



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

July 10, 2015

Mr. Lawrence J. Weber
Senior Vice President and
Chief Nuclear Officer
Indiana Michigan Power Company
Nuclear Generation Group
One Cook Place
Bridgman, MI 49106

**SUBJECT: DONALD C. COOK NUCLEAR PLANT UNIT 1 - ISSUANCE OF EXIGENT
AMENDMENT REGARDING REVISION TO TECHNICAL SPECIFICATIONS
FOR ENGINEERED SAFETY FEATURE ACTUATION SYSTEM
INSTRUMENTATION (TAC NO. MF6390)**

Dear Mr. Weber:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 328 to Renewed Facility Operating License No. DPR-58 for the Donald C. Cook Nuclear Plant, Unit 1 (CNP-1). This amendment consists of a change to Technical Specification (TS) Table 3.3.2-1, "Engineered Safety Feature Actuation System Instrumentation," in response to your application dated June 29, 2015, as supplemented on July 2, 2015.

This amendment revises CNP-1 TS 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," by adding a new Condition for one or more inoperable Required Channels for main feedwater pump trips, changing Table 3.3.2-1 to add a footnote to the Applicable Mode Column for Mode 2 and to reflect the new Condition, and renumbering existing Conditions.

Indiana Michigan Power Company requested the proposed change under exigent circumstances in accordance with Title 10 of the *Code of Federal Regulations* paragraph 50.91(a)(6). The finding of exigent circumstances and determination that the amendment involves no significant hazards considerations are addressed in Sections 4.0 and 5.0 of the enclosed Safety Evaluation.

L. Weber

- 2 -

The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

If you have any questions regarding this letter, please contact me at (301) 415-2846 or by e-mail at Allison.Dietrich@nrc.gov.

Sincerely,

A handwritten signature in cursive script, appearing to read "Allison W. Dietrich".

Allison W. Dietrich, Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-315

Enclosures:

1. Amendment No. 328 to DPR-58
2. Safety Evaluation

cc w/encls: Distribution via Listserv



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

INDIANA MICHIGAN POWER COMPANY

DOCKET NO. 50-315

DONALD C. COOK NUCLEAR PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 328
License No. DPR-58

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Indiana Michigan Power Company (the licensee) dated June 29, 2015, as supplemented on July 2, 2015, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in Title 10 of the *Code of Federal Regulations* (10 CFR) Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. DPR-58 is hereby amended to read as follows:

(2) Technical Specifications

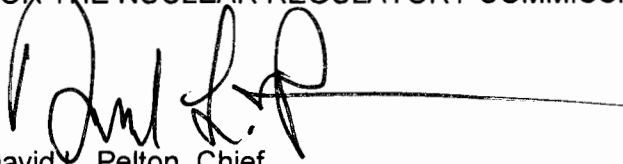
The Technical Specifications contained in Appendix A, and the Environmental Protection Plan contained in Appendix B, as revised through Amendment

Enclosure 1

No. 328, are hereby incorporated in this license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance, and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read 'David L. Pelton', followed by a long horizontal line extending to the right.

David L. Pelton, Chief
Project Licensing Branch 3-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility Operating License
and the Technical Specifications

Date of Issuance: July 10, 2015

ATTACHMENT TO LICENSE AMENDMENT NO. 328
TO RENEWED FACILITY OPERATING LICENSE NO. DPR-58
DOCKET NO. 50-315

Replace the following page of Renewed Facility Operating License No. DPR-58 with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

REMOVE

- 3 -

INSERT

- 3 -

Replace the following pages of Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the area of change.

REMOVE

3.3.2-3
3.3.2-4
3.3.2-5
3.3.2-11

INSERT

3.3.2-3
3.3.2-4
3.3.2-5
3.3.2-11

and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

- (4) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument and equipment calibration or associated with radioactive apparatus or components; and
- (5) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not to exceed 3304 megawatts thermal in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 328, are hereby incorporated in this license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Less than Four Loop Operation

The licensee shall not operate the reactor at power levels above P-7 (as defined in Table 3.3.1-1 of Specification 3.3.1 of Appendix A to this renewed operating license) with less than four reactor coolant loops in operation until (a) safety analyses for less than four loop operation have been submitted, and (b) approval for less than four loop operation at power levels above P-7 has been granted by the Commission by amendment of this license.

