

WASHINGTON, D.C. 20555-0001

## SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

## RELATED TO AMENDMENT NO. 229TO FACILITY OPERATING LICENSE NO. DPR-58

## AND AMENDMENT NO. 212TO FACILITY OPERATING LICENSE NO. DPR-74

#### INDIANA MICHIGAN POWER COMPANY

### DONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2

#### DOCKET NOS. 50-315 AND 50-316

#### 1.0 INTRODUCTION

By letter dated September 14, 1998, the Indiana Michigan Power Company (the licensee) requested amendments to the Technical Specifications (TS) appended to Facility Operating License Nos. DPR-58 and DPR-74 for the Donald C. Cook Nuclear Plant (D.C. Cook), Units 1 and 2. The proposed amendments would revise TS page 3/4 5-6, "Limiting Conditions for Operation and Surveillance Requirements - Emergency Core Cooling Systems (ECCS)," and its associated Bases to change runout limits for a safety injection (SI) pump to 675 gallons per minute (gpm) unless the pump is specifically tested to a higher flow rate not exceeding 700 gpm for Units 1 and 2. Currently TS 4.5.2.h runout limits for an SI pump are limited to 700 gpm. Westinghouse correspondence received by the licensee in 1991 indicated that the generic runout limit for Pacific 2-inch JTCH pumps is 675 gpm, unless each specific pump is tested to a higher flow. In 1992, the licensee concluded that the intent of the TS was being met by procedural controls for limiting runout flow for untested pumps and that a change to the TS was not necessary. Recently, additional review by the licensee has concluded that the TS change should have been initiated. The proposed amendment is needed to correct a technical discrepancy in the runout flow limit for SI pumps that have not been specifically tested to the limits currently allowed by TS 4.5.2.h.

#### 2.0 EVALUATION

The licensee proposes to revise TS page 3/4 5-6 to change SI pump runout limits from 700 gpm to 675 gpm unless the pump is specifically tested to a higher flow rate not to exceed 700 gpm for Units 1 and 2. The proposed TS change would also clarify the basis for setting the SI pump runout limits, describing why the injection lineup is more conservative than the sump recirculation lineup for potential SI pump runout.

TS Amendment No. 84, dated June 24, 1985, and TS Amendment No. 64, dated June 18, 1984, for Units 1 and 2, respectively, changed the allowable SI pump runout limits in TS 4.5.2.h from 650 gpm to 700 gpm. Changes in SI pump miniflow recirculation increased miniflow capacity from 30 gpm to 60 gpm. The licensee anticipated that this increase would make it difficult to achieve all of the SI pump design flow objectives without exceeding the 650 gpm runout limit. Vendor testing by Dresser Industries of a replacement SI pump established a

700 gpm runout limit for the pump. The licensee confirmed that net positive suction head was sufficient to safely achieve 700 gpm and the testing was applicable to the three untested pumps that were already installed.

In 1991, the licensee received correspondence from Westinghouse indicating that the generic runout limits for Pacific 2-inch JTCH pumps is 675 gpm, unless each individual pump is tested to a higher flow. Testing of one SI pump is limited to the tested pump alone due to manufacturing tolerances in sand-cast impellers and material changes in the pump casing that limit the applicability of testing to other pumps. Therefore, the 675 gpm generic runout limit applies to the three untested pumps. Review of SI pump flow balancing data indicated that proper balancing could be achieved without exceeding 675 gpm for the three untested pumps. Procedure 12 EHP 4030 STP.208SI, "U1 and U2 ECCS Flow Balance Safety Injection System," was changed to administratively limit the flow of the three untested pumps to 675 gpm. However, no TS changes were initiated.

The licensee is currently proposing to remedy the technical discrepancy in TS 4.5.2.h by changing the runout limit for a single SI pump to 675 gpm, unless tested to a higher flow rate not to exceed 700 gpm. The licensee also proposes to change TS page B 3/4 5-2 for Units 1 and 2 to clarify the basis for setting the runout flow limits. The TS change explains why the injection lineup is the minimum resistance and, hence, more conservative configuration to ensure that pump runout limits are not exceeded in the recirculation mode when the residual heat removal pumps are providing a suction pressure boost. The injection lineup is more conservative due to the splitting of the SI trains during circulation, resulting in a higher system resistance than with a single SI pump injecting to all four reactor coolant loops. Therefore, the injection mode should be used in maintenance of proper flow resistance and pressure drop in the piping system to each injection point to prevent pump flow from exceeding runout conditions in the recirculation lineup.

