penetrations

References:

1. Letter from Q. S. Lies, Indiana Michigan Power Company (I&M), to U. S. Nuclear Regulatory Commission (NRC), "Donald C. Cook Nuclear Plant, Units 1 and 2, License Amendment Request Regarding Technical Specification 3.9.3, Containment Penetrations," dated December 14, 2016, Agency wide Documents Access and Management System (ADAMS) Accession No. ML16351A198.
2. Email from A. W. Dietrich, NRC, to H. L. Kish, I&M, Donald C. Cook Nuclear Plant Unit 1 and Unit 2 – "Request for Additional Information for the License Amendment Request to Revise Technical Specification 3.9.3, Containment Penetrations," dated April 19, 2017, ADAMS Accession No. ML17112A033.

This letter provides Indiana Michigan Power Company's (I&M), the licensee for Donald C. Cook Nuclear Plant (CNP) Units 1 and 2, response to the Request for Additional Information (RAI) by the Nuclear Regulatory Commission (NRC) regarding a License Amendment Request (LAR) to amend Technical Specification (TS) 3.9.3, "Containment Penetrations," by revising the Note regarding applicability of the Limiting Condition for Operation.

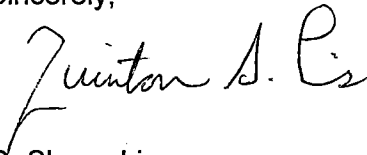
By Reference 1, I&M submitted a request to amend the TS to CNP Units 1 and 2 Renewed Facility Operating Licenses DPR-58 and DPR-74. I&M proposes to revise the Note for TS 3.9.3, "Containment Penetrations," to allow containment penetrations providing direct access from the containment atmosphere to the outside atmosphere that do not pass through the auxiliary building vent to be open under administrative control. By Reference 2, the NRC transmitted an RAI regarding the LAR submitted by I&M in Reference 1. A telephone conference was held between NRC staff and I&M on April 19, 2017, to clarify the information requested.

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Enclosure 1 to this letter provides an affirmation statement. Enclosure 2 to this letter provides I&M's response to the RAI contained in Reference 2. Enclosures 3 and 4 to this letter provide CNPs TS Bases pages marked to reflect the proposed change for Unit 1 and 2, respectively (for information only). Copies of this letter are being transmitted to the Michigan Public Service Commission and Michigan Department of Environmental Quality, in accordance with the requirements of 10 CFR 50.91.

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

Sincerely,



Q. Shane Lies
Site Vice President

RAW/kmh

Enclosures:

1. Affirmation
2. Response to Request for Additional Information Regarding the License Amendment Request to Revise Technical Specification 3.9.3, Containment Penetrations
3. CNP Unit 1 TS Bases Pages Marked to Show Proposed Changes (For Information Only)
4. CNP Unit 2 TS Bases Pages Marked to Show Proposed Changes (For Information Only)

c: R. J. Ancona, MPSC
J. K. Rankin, NRC, Washington, D.C.
MDEQ – RMD/RPS
NRC Resident Inspector
C. D. Pederson, NRC, Region III
A. J. Williamson, AEP Ft. Wayne, w/o enclosures

Enclosure 1 to AEP-NRC-2017-30

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



Q. Shane Lies
Site Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 26 DAY OF May, 2017


Notary Public

My Commission Expires 04-04-2018

DANIELLE BURGOYNE
Notary Public, State of Michigan
County of Berrien
My Commission Expires 04-04-2018
Acting in the County of Berrien

Enclosure 2 to AEP-NRC-2017-30

Response to Request for Additional Information Regarding the License Amendment Request to Revise Technical Specification 3.9.3, Containment Penetrations

By letter dated December 14, 2016 (Reference 1), Indiana Michigan Power Company (I&M), the licensee for the Donald C. Cook Nuclear Plant (CNP) Units 1 and 2, submitted a License Amendment Request (LAR). This amendment proposes to revise the Note for Technical Specification (TS) 3.9.3, "Containment Penetrations," to allow containment penetrations providing direct access from the containment atmosphere to the outside atmosphere that do not pass through the auxiliary building vent to be open under administrative control.