(4) Fire Protection Program

Indiana Michigan Power Company shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee's amendment request dated July 1, 2011, as supplemented by letters dated September 2, 2011, April 27, 2012, June 29, 2012, August 9, 2012, October 15, 2012, November 9, 2012, January 14, 2013, February 1, 2013,

ACTIONS (continued)

| | | |
|---|---|-----------------|
| <p>H. One or more Main Feedwater Pump trip channel(s) inoperable.</p> | <p>-----NOTE----- Two channels on one Main Feedwater pump may be inoperable for up to 4 hours during the process of removing the pump from service or placing the pump in service</p> <hr/> <p>H.1 Restore channel(s) to OPERABLE status.</p> | <p>48 hours</p> |
| <p>I. Required Action and associated Completion Time of Condition H not met for Function 6.g.</p> <p><u>OR</u></p> <p>Required Action and associated Completion Time of Condition D not met for Function 6.f.</p> | <p>I.1 Be in MODE 3.</p> | <p>6 hours</p> |

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|--------------------------------|
| <p>J. Required Action and associated Completion Time of Condition B not met for Function 8.a.</p> <p><u>OR</u></p> <p>Required Action and associated Completion Time of Condition C not met for Function 4.b, 5.a, 6.a, 6.b, or 7.b.</p> <p><u>OR</u></p> <p>Required Action and associated Completion Time of Condition D not met for Function 1.c, 1.d, 1.e.(1), 1.e.(2), 4.d, 4.e, 5.b, 6.c, 7.c, or 8.c.</p> <p><u>OR</u></p> <p>Required Action and associated Completion Time of Condition E not met for Function 2.c, 3.b.(3), or 4.c.</p> <p><u>OR</u></p> <p>Required Action and associated Completion Time of Condition F not met for Function 6.e.</p> <p><u>OR</u></p> <p>Required Action and associated Completion Time of Condition G not met for Function 8.b.</p> | <p>J.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>J.2 Be in MODE 4.</p> | <p>6 hours</p> <p>12 hours</p> |

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|--|-----------------|
| K. Required Action and associated Completion Time of Condition B not met for Function 1.a, 2.a, 3.a.(1), 3.b.(1), or 7.a. <u>OR</u> Required Action and associated Completion Time of Condition C not met for Function 1.b, 2.b, 3.a.(2), or 3.b.(2). | K.1 Be in MODE 3. | 6 hours |
| | AND K.2 Be in MODE 5. | 36 hours |
| L. Required Action and associated Completion Time of Condition B not met for Function 4.a. | L.1 Declare associated steam generator stop valve (SGSV) inoperable. | Immediately |

SURVEILLANCE REQUIREMENTS

-----NOTE-----
 Refer to Table 3.3.2-1 to determine which SRs apply for each ESFAS Function.

| SURVEILLANCE | | FREQUENCY |
|--------------|--|-----------|
| SR 3.3.2.1 | Perform CHANNEL CHECK. | 12 hours |
| SR 3.3.2.2 | -----NOTE----- Verification of relay setpoints not required. ----- Perform TADOT. | 31 days |