Flow balancing performed at DC Cook supports the ability of the SI pumps to deliver the minimum TS flow of 300 gpm to each pair of cold leg injection points without exceeding the 675 gpm pump runout limits in the three untested pumps. Thus, the ECCS performance objectives of 10 CFR 50.46 are not affected by the TS change. Flow balancing has also demonstrated that an adequate margin to the proposed runout limits will be maintained. Furthermore, the TS change will help ensure that SI pumps do not operate at runout conditions, which can lead to mechanical stress and damage to the SI pumps.

The licensee has proposed to change TS 4.5.2.h runout limits for an SI pump to 675 gpm, unless the pump is specifically tested to a higher flow rate not to exceed 700 gpm for both Unit 1 and Unit 2 SI pumps. The proposed TS change is in accordance with Westinghouse correspondence indicating that the generic limits for Pacific 2-inch JTCH pumps is 675 gpm, unless each specific pump is tested to a higher flow.

Since the proposed runout limit is more conservative than the current limit and SI pump flow balancing data indicates that SI pumps will be able to deliver minimum flow to the cold leg injection points without exceeding 675 gpm in the SI pump, the proposed change to the TS will provide an equivalent level of protection as the current TS.

Based on the above evaluation, the NRC staff finds that the proposed TS changes are acceptable.

#### 3.0 STATE CONSULTATION

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

#### 4.0 ENVIRONMENTAL CONSIDERATION

These amendments change the requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or change the surveillance requirements. The staff has determined that the amendments involve 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 that the amendments involve no significant hazards consideration and there has been no public comment on such finding (64 FR 47533). Accordingly, the amendments meet 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 amendments.

#### 5.0 CONCLUSION

The staff 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) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: C. Sochor

Date: October 21, 1999



WASHINGTON, D.C. 20555-0001 October 21, 1999

Mr. Robert P. Powers, Senior Vice President Indiana Michigan Power Company Nuclear Generation Group 500 Circle Drive Buchanan, MI 49107

#### SUBJECT: DONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: SAFETY INJECTION PUMP RUNOUT LIMITS (TAC NOS. MA3715 AND MA3716)

Dear Mr. Powers:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No.229to Facility Operating License No. DPR-58 and Amendment No.212o Facility Operating License No. DPR-74 for the Donald C. Cook Nuclear Plant, Units 1 and 2. The amendments consist of changes to the Technical Specifications in response to your application dated September 14, 1998.

The amendments would revise TS page 3/4 5-6, "Limiting Conditions for Operation and Surveillance Requirements - Emergency Core Cooling Systems (ECCS)," and its associated Bases to change runout limits for a safety injection pump to 675 gallons per minute (gpm) unless the pump is specifically tested to a higher flow rate not exceeding 700 gpm for Units 1 and 2.

A copy of our related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's next biweekly <u>Federal Register</u> notice.

Sincerely,

John F. Stang, Sr. Project Manager, Section 1 Project Directorate III Division of Licensing Project Management Office of Nuclear Reactor Regulation

Docket Nos. 50-315 and 50-316

Enclosures:

- 1. Amendment No. 229 to DPR-58
- 2. Amendment No. 212 to DPR-74
- 3. Safety Evaluation

cc w/encls: See next page

Robert P. Powers Indiana Michigan Power Company

cc:

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WASHINGTON, D.C. 20555-0001

#### INDIANA MICHIGAN POWER COMPANY

#### DOCKET NO. 50-315

### DONALD C. COOK NUCLEAR PLANT, UNIT 1

## AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 229 License No. DPR-58

- 1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Indiana Michigan Power Company (the licensee) dated September 14, 1998, 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 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 Facility Operating License No. DPR-58 is hereby amended to read as follows:
  - (2) <u>Technical Specifications</u>

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 229, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications..