The Nuclear Regulatory Commission (NRC) staff in the Office of Nuclear Reactor Regulation is currently reviewing the submittal, and has determined that additional information is needed in order to complete the review (Reference 2). The text of the request for additional information (RAI) and I&M's response are provided below.

RAI-1

Based on the AST accident analysis for the fuel handling accident (FHA) in containment, the LAR proposed to revise the TS 3.9.3 LCO note to remove a restriction and allow containment penetrations providing direct access from the containment atmosphere to the outside atmosphere that do not pass through the auxiliary building vent to be open under administrative control.

The NRC staff reviewed its safety evaluation associated with CNP license amendment Nos. 332 for Unit No. 1, and 314 for Unit No. 2, (ADAMS Accession No. ML16242A111), to determine if the confirmatory dose calculations for the AST FHA indicate acceptable radiological consequences.

CNP TS 3.9.3 allows the personnel air lock to be open during movement of irradiated fuel assemblies within containment, and thus establishes a flow path from containment through the personnel airlock into the adjacent auxiliary building. The AST FHA analysis did not analyze this flow path. Following an FHA in containment, there exists a pathway for activity to migrate from the open containment airlock into the adjacent building and eventually into the control room.

- Explain how the potential contribution to the control room dose through the containment airlock is accounted for in, or bounded by, the AST FHA dose consequence analysis of record.*

I&M Response to RAI-1:

The FHA dose consequence analysis of record outlined in RWA-1313-015, Revision 1 (Enclosure 5 of Reference 3), models the most limiting credible dose release-receptor pair for a FHA occurring inside containment. The auxiliary building is procedurally maintained at a negative pressure with respect to atmospheric pressure to ensure adequate exhaust through

the plant vent. Therefore, for releases from containment into the auxiliary building (including those through the containment airlock), the only credible release point for radionuclide transport is the plant vent.

As stated in Section 3.2 of RWA-1313-015, Revision 1 (Enclosure 5 of Reference 3), the dose consequence analysis of a FHA inside containment modeled a release which was assumed to be a point on the external containment surface closest to the control room intakes. As shown in Table 2.3-3 of RWA-1313-015, Revision 1 (Enclosure 5 of Reference 3), the corresponding containment "closest point" atmospheric dispersion factors are limiting in comparison to the atmospheric dispersion factors derived for the release from the plant vent. As the most limiting atmospheric dispersion factors (containment "closest point") were utilized in the analysis, a release resulting from a FHA in containment released into the auxiliary building with eventual release from the plant vent would be bounded by the analysis outlined in RWA-1313-015, Revision 1 (Enclosure 5 of Reference 3).

RAI-2

Based on the AST accident analysis for the FHA in containment, the LAR proposed to revise the TS 3.9.3 LCO note to remove a restriction and allow containment penetrations providing direct access from the containment atmosphere to the outside atmosphere that do not pass through the auxiliary building vent to be open under administrative control.

The NRC staff reviewed its safety evaluation associated with CNP license amendment Nos. 332 for Unit 1, and 314 for Unit 2, (ADAMS Accession No. ML16242A111) to determine if the confirmatory dose calculations for the AST FHA indicate acceptable radiological consequences.

Removing the restriction from the TS 3.9.3 LCO note would allow containment penetrations that do not exit through the auxiliary building vent but are in the auxiliary building to be open. For example, as stated in the LAR, the component cooling water system containment building penetrations that do not exit through the auxiliary building vent could be opened during fuel movement in containment. The AST FHA analysis does not analyze these flow paths. Following an FHA in containment, these penetrations provide a pathway for activity to migrate from the containment into the adjacent auxiliary building and eventually into the control room.

