

July 29, 1986

Docket Nos. 50-315  
and 50-316

Mr. John Dolan, Vice President  
Indiana and Michigan Electric Company  
c/o American Electric Power Service Corporation  
1 Riverside Plaza  
Columbus, Ohio 43216

Dear Mr. Dolan:

The Commission has issued the enclosed Amendment No. 98 to Facility Operating License No. DPR-58 and Amendment No. 85 to Facility Operating License No. DPR-74 for the Donald C. Cook Nuclear Plant, Unit Nos. 1 and 2. The amendments consist of changes to the Technical Specifications in response to your application transmitted by letter dated May 10, 1983 as supplemented by letter dated June , 1986.

These amendments revise the Technical Specifications by removing duplicative ISI/IST requirements, removing duplicative Operable requirements, and revising the Unit 2 charging pump discharge pressure during shutdown.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next bi-weekly Federal Register notice.

Sincerely,

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D. L. Wigginton, Project Manager  
PWR Project Directorate #4  
Division of PWR Licensing-A, NRR

Enclosures:

1. Amendment No. 98 to DPR-58
2. Amendment No. 85 to DPR-74
3. Safety Evaluation

cc: w/enclosures  
See next page

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PDR ADOCK 05000315  
P PDR

\* SEE PREVIOUS CONCURRENCE

PWR#4:DPWR-A  
DWigginton:mac  
06/ /86

PWR#4:DPWR-A  
\*MDuncan  
06/24/86

OELD  
Sa Twa  
07/21/86

*[Signature]*  
EB/DPWR-A  
RBallard  
08/16/86

US  
7/16/86

*[Signature]*  
PWR#4:DPWR-A  
BJYoungblood  
07/29/86

Mr. John Dolan  
Indiana and Michigan Electric Company

Donald C. Cook Nuclear Plant

cc:

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Nuclear Operations  
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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

INDIANA AND MICHIGAN ELECTRIC COMPANY

DOCKET NO. 50-315

DONALD C. COOK NUCLEAR PLANT UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 98  
License No. DPR-58

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Indiana and Michigan Electric Company (the licensee) dated May 10, 1983 as supplemented by letter dated June 20, 1986, 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:

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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 98, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

- 3. The change in Technical Specifications is to become effective within 90 days of issuance of the amendment. In the period between issuance of the amendment and the effective date of the new Technical Specifications, the licensee shall adhere to the Technical Specifications for the systems, components, or operation existing at the time. The period of time during changeover of systems, components or operation shall be minimized or compensated for by suitable temporary alternative.
- 4. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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B. J. Youngblood, Director  
PWR Project Directorate #4  
Division of PWR Licensing-A, NRR

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: July 29, 1986

*DW*  
PWR#4:DPWR-A  
DWigginton:mac  
06/25/86

PWR#4:DPWR-A  
MDuncan  
06/24/86

OELD  
*Satur*  
07/21/86

*B. J. Youngblood*  
PWR#4:DPWR-A  
B. J. Youngblood  
06/16/86

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 98 FACILITY OPERATING LICENSE NO. DPR-58

AMENDMENT NO. 85 FACILITY OPERATING LICENSE NO. DPR-74

DOCKET NOS. 50-315 AND 50-316

Revise Appendix A as follows:

Remove Pages

Insert Pages

Unit 1

Unit 1

3/4 0-2  
3/4 1-11  
3/4 1-12  
3/4 4-7  
3/4 4-8  
3/4 4-9  
3/4 4-10  
3/4 4-11  
3/4 4-12  
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3/4 4-34  
3/4 4-35  
3/4 4-36  
3/4 4-37  
3/4 4-38  
3/4 4-39  
3/4 4-40  
3/4 4-41 thru 48  
3/4 5-4  
3/4 5-5  
3/4 5-6  
3/4 6-10  
3/4 6-11  
3/4 7-15  
3/4 7-16  
3/4 7-17  
3/4 7-18  
B 3/4 4-12  
3/4 6-12\*  
3/4 5-6a

3/4 0-2  
3/4 1-11  
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3/4 7-16  
3/4 7-17  
3/4 7-18  
B 3/4 4-12  
3/4 6-12\*

Unit 2

B3/4 0-5

Unit 2

3/4 1-11

3/4 1-11

\*No change. Included for convenience only.

### 3/4.0 APPLICABILITY

#### SURVEILLANCE REQUIREMENTS

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4.0.1 Surveillance requirements shall be applicable during the OPERATIONAL MODES or other conditions specified for individual Limiting Conditions for Operation unless otherwise stated in an individual Surveillance Requirement.

4.0.2 Each Surveillance Requirement shall be performed within the specified time interval with:

- a. A maximum allowable extension not to exceed 25% of the surveillance interval, and
- b. A total maximum combined time for any 3 consecutive surveillance intervals not to exceed 3.25 times the specified surveillance interval.

4.0.3 Performance of a Surveillance Requirement within the specified time interval shall constitute compliance with OPERABILITY requirements for a Limiting Condition for Operation and associated ACTION statements unless otherwise required by the specification. Surveillance requirements do not have to be performed on inoperable equipment.

4.0.4 Entry into an OPERATIONAL MODE or other specified applicability condition shall not be made unless the Surveillance Requirement(s) associated with the Limiting Condition for Operation have been performed within the stated surveillance interval or as otherwise specified.

4.0.5 Surveillance Requirements for inservice inspection and testing of ASME Code Class 1, 2, and 3 components shall be applicable as follows:

- a. Inservice inspection of ASME Code Class 1, 2, and 3 components and inservice testing of ASME Code Class 1, 2 and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g)(6)(1).