3. This license amendment is effective as of the date of issuance, with full implementation within 45 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Claudia M. Craig, Chief, Section 1 Project Directorate III Division of Licensing Project Management Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: October 21, 1999

# ATTACHMENT TO LICENSE AMENDMENT NO. 229

# TO FACILITY OPERATING LICENSE NO. DPR-58

## DOCKET NO. 50-315

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

REMOVE	INSERT
3/4 5-6	3/4 5-6
B 3/4 5-2	B 3/4 5-2

# 3/4LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS3/4.5EMERGENCY CORE COOLING SYSTEMS (ECCS)

#### SURVEILLANCE REQUIREMENTS (Continued)

2. At least once per 18 months.

Boron Injection Throttle Valves	Safety Injection Throttle Valves			
Valve Number	Valve Number			
1. 1-SI-141 L1 2. 1-SI-141 L2 3. 1-SI-141 L3 4. 1-SI-141 L4	1. 1-SI-121 N 2. 1-SI-121 S			

h. By performing a flow balance test during shutdown following completion of modifications to the ECCS subsystem that alter the subsystem flow characteristics and verifying the following flow rates:

Boron Injection System	Safety Injection System			
Single Pump*	Single Pump**			
Loop 1 Boron Injection Flow	Loop 1 and 4 Cold Leg			
117.5 gpm	Flow $\geq$ 300 gpm			
Loop 2 Boron Injection Flow 117.5 gpm	Loop 2 and 3 Cold Leg Flow $\ge$ 300 gpm			
Loop 3 Boron Injection Flow	**Combined Loop 1, 2, 3 and 4 Cold Leg			
117.5 gpm	Flow (single pump) less than or equal to 640			
Loop 4 Boron Injection Flow	pump is specifically qualified to a higher flow			
117.5 gpm	up to a maximum of 700 gpm.			

\*The flow rate in each Boron Injection (BI) line should be adjusted to provide 117.5 gpm (nominal) flow in each loop. Under these conditions there is zero miniflow and 80 gpm plus or minus 5 gpm simulated RCP seal injection line flow.

The actual flow in each BI line may deviate from the nominal so long as:

- a) the difference between the highest and lowest flow is 25 gpm or less.
- b) the total flow to the four branch lines does not exceed 470 gpm.
- c) the minimum flow (total flow) through the three most conservative (lowest flow) branch lines must not be less than 300 gpm.
- d) the charging pump discharge resistance (2.31 x Pd/Qd<sup>2</sup>) must not be less than 4.73E-3 ft/gpm<sup>2</sup> and must not be greater than 9.27E-3 ft/gpm<sup>2</sup>, (Pd is the pump discharge pressure at runout; Qd is the total pump flow rate.)

#### 3/4 BASES 3/4.5 EMERGENCY CORE COOLING SYSTEMS

## 3/4.5.2 and 3/4.5.3 ECCS SUBSYSTEMS (Continued)

With the RCS temperature below 350°F, one OPERABLE ECCS subsystem is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the limited core cooling requirements.

The limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps and safety injection pumps, except the required OPERABLE charging pump, to be inoperable below 152°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained. Surveillance requirements for throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration<sup>\*</sup>, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

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Observing these limits while flow balancing the SI pumps in the injection mode will ensure they are not exceeded in the recirculation mode (RHR pumps provide a suction pressure boost) due to the higher system resistance resulting from splitting of the SI trains when in the recirculation lineup.



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#### INDIANA MICHIGAN POWER COMPANY

#### DOCKET NO. 50-316

## DONALD C. COOK NUCLEAR PLANT, UNIT 2

## AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 212 License No. DPR-74

- 1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Indiana Michigan Power Company (the licensee) dated September 14, 1998, 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 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 Facility Operating License No. DPR-74 is hereby amended to read as follows:
  - (2) <u>Technical Specifications</u>

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 212, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance, with full implementation within 45 days.

FOR THE NUCLEAR REGULATORY COMMISSION

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Claudia M. Craig, Chief, Section 1 Project Directorate III Division of Licensing Project Management Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: October 21, 1999

# ATTACHMENT TO LICENSE AMENDMENT NO. 212

# FACILITY OPERATING LICENSE NO. DPR-74

# DOCKET NO. 50-316

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

REMOVE	INSERT
3/4 5-6	3/4 5-6
B 3/4 5-2	B 3/4 5-2

### 3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS 3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

## SURVEILLANCE REQUIREMENTS (Continued)

2. At least once per 18 months.

Boron Injection Throttle Valves	Safety Injection Throttle Valves			
Valve Number	Valve Number			
1. 2-SI-141 L1	1. 2-SI-121 N			
2. 2-SI-141 L2	2. 2-SI-121 S			
3. 2-SI-141 L3				
4. 2-SI-141 L4				

h.