- *Explain how the potential contribution to the control room dose through containment penetrations that do not exit through the auxiliary building vent but are in the auxiliary building are accounted for in, or bounded by, the AST FHA dose consequence analysis of record.*

I&M Response to RAI-2:

As stated in the response to RAI-1, the only credible ultimate release point for radionuclide transport for a FHA inside containment released into the auxiliary building is the plant vent. The FHA dose consequence analysis of record outlined in RWA-1313-015, Revision 1 (Enclosure 5 of Reference 3), models the most limiting credible dose release-receptor pair for a FHA

occurring inside containment, which is assumed to be a point on the external containment surface closest to the control room intakes. There are no new containment penetration allowances introduced by this License Amendment that exit through the Auxiliary Building Vent. Refer to the response to RAI-1 for further clarification.

RAI-3

The NRC staff reviewed its safety evaluation associated with CNP license amendment Nos. 259 for Unit No. 1, and 242 for Unit No. 2, dated November 21, 2001 (ADAMS Accession No. ML012770113), to determine if commitments were made from the licensee to implement administrative procedures that ensure that the open containment penetrations can and will be promptly closed in the event of an FHA. As stated in the safety evaluation, the capability to isolate the containment penetrations in the event of an FHA is desirable in the interest of defense-in-depth. This is captured in Footnote 3 of RG 1.183, Appendix B, which contains the NRC staff's guidance to licensees on acceptable assumptions for evaluating the radiological consequences of a FHA. RG 1.183, Appendix B, Footnote 3, applies to FHAs within an open containment, and states:

The staff will generally require that technical specifications allowing such operations include administrative controls to close the airlock, hatch, or open penetrations within 30 minutes. Such administrative controls will generally require that a dedicated individual be present, with necessary equipment available, to restore containment closure should a fuel handling accident occur. Radiological analyses should generally not credit this manual isolation.

As discussed in the safety evaluation associated with license amendment Nos. 259 and 242, the licensee committed to implement these administrative controls. The Bases for TS 3/4.9.4 were revised to state that appropriate personnel are aware of the open status of the penetration flow path during core alterations or movement of irradiated fuel in containment, and that specified individuals are designated and readily available to isolate the flow path in the event of an FHA. The safety evaluation states that the NRC staff found this commitment to be acceptable.

The LAR dated December 14, 2016, does not contain a discussion of this past commitment or explain if the new proposed penetration allowances will be added to, or included in, the past commitment. Nor does the LAR contain a discussion of the AST FHA analysis' consistency with RG 1.183, Appendix B, Footnote 3.

- *Describe the relationship of the past commitment to the new penetration allowances requested in the LAR, and explain how the AST FHA analysis is consistent with RG 1.183, Appendix B, Footnote 3.*

I&M Response to RAI-3:

The past commitment to allow containment penetrations to be opened while applying administrative controls as described in TS Bases 3.9.3 will apply to the new penetration allowances requested by the LAR. As described in Attachment 1 to Reference 4, I&M previously

committed to implement administrative controls by revising the bases for then T/S 3/4.9.4, which is currently TS Bases 3.9.3. By Reference 5, the NRC approved I&M's commitment to incorporate the requirement for administrative controls into I&M's licensing basis by revising the TS Bases. This license amendment is not requesting a change in this previous commitment and will retain the TS Bases language, but will be modified to reflect the proposed change to the TS 3.9.3 Note. The TS Bases pages marked to show proposed changes for both Unit 1 and Unit 2 are included in Enclosures 3 and 4, respectively, to reflect the proposed change to TS 3.9.3 Note and to show the commitment that is currently reflected in the TS Bases 3.9.3. These administrative actions are not credited by the FHA analysis as described in Reference 3 and are thusly consistent with Regulatory Guide 1.183, Appendix B, Footnote 3.