Table 3.3.2-1 (page 4 of 4)
Engineered Safety Feature Actuation System Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS | CONDITIONS | SURVEILLANCE REQUIREMENTS | ALLOWABLE VALUE |
|--|---|---|------------|--|--|
| 6. Auxiliary Feedwater | | | | | |
| c. SG Water Level - Low Low (per SG) | 1,2,3 | 3 | D | SR 3.3.2.1 SR 3.3.2.6 SR 3.3.2.10 SR 3.3.2.12 | ≥ 4.0% |
| d. SI Input from ESFAS | 1,2,3 | Refer to Function 1 (Safety Injection) for all initiation functions and requirements. | | | |
| e. Loss of Voltage (per bus) | 1,2,3 | 3 | F | SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.7 SR 3.3.2.12 | ≥ 3238.9 V and ≤ 3332.6 V with ≥ 1.8 sec and ≤ 2.2 sec time delay |
| f. Undervoltage Reactor Coolant Pump | 1,2 | 1 per bus | D | SR 3.3.2.5 SR 3.3.2.7 SR 3.3.2.12 | ≥ 2725 V |
| g. Trip of all Main Feedwater Pumps (per pump) | 1,2 ^(g) | 2 | H | SR 3.3.2.9 SR 3.3.2.12 | NA |
| 7. Containment Air Recirculation/Hydrogen Skimmer (CEQ) System | | | | | |
| a. Manual Initiation | 1,2,3,4 | 1 per train | B | SR 3.3.2.9 | NA |
| b. Automatic Actuation Logic and Actuation Relays | 1,2,3 | 2 trains | C | SR 3.3.2.3 SR 3.3.2.4 SR 3.3.2.8 | NA |
| c. Containment Pressure – High | 1,2,3 | 3 | D | SR 3.3.2.1 SR 3.3.2.6 SR 3.3.2.10 SR 3.3.2.12 | ≤ 1.17 psig |
| 8. ESFAS Interlocks | | | | | |
| a. Reactor Trip, P-4 | 1,2,3 | 1 per train | B | SR 3.3.2.9 | NA |
| b. Pressurizer Pressure, P-11 | 1,2,3 | 3 | G | SR 3.3.2.1 SR 3.3.2.6 SR 3.3.2.10 | ≤ 1915 psig |
| c. T _{avg} - Low Low, P-12 | 1,2,3 ^(b) | 1 per loop | D | SR 3.3.2.1 SR 3.3.2.6 SR 3.3.2.10 | ≥ 538.8°F |

(b) Above the P-12 (T_{avg} - Low Low) interlock.

(g) When one or more Main Feedwater pump(s) are supplying feedwater to steam generators.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 328 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-58

INDIANA MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT, UNIT 1

DOCKET NO. 50-315

1.0 INTRODUCTION

By letter dated June 29, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15181A002), as supplemented by letter dated July 2, 2015 (ADAMS Accession No. ML15187A366), Indiana Michigan Power Company (I&M, the licensee) submitted an exigent license amendment request (LAR) to revise the Donald C. Cook Nuclear Plant, Unit 1 (CNP-1) Technical Specification (TS) 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," by adding a new Condition for one or more inoperable Required Channels for main feedwater (MFW) pump trips, changing Table 3.3.2-1 to add a footnote to the Applicable Mode Column for Mode 2 and to reflect the new Condition, and renumbering existing Conditions.

The licensee identified during its review of U.S. Nuclear Regulatory Commission (NRC) Information Notice (IN) 2015-05, "Inoperability of Auxiliary and Emergency Feedwater Auto-Start Circuits on Loss of Main Feedwater Pumps," dated May 12, 2015 (ADAMS Accession No. ML15008A493), that there were several instances between 2006 and 2012 where the CNP-1 MFW systems were operated in a manner that the automatic initiation feature of auxiliary feedwater (AFW) pumps upon loss of all MFW pumps was disabled. The licensee determined that there is not a corresponding provision in the CNP-1 TSs that allows for the normal startup and shutdown of an MFW pump due to the design of the MFW pump trip channels and the operational requirements for startup and shutdown of an MFW pump.

The supplemental letter dated July 2, 2015, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in *The Herald-Palladium* on July 3 and 4, 2015.

2.0 REGULATORY EVALUATION

2.1 System Description

2.1.1 Main Feedwater System

As described in CNP-1 Updated Final Safety Analysis Report (UFSAR) Section 10.5.1, "Main Condensate and Feedwater System," the condensate and feedwater systems are designed to provide continuous and reliable feedwater flow to all steam generators (SGs) under all operating conditions. For the feedwater system, there are two turbine-driven, variable-speed main feed pumps installed in parallel.

This LAR supplemented the above UFSAR description with the following additional information on the MFW pumps:

The Main Feedwater Pump Turbines (MFPTs) provide motive power to drive the MFW pumps. The Feedwater Differential Pressure Control System regulates the speed, and thereby the differential pressure across the feedwater regulating valves to maintain valve operation in the linear response region. The MFPT Control System provides control of the MFPT stop valves which isolate steam flow to the MFPT for various equipment and plant conditions.