By performing a flow balance test during shutdown following completion of modifications to the ECCS subsystem that alter the subsystem flow characteristics and verifying the following flow rates:

Boron Injection System Single Pump*	Safety Injection System Single Pump			
Loop 1 Boron Injection Flow	Loop 1 and 4 Cold Leg			
117.5 gpm	Flow greater than or equal to 300 gpm			
Loop 2 Boron Injection Flow	Loop 2 and 3 Cold Leg			
117.5 gpm	Flow greater than or equal to 300 gpm			
Loop 3 Boron Injection Flow	**Combined Loop 1,2,3 and 4 Cold Leg Flow			
117.5 gpm	(single pump) less than or equal to 640 gpm.			
Loop 4 Boron Injection Flow 117.5 gpm	Total SIS (single pump) flow, including miniflow, shall not exceed 675 gpm unless the pump is specifically qualified to a higher flow up to a maximum of 700 gpm.			

The flow rate in each boron injection (BI) line should be adjusted to provide 117.5 gpm (nominal) flow into each loop. Under these conditions there is zero mini-flow and 80 gpm plus or minus 5 gpm simulated RCP seal injection line flow. The actual flow in each BI line may deviate from the nominal so long as:

- b) the total flow to the four branch lines does not exceed 470 gpm.
- c) the minimum flow through the three most conservative (lowest flow) branch lines must not be less than 300 gpm,
- d) the charging pump discharge resistance (2.31\*Pd/Qd^2) must not be less than 4.73E-3 ft/gpm^2 and must not be greater than 9.27E-3 ft/gpm^2, (Pd is the pump discharge pressure at runout; Qd is the total pump flow rate).

a) the difference between the highest and lowest flow is 25 gpm or less.

#### 3/4 BASES 3/4.5 EMERGENCY CORE COOLING SYSTEMS

## 3/4.5.2 and 3/4.5.3 ECCS SUBSYSTEMS (Continued)

With the RCS temperature below 350°F, one OPERABLE ECCS subsystem is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the limited core cooling requirements.

The limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps and safety injection pumps, except the required OPERABLE charging pump, to be inoperable below 152°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that at a minimum, the assumptions used in the safety analysis are met and that subsystem OPERABILITY is maintained. Surveillance requirements for throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analysis, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analysis.

**COOK NUCLEAR PLANT-UNIT 2** 

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<sup>•</sup> Observing these limits while flow balancing the SI pumps in the injection mode will ensure they are not exceeded in the recirculation mode (RHR pumps providing a suction pressure boost) due to the higher system resistance resulting from splitting of the SI trains when in the recirculation lineup.



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# SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION RELATED TO AMENDMENT NO. 229TO FACILITY OPERATING LICENSE NO. DPR-58 AND AMENDMENT NO. 212TO FACILITY OPERATING LICENSE NO. DPR-74 INDIANA MICHIGAN POWER COMPANY

# DONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2

## DOCKET NOS. 50-315 AND 50-316

## **1.0 INTRODUCTION**

By letter dated September 14, 1998, the Indiana Michigan Power Company (the licensee) requested amendments to the Technical Specifications (TS) appended to Facility Operating License Nos. DPR-58 and DPR-74 for the Donald C. Cook Nuclear Plant (D.C. Cook), Units 1 and 2. The proposed amendments would revise TS page 3/4 5-6, "Limiting Conditions for Operation and Surveillance Requirements - Emergency Core Cooling Systems (ECCS)," and its associated Bases to change runout limits for a safety injection (SI) pump to 675 gallons per minute (gpm) unless the pump is specifically tested to a higher flow rate not exceeding 700 gpm for Units 1 and 2. Currently TS 4.5.2.h runout limits for an SI pump are limited to 700 gpm. Westinghouse correspondence received by the licensee in 1991 indicated that the generic runout limit for Pacific 2-inch JTCH pumps is 675 gpm, unless each specific pump is tested to a higher flow. In 1992, the licensee concluded that the intent of the TS was being met by procedural controls for limiting runout flow for untested pumps and that a change to the TS was not necessary. Recently, additional review by the licensee has concluded that the TS change should have been initiated. The proposed amendment is needed to correct a technical discrepancy in the runout flow limit for SI pumps that have not been specifically tested to the limits currently allowed by TS 4.5.2.h.

## 2.0 EVALUATION

The licensee proposes to revise TS page 3/4 5-6 to change SI pump runout limits from 700 gpm to 675 gpm unless the pump is specifically tested to a higher flow rate not to exceed 700 gpm for Units 1 and 2. The proposed TS change would also clarify the basis for setting the SI pump runout limits, describing why the injection lineup is more conservative than the sump recirculation lineup for potential SI pump runout.