REFERENCES

1. Letter from Q. S. Lies, Indiana Michigan Power Company (I&M), to U. S. Nuclear Regulatory Commission (NRC), "Donald C. Cook Nuclear Plant, Units 1 and 2, License Amendment Request Regarding Technical Specification 3.9.3, Containment Penetrations," dated December 14, 2016, Agency wide Documents Access and Management System (ADAMS) Accession No. ML16351A198.
2. Email from A. W. Dietrich, NRC, to H. L. Kish, I&M, Donald C. Cook Nuclear Plant Unit 1 and Unit 2 – "Request for Additional Information for the License Amendment Request to Revise Technical Specification 3.9.3, Containment Penetrations," dated April 19, 2017, ADAMS Accession No. ML17112A033.
3. Letter from Q. S. Lies, I&M, to NRC, "Donald C. Cook Nuclear Plant Unit 1 and Unit 2 Response to Sixth Request for Additional Information Regarding the License Amendment Request to Adopt TSTF-490 and Implement Alternative Source Term," dated May 6, 2016, ADAMS Accession No. ML16169A115.
4. Letter from M. W. Rencheck, I&M, to NRC, "Donald C. Cook Nuclear Plant, Units 1 and 2 – License Amendment Request - Technical Specification Change for Inoperable A.C. or D.C. Distribution Systems in Modes 5 & 6 and for Containment Penetrations During Refueling," dated May 15, 2001, ADAMS Accession No. ML011380084.
5. Letter from J. F. Stang, NRC, to R. P. Powers, I&M, "Donald C. Cook Nuclear Plant, Units 1 and 2 - Issuance of Amendments (TAC Nos. MB1973 and MB1974)," dated November 21, 2001, ADAMS Accession No. ML012770113.

Enclosure 3 to AEP-NRC-2017-30

**CNP Unit 1 TS Bases Pages Marked to Show Proposed Changes
(For Information Only)**

BASES

LCO (continued)

and exhaust valve closure times specified in the UFSAR can be achieved and, therefore, meet the assumptions used in the safety analysis to ensure that releases through the valves are terminated, such that radiological doses are within the acceptance limit.

The LCO is modified by a Note allowing penetration flow paths with direct access from the containment atmosphere to the outside atmosphere ~~via the auxiliary building vent~~ to be unisolated under administrative controls. Administrative controls ensure that 1) appropriate personnel are aware of the open status of the penetration flow path during movement of irradiated fuel assemblies within containment, and 2) specified individuals are designated and readily available to isolate the flow path in the event of a fuel handling accident.

The containment personnel air lock doors may be open during movement of irradiated fuel in the containment provided that one door is capable of being closed in the event of a fuel handling accident. A designated individual shall be available at all times during movement of irradiated fuel to close an air lock door if required. Cables or hoses transversing the air lock shall be designed to allow for removal in a timely manner (e.g., quick disconnects). Should a fuel handling accident occur inside containment, one personnel air lock door will be closed following an evacuation of containment.

APPLICABILITY

The containment penetration requirements are applicable during movement of irradiated fuel assemblies within containment because this is when there is a potential for the limiting fuel handling accident. In MODES 1, 2, 3, and 4, containment penetration requirements are addressed by LCO 3.6.1. In MODES 5 and 6, when movement of irradiated fuel assemblies within containment is not being conducted, the potential for a fuel handling accident does not exist. Therefore, under these conditions no requirements are placed on containment penetration status.

ACTIONS

A.1

If the containment equipment hatch, air locks, or any containment penetration that provides direct access from the containment atmosphere to the outside atmosphere is not in the required status, including the Containment Purge Supply and Exhaust System not capable of automatic actuation when the purge supply and exhaust valves are open, the unit must be placed in a condition where the isolation function is not needed. This is accomplished by immediately suspending movement of irradiated fuel assemblies within containment. Performance of these actions shall not preclude completion of movement of a component to a safe position.

Enclosure 4 to AEP-NRC-2017-30

**CNP Unit 2 TS Bases Pages Marked to Show Proposed Changes
(For Information Only)**

BASES

LCO (continued)

and exhaust valve closure times specified in the UFSAR can be achieved and, therefore, meet the assumptions used in the safety analysis to ensure that releases through the valves are terminated, such that radiological doses are within the acceptance limit.

The LCO is modified by a Note allowing penetration flow paths with direct access from the containment atmosphere to the outside atmosphere via the ~~auxiliary building vent~~ to be unisolated under administrative controls. Administrative controls ensure that 1) appropriate personnel are aware of the open status of the penetration flow path during movement of irradiated fuel assemblies within containment, and 2) specified individuals are designated and readily available to isolate the flow path in the event of a fuel handling accident.

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