This LAR states that each turbine driven MFW pump is equipped with a low- and high-pressure steam stop valve. The control scheme for CNP-1 MFW pumps considers the MFW pumps to be tripped when both the turbine low pressure and the high pressure stop valves are shut. For the MFW pump warm-up operation, either both stop valves will be open, or both stop valves will be shut. One stop valve cannot be opened or closed independently of the other stop valve, which has been the configuration of the MFPTs since the initial startup of CNP-1.

TS Bases 3.3.2, item 6(g) describes the AFW system with respect to the trip logic of all MFW pumps. The TS Bases states that a trip of all MFW pumps is an indication of a loss of MFW and the subsequent need for some method of decay heat and sensible heat removal to bring the reactor back to no load temperature and pressure. Each stop valve contains a limit switch (i.e., channel), which actuates when the associated stop valve is closed. Both of the stop valve limit switches must actuate to indicate a turbine driven MFW pump has tripped. Since the unit includes two turbine driven MFW pumps, all four channels (two per pump) must trip to start the motor driven AFW pumps (i.e., a 4-out-of-4 logic configuration). The Limiting Condition for Operation (LCO) requires two channels per pump to be OPERABLE.

The AFW initiation logic does not meet the single failure criteria. This is acceptable because the SG Water Level Low - Low Function is credited to start the AFW system in the design-basis accidents and transients resulting in a loss of MFW. The trip of all MFW pumps to initiate AFW is not credited in the safety analysis.

2.1.2 Auxiliary Feedwater System

As described in CNP-1 UFSAR Section 10.5.2, "Auxiliary Feedwater System," Main Condensate and Feedwater System," the AFW system is designed to provide sufficient make-up to the SGs

when the MFW supply is not available, particularly under the following scenarios: loss of MFW, station blackout, cooldown, rupture of main feedline, and rupture of main steamline.

Installed in Unit 1 is one turbine-driven auxiliary feedwater pump (TDAFP), which feeds all four SGs and two motor-driven AFW pumps (MDAFPs), each of which feeds two SGs. Train orientation is maintained throughout the AFW system including the AFW pumps, all associated valves, instrumentation, and controls.

The normal water source for AFW pumps is from the condensate storage tank. An emergency water source is provided from the Essential Service Water System. Transfer of water source is accomplished by a remotely-operated, motor-operated valve and a manual valve. The supply line from the condensate storage tank in each unit is cross-tied through a normally closed valve to provide an additional source of high purity water.

The MDAFPs start automatically on the following signals:

- 1) low-low SG water level in one of four SGs
- 2) safety injection signal
- 3) trip of both MFW pumps
- 4) blackout signal initiated by loss of normal voltage to 4 kilovolt safety bus
- 5) less than 25 percent feedwater flow to 3 out of 4 loops when above 40 percent power.

UFSAR Section 14.1.8, "Loss of External Electrical Load," Section 14.1.9, "Loss of Normal Feedwater," and Section 14.1.12, "Loss of All AC Power to the Plant Auxiliaries," all state that the AFW pumps automatically start on sensed low-low SG water level.

The LAR supplemented the above UFSAR description with additional information on the MFW pumps:

The Auxiliary Feedwater (AFW) auto-start function on a Trip of all MFW pumps is an anticipatory function in that it provides early actuation of the AFW system to mitigate the consequences of a loss of normal feedwater.

2.2 Description of Proposed Change

The proposed change would add a new Condition H to LCO 3.3.2, and would state:

One or more Main Feedwater Pump trip channel(s) inoperable.

The proposed Required Action for TS 3.3.2 Condition H would state:

H.1 Restore channel(s) to OPERABLE status.

The proposed change would revise the Applicability for the Required Action for the new Condition H with the following:

-----NOTE-----
Two channels on one Main Feedwater pump may be inoperable for up to 4 hours during the process of removing the pump from service or placing the pump in service.

The proposed Completion Time for Required Action H.1 would be 48 hours.