TS Amendment No. 84, dated June 24, 1985, and TS Amendment No. 64, dated June 18, 1984, for Units 1 and 2, respectively, changed the allowable SI pump runout limits in TS 4.5.2.h from 650 gpm to 700 gpm. Changes in SI pump miniflow recirculation increased miniflow capacity from 30 gpm to 60 gpm. The licensee anticipated that this increase would make it difficult to achieve all of the SI pump design flow objectives without exceeding the 650 gpm runout limit. Vendor testing by Dresser Industries of a replacement SI pump established a

700 gpm runout limit for the pump. The licensee confirmed that net positive suction head was sufficient to safely achieve 700 gpm and the testing was applicable to the three untested pumps that were already installed.

In 1991, the licensee received correspondence from Westinghouse indicating that the generic runout limits for Pacific 2-inch JTCH pumps is 675 gpm, unless each individual pump is tested to a higher flow. Testing of one SI pump is limited to the tested pump alone due to manufacturing tolerances in sand-cast impellers and material changes in the pump casing that limit the applicability of testing to other pumps. Therefore, the 675 gpm generic runout limit applies to the three untested pumps. Review of SI pump flow balancing data indicated that proper balancing could be achieved without exceeding 675 gpm for the three untested pumps. Procedure 12 EHP 4030 STP.208SI, "U1 and U2 ECCS Flow Balance Safety Injection System," was changed to administratively limit the flow of the three untested pumps to 675 gpm.

The licensee is currently proposing to remedy the technical discrepancy in TS 4.5.2.h by changing the runout limit for a single SI pump to 675 gpm, unless tested to a higher flow rate not to exceed 700 gpm. The licensee also proposes to change TS page B 3/4 5-2 for Units 1 and 2 to clarify the basis for setting the runout flow limits. The TS change explains why the injection lineup is the minimum resistance and, hence, more conservative configuration to ensure that pump runout limits are not exceeded in the recirculation mode when the residual heat removal pumps are providing a suction pressure boost. The injection lineup is more conservative due to the splitting of the SI trains during circulation, resulting in a higher system resistance than with a single SI pump injecting to all four reactor coolant loops. Therefore, the injection mode should be used in maintenance of proper flow resistance and pressure drop in the piping system to each injection point to prevent pump flow from exceeding runout conditions in the recirculation lineup.

Flow balancing performed at DC Cook supports the ability of the SI pumps to deliver the minimum TS flow of 300 gpm to each pair of cold leg injection points without exceeding the 675 gpm pump runout limits in the three untested pumps. Thus, the ECCS performance objectives of 10 CFR 50.46 are not affected by the TS change. Flow balancing has also demonstrated that an adequate margin to the proposed runout limits will be maintained. Furthermore, the TS change will help ensure that SI pumps do not operate at runout conditions, which can lead to mechanical stress and damage to the SI pumps.

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Since the proposed runout limit is more conservative than the current limit and SI pump flow balancing data indicates that SI pumps will be able to deliver minimum flow to the cold leg injection points without exceeding 675 gpm in the SI pump, the proposed change to the TS will provide an equivalent level of protection as the current TS.

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Based on the above evaluation, the NRC staff finds that the proposed TS changes are acceptable.

#### 3.0 STATE CONSULTATION

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

## 4.0 ENVIRONMENTAL CONSIDERATION

These amendments change the requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or change the surveillance requirements. The staff has determined that the amendments involve 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 that the amendments involve no significant hazards consideration and there has been no public comment on such finding (64 FR 47533). Accordingly, the amendments meet 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 amendments.

#### 5.0 CONCLUSION

The staff 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) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: C. Sochor

Date: October 21, 1999

Mr. Robert P. Powers, Senior Vice President Indiana Michigan Power Company Nuclear Generation Group 500 Circle Drive Buchanan, MI 49107

#### DONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2 - ISSUANCE OF SUBJECT: AMENDMENTS RE: SAFETY INJECTION PUMP RUNOUT LIMITS (TAC NOS. MA3715 AND MA3716)

Dear Mr. Powers:

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A copy of our related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

Original Signed By

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John F. Stang, Sr. Project Manager, Section 1 Project Directorate III **Division of Licensing Project Management** Office of Nuclear Reactor Regulation

#### Docket Nos. 50-315 and 50-316

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DOCUMEN	it name: G:	\PD:	31\DCCOOK	<u>12\A</u>	MDma3715	N	<b>*</b> See pr	revious concur	rence
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NAME	JStang <sup>M</sup>		Barnhill	(th)	R Bachma	nn	Elmbro	CCraid	
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