The proposed change would revise Mode 2 applicability for Function 6.g with the following note:

When one or more Main Feedwater Pump(s) are supplying feedwater to steam generators.

The proposed change would adjust the labeling of the remaining Conditions within the body of the TS 3.3.2 table. For example, the existing Conditions I, J, K, would be relabeled as Conditions J, K, and L.

2.3 Applicable Regulatory Requirements

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TSs as part of the license.

The NRC's requirements related to the content of the TSs are contained in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section 50.36(c). The regulations at 10 CFR 50.36(c) require that the TSs include items in the following categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) LCOs; (3) surveillance requirements; (4) design features; and (5) administrative controls. As specified in 10 CFR 50.36(c)(2)(i), LCOs are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When an LCO of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TSs until the condition can be met.

The four criteria defined by 10 CFR 50.36(c)(2)(ii) for determining whether particular items should be included in the TS LCOs are as follows:

Criterion 1. Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

Criterion 2. A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 4. A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

As stated in 10 CFR 50.59(c)(1)(i), a licensee is required to submit a license amendment pursuant to 10 CFR 50.90 if a change to the TSs is required. Furthermore, the requirements of 10 CFR 50.59 necessitate that the NRC approve the TS changes before the changes are implemented. The licensee's submittal meets the requirements of 10 CFR 50.59(c)(1)(i) and 10 CFR 50.90.

As described in the CNP UFSAR Section 1.4, the Plant Specific Design Criteria (PSDC) define the principal criteria and safety objectives for the CNP design. The following PSDC are relevant to the proposed amendment:

PSDC CRITERION 12, Instrumentation And Control Systems, states:

Instrumentation and controls shall be provided as required to monitor and maintain within prescribed operating ranges essential reactor facility operating variables.

PSDC CRITERION 37, Engineered Safety Features Basis For Design, states:

Engineered Safety Features shall be provided in the facility to back up the safety provided by the core design, the reactor coolant pressure boundary, and their protection systems. Such Engineered Safety Features shall be designed to cope with any size reactor coolant piping break up to and including the equivalent of a circumferential rupture of any pipe in that boundary, assuming unobstructed discharge from both ends.

PSDC CRITERION 38, Reliability and Testability of Engineered Safety Features, states:

All Engineered Safety Features shall be designed to provide such functional reliability and ready testability as is necessary to avoid undue risk to the health and safety of the public.

3.0 TECHNICAL EVALUATION

3.1 Background

IN 2015-05 describes several instances between 2006 and 2012 where licensees operated their MFW systems in such a manner that the automatic initiation of auxiliary or emergency feedwater on loss of all MFW pumps was disabled. The licensee evaluated IN 2015-05 as an

industry operating experience evaluation, and on June 18, 2015, determined that the design and operation of the CNP-1 MFW pumps has resulted in conditions similar to those described in IN 2015-05.

Additionally, the licensee determined that due to the design of the CNP-1 MFW pump trip channels, and the MFW pump operational requirements for startup and shutdown of a MFW pump, there is no corresponding provision in the CNP-1 TS allowing for the normal startup and shutdown of an MFW pump, therefore requiring an unnecessary entry into TS LCO 3.0.3, plant shutdown. This condition has been entered in CNP's corrective action program to evaluate past compliance with the CNP-1 TS.

3.2 NRC Staff Evaluation

The CNP-1 TS 3.3.2, Engineered Safety Feature Actuation System (ESFAS) Instrumentation, requires the function of AFW Actuation initiated by a trip of all MFW pumps to be operable in Mode 1, Power Operation, and Mode 2, Startup. The required number of channels is two per pump. With one of the channels inoperable, TS 3.3.2 Condition B is entered. Condition B requires that the channel be restored to operable status within 48 hours. The TS do not provide a Condition or Required Action for inoperability of two channels per pump. Therefore, the licensee is required to enter TS 3.0.3 if two channels per pump are inoperable. TS 3.0.3 requires that the plant be placed in Mode 3, Hot Standby, within 7 hours.

The proposed TS change adds a Note to Condition H, which states that during plant startup of the MFW pumps, both channels on the same MFW pump can be inoperable (non-functional) for up to 4 hours without a required entry into Action Condition H. In addition, Condition H was modified to permit one or more channels to be inoperable for up to 48 hours. The previous Condition allowing only one channel to be inoperable was too restrictive to allow testing of MFW pumps in this 4-out-of-4 logic configuration.

In its supplement dated July 2, 2015, the licensee clarified the purpose of the 4-hour inoperable Note and the 48-hour Completion Time for Required Action H.1. The licensee stated that the 4-hour Note would normally not be used during the start of the first MFW pump because during that time, the AFW pumps are supplying water to the SGs. The first MFW pump is started, and after warm up, it supplies feedwater to the SGs. The licensee stated that its use of the 4-hour inoperable Note begins when the second MFW pump is started. Once the second MFW pump is either capable of feeding the SGs (i.e., discharge pressure of the MFW pump is just below SG pressure), or is feeding the SGs, the 4-hour inoperable Note would no longer apply. In this condition, both MFW pumps would be in service and the two required channels per pump would be able to provide the required trip input for actuation of AFW. The 4-hour inoperable Note would not normally be used during plant shutdown.

The current plant equipment does not permit opening of one of the two stop valves on a single MFW pump. The resetting of an MFPT causes both associated stop valves to open. Without the requested changes, the licensee would need to enter LCO 3.0.3 during every plant startup, which is not desirable. The duration of 4 hours is justifiable because it takes time to warm up the MFPT and to start the second MFW pump. In addition, the plant safety function is met by automatic start of both AFW pumps on low-low SG level. Automatic start of the AFW pumps on

trip of both MFW pumps is not a credited event in the plant accident analysis. Therefore, the 4-hour inoperable time for two channels is acceptable.

The NRC staff confirmed through the review of provided CNP-1 Operating Procedures that the MFW pumps' trip logic input into the AFW pump automatic start needs to be inoperable or bypassed for up to 4 hours to allow MFW pump startup and shutdown. Four hours was confirmed to be a reasonable time for the inoperability or bypass of the auto-start logic. This logic for the AFW auto-start function on a trip of all MFW pumps is an anticipatory function in that it provides early actuation of the AFW system to mitigate the consequence of a loss of normal feedwater. In addition, if an MFW pump was to trip, and the logic was inoperable or bypassed for the 4-hour duration per AFW pump, the AFW system, including MDAFPs and TDAFPs, would recover the SG water level based on the low-low SG water level logic, and would provide the necessary feed for reactor heat removal.

The NRC staff concludes the proposed changes to CNP-1 TS 3.3.2 and Table 3.3.2-1 are acceptable related to the logic trip of all MFW pumps' input into the logic for automatic start of the MDAFPs. The proposed changes are conservative because the changes more clearly define the conditions for applicability of the TS. The changes will allow a reasonable time for plant startup without a required entry in Action Condition H. In addition, the changes will allow one channel or more to be inoperable for up to 48 hours in the required Applicable Modes (1 and 2).

In its supplement dated July 2, 2015, the licensee clarified the purpose of the 48-hour Completion Time by stating the following:

[W]ith one MFW pump in service, the second MFW pump turbine may be started uncoupled from the pump to facilitate some post maintenance testing activities. In this instance, Required Action H.1 would be entered and the 48-hour completion time would only apply when the stop valves are opened. This post maintenance testing is not considered a normal plant startup or shutdown activity, but instead can be completed with one MFW pump in service to facilitate completion of maintenance activities.

Additionally, required action H.1 would be entered any time one or more MFW pump trip channels are inoperable due to an actual channel failure or degradation mechanism being present.

The proposed Completion Time of 48 hours for Required Action H.1 is consistent with the previous Condition B. However, the previous Condition was limited to one channel. A 4-out-of-4 logic with any number of channels inoperable would render the auto-start function of AFW pumps inoperable. Therefore, the use of 48 hours to restore one or more of the inoperable channels, consistent with the previous Condition B, is acceptable.

The regulations at 10 CFR 50.36 define the broad categories of information that are contained in the TS, but do not specify the content requirements for individual specifications. The proposed change modifies the number of channels required to be operable to provide AFW initiation of a trip of MFW pumps. The requirement to maintain the function and the remedial measures to be taken if one or more of these instruments becomes inoperable is

maintained. Therefore, the LCO and associated Conditions and Required Actions remain in compliance with 10 CFR 50.36 requirements.

4.0 EXIGENT CIRCUMSTANCES

4.1 Background

The NRC's regulations contain provisions for issuance of amendments when the usual 30-day public comment period cannot be met. These provisions are applicable under exigent circumstances. Consistent with the requirements in 10 CFR 50.91(a)(6), exigent circumstances exist when: (1) a licensee and the NRC must act quickly; (2) time does not permit the NRC to publish a *Federal Register* notice allowing 30 days for public comment; and (3) the NRC determines that the amendment involves no significant hazards consideration. As discussed in the licensee's LAR dated June 29, 2015, the licensee requested that the proposed amendment be processed by the NRC on an exigent basis.

Where the Commission finds that exigent circumstances exist, the Commission will provide for a reasonable opportunity for the public to comment, using its best efforts to make available to the public whatever means of communication it can for the public to respond quickly, and, in the case of telephone comments, have these comments recorded or transcribed, as necessary and appropriate. The Commission will also require the licensee to explain the exigency and why the licensee cannot avoid it, and use its normal public notice and comment procedures in 10 CFR 50.91(a)(2) if it determines that the licensee has failed to use its best efforts to make a timely application for the amendment in order to create the exigency and to take advantage of this procedure.

Under the provisions in 10 CFR 50.91(a)(6), the NRC notifies the public in one of two ways: (1) by issuing a *Federal Register* notice providing an opportunity for hearing and allowing at least 2 weeks from the date of the notice for prior public comments; or (2) by using local media to provide reasonable notice to the public in the area surrounding the licensee's facility. In this case, the NRC used the second approach and published a public notice in a newspaper local to CNP-1 facility, *The Herald-Palladium* (<http://www.heraldpalladium.com>), located in the city of St. Joseph, Michigan, on July 3 and 4, 2015. The notice included the NRC staff's proposed no significant hazards consideration determination, and provided an opportunity for public comment until 5:00 p.m. on July 8, 2015, regarding the staff's proposed no significant hazards consideration determination. No public comments were received regarding the proposed amendment.

4.2 Licensee's Basis for Exigent Circumstances

The licensee is basing exigent circumstances on the following:

On May 31, 2015, CNP-1 was shut down to repair an inoperable emergency diesel generator (EDG), which experienced a bearing failure during post-maintenance testing. The EDG bearing failure that resulted in the shutdown condition of CNP-1 could not have been reasonably foreseen. The upcoming startup of CNP-1 would require a normal startup of the CNP-1 MFW pumps, which currently have no TS provisions that reflect the design of the normal operation of the MFW pumps and the pump trip inputs for auto-actuation of the AFW pumps. The operating

limitations of the CNP-1 TSs have existed since initial plant operation and were recently identified through the issuance of IN 2015-05, and could not have been reasonably foreseen. Based on the above, the licensee could not have avoided the situation that has resulted in the need for an exigent amendment.

The licensee requested approval of this proposed license amendment prior to Mode 2 entry during restart of CNP-1 from the current forced outage, where Mode 2 is defined by TSs as less than or equal to 5 percent rated thermal power. The licensee projected startup of CNP-1 to commence on or about July 12, 2015. Therefore, this did not allow time for a 30-day public comment period as specified in 10 CFR 50.91(a)(2)(ii) prior to issuance.

4.3 NRC Staff Conclusion

Based on the above circumstances, the NRC staff determines that the licensee made a timely application for the proposed amendment following identification of the issue. In addition, the NRC staff finds that the licensee could not have reasonably foreseen the need for changing the CNP-1 TSs to support plant startup from the current forced maintenance outage. Based on these findings, and the determination that the amendment involves no significant hazards consideration as discussed below, the NRC staff has determined a valid need exists for issuance of the license amendment using the exigent provisions of 10 CFR 50.91(a)(6).

5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The NRC's regulations in 10 CFR 50.92 state that the NRC may make a final determination that a license amendment involves no significant hazards consideration if operation of the facility, in accordance with the amendment, would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

As required by 10 CFR 50.91(a), in its application dated June 29, 2015, the licensee provided its analysis of the issue of no significant hazards consideration, using the standards in 10 CFR 50.92, which is presented below:

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

Response: No.

The design basis events which impose initiation of the AFW system requirements are loss of normal MFW, main steam line break, loss of offsite power (LOOP), and a small-break loss-of-coolant accident. These design bases event evaluations assume actuation of the AFW system due to LOOP signal, a SG water level low-low, or a safety injection signal. The anticipatory motor-driven AFW pump auto-start signals from the MFW pumps are not credited in any design-basis accidents and are, therefore, not part of the primary success path for postulated accident mitigation as defined by 10 CFR 50.36(c)(2)(ii), Criterion 3. Modifying the

Completion Time clock activation requirements, providing a Condition and Required Actions for more than one inoperable channel for this function, and modifying Modes 1 and 2 Applicability for this function will not impact any previously evaluated design-basis accidents.

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

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

Response: No.

The TS change allows for one or more MFW pump channels to be inoperable during Modes 1 and 2, and has an operational allowance during Modes 1 and 2 for placing MFW pumps in service or securing MFW pumps. This change involves an anticipatory AFW auto-start function that is not credited in the accident analysis. Since this change only affects the conditions at which this auto-start function needs to be operable and does not affect the function that actuates AFW due to LOOP, low-low SG level, or a safety injection signal, it will not be an initiator to a new or different kind of accident from any accident previously evaluated.

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

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

Response: No.

This TS change involves the automatic start of the AFW pumps due to trip of both MFW pumps, which is not an assumed start signal for design basis events. This change does not modify any values or limits involved in a safety related function or accident analysis.

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

Based on the above evaluation, the NRC staff concludes that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff has made a final determination that no significant hazards consideration is involved for the proposed amendment and that the amendment should be issued as allowed by the criteria contained in 10 CFR 50.91.

6.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Michigan State official was notified of the proposed issuance of the amendment. The State official had no comments.

7.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding in *The Herald-Palladium* on July 3 and 4, 2015, that the amendment involves no significant hazards consideration, and there has been no public comment on such finding. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

8.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that 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.

Contributors: M. Chernoff
G. Singh
L. Wheeler
T. Beltz

Date: July 10, 2015

L. Weber

- 2 -

The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

If you have any questions regarding this letter, please contact me at (301) 415-2846 or by e-mail at Allison.Dietrich@nrc.gov.

Sincerely,

/RA/

Allison Dietrich, Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-315

Enclosures:

1. Amendment No. 328 to DPR-58
2. Safety Evaluation

cc w/encls: Distribution via Listserv

DISTRIBUTION:

PUBLIC

Branch Reading

RidsNrrLAJBurkhardt Resource

RidsNrrPMDCCook Resource

RidsOgcMailCenter Resource

RidsNrrDorIDpr Resource

RidsNrrLpl3-1 Resource

RidsAcrsAcnw_MailCTR Resource

RidsNrrLAMHenderson Resource

RidsRgn3MailCenter Resource

RidsNrrDssStsb Resource

RidsNrrDeEicb Resource

RidsNrrDssSbpb Resource

MChernoff, NRR

GSingh, NRR

LWheeler, NRR

TBeltz, NRR

ADAMS Accession No.: ML15187A002 *via memo **via email

| | | | | |
|--------|----------------|-----------------------------|----------------|----------------|
| OFFICE | DORL/LPL3-1/PM | DORL/LPL3-1/LA** | DSS/SBPB/BC* | DE/EICB/BC* |
| NAME | ADietrich | MHenderson (JBurkhardt for) | GCasto | JThorp |
| DATE | 07/9/15 | 7/9/15 | 07/8/15 | 07/8/15 |
| OFFICE | DSS/STSB/BC | OGC - NLO | DORL/LPL3-1/BC | DORL/LPL3-1/PM |
| NAME | RElliott | DRoth | DPelton | ADietrich |
| DATE | 7/9/15 | 7/10/15 | 7/10/15 | 7/10/15 |

OFFICIAL AGENCY RECORD