## REACTIVITY CONTROL SYSTEMS

### CHARGING PUMP - SHUTDOWN

#### LIMITING CONDITION FOR OPERATION

3.1.2.3 One charging pump in the boron injection flow path required by Specification 3.1.2.1 shall be OPERABLE and capable of being powered from an OPERABLE emergency bus.

APPLICABILITY: MOOES 5 and 6.

#### ACTION:

- a. With no charging pump OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.
- b. With more than one charging pump OPERABLE or with a safety injection pump(s) OPERABLE when the temperature of any RCS cold leg is less than or equal to 170°F, unless the reactor vessel head is removed, remove the additional charging pump(s) and the safety injection pump(s) motor circuit breakers from the electrical power circuit within one hour.
- c. The provisions of Specification 3.0.3 are not applicable.

#### SURVEILLANCE REQUIREMENTS

4.1.2.3.1 The above required charging pump shall be demonstrated OPERABLE by verifying, that on recirculation flow, the pump develops a discharge pressure of  $\geq 2390$  psig when tested pursuant to Specification 4.0.5 at least once per 31 days.

4.1.2.3.2 All charging pumps and safety injection pumps, excluding the above required OPERABLE charging pump, shall be demonstrated inoperable by verifying that the motor circuit breakers have been removed from their electrical power supply circuits at least once per 12 hours, except when:

- a. The reactor vessel head is removed, or
- b. The temperature of all RCS cold legs is greater than 170°F

REACTIVITY CONTROL SYSTEMS

CHARGING PUMPS - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.4 At least two charging pumps shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one charging pump OPERABLE, restore at least two charging pumps to OPERABLE status within 72 hours or be in HOT STANDBY within the next 6 hours; restore at least two charging pumps to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.1.2.4 At least two charging pumps shall be demonstrated OPERABLE by verifying, that on recirculation flow, each pump develops a discharge pressure of  $\geq 2405$  psig when tested pursuant to Specification 4.0.5 at least once per 31 days on a STAGGERED TEST BASIS.

## REACTOR COOLANT SYSTEM

### STEAM GENERATORS

#### LIMITING CONDITION FOR OPERATION

3.4.5 Each steam generator shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

#### ACTION:

With one or more steam generators inoperable, restore the inoperable generator(s) to OPERABLE status prior to increasing  $T_{avg}$  above 200°F.

#### SURVEILLANCE REQUIREMENTS

4.4.5.0 Each steam generator shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirement of Specification 4.0.5.

4.4.5.1 Steam Generator Sample Selection and Inspection - Each steam generator shall be determined OPERABLE during shutdown by selecting and inspecting at least the minimum number of steam generators specified in Table 4.4-1.

4.4.5.2 Steam Generator Tube Sample Selection and Inspection - The steam generator tube minimum sample size, inspection result classification, and the corresponding action required shall be as specified in Table 4.4-2. The inservice inspection of steam generator tubes shall be performed at the frequencies specified in Specification 4.4.5.3 and the inspected tubes shall be verified acceptable per the acceptance criteria of Specification 4.4.5.4. The tubes selected for each inservice inspection shall include at least 3% of the total number of tubes in all steam generators; the tubes selected for these inspections shall be selected on a random basis except:

- a. Where experience in similar plants with similar water chemistry indicates critical areas to be inspected, then at least 50% of the tubes inspected shall be from these critical areas.
- b. The first sample of tubes selected for each inservice inspection (subsequent to the preservice inspection) of each steam generator shall include:

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

1. All nonplugged tubes that previously had detectable wall penetrations ( $\geq 20\%$ ).
  2. Tubes in those areas where experience has indicated potential problems.
  3. A tube inspection (pursuant to Specification 4.4.5.4.a.8) shall be performed on each selected tube. If any selected tube does not permit the passage of the eddy current probe for a tube inspection, this shall be recorded and an adjacent tube shall be selected and subjected to a tube inspection.
- c. The tubes selected as the second and third samples (if required by Table 4.4-2) during each inservice inspection may be subjected to a partial tube inspection provided:
1. The tubes selected for these samples include the tubes from those areas of the tube sheet array where tubes with imperfections were previously found.
  2. The inspections include those portions of the tubes where imperfections were previously found.

The results of each sample inspection shall be classified into one of the following three categories.

<u>Category</u>	<u>Inspection Results</u>
C-1	Less than 5% of the total tubes inspected are degraded tubes and none of the inspected tubes are defective.
C-2	One or more tubes, but not more than 1% of the total tubes inspected are defective, or between 5% and 10% of the total tubes inspected are degraded tubes.
C-3.	More than 10% of the total tubes inspected are degraded tubes or more than 1% of the inspected tubes are defective.

Note: In all inspections, previously degraded tubes must exhibit significant ( $\geq 10\%$ ) further wall penetrations to be included in the above percentage calculations.

## REACTOR COOLANT SYSTEM

### SURVEILLANCE REQUIREMENTS (Continued)

4.4.5.3 Inspection Frequencies - The above required inservice inspections of steam generator tubes shall be performed at the following frequencies:

- a. The first inservice inspection shall be performed after 5 Effective Full Power Months but within 24 calendar months of initial criticality. Subsequent inservice inspections shall be performed at intervals of not less than 12 nor more than 24 calendar months after the previous inspection. If two consecutive inspections following service under AVT conditions, not including the preservice inspection, result in all inspection results falling into the C-1 category or if two consecutive inspections demonstrate that previously observed degradation has not continued and no additional degradation has occurred, the inspection interval may be extended to a maximum of once per 40 months.
- b. If the results of the inservice inspection of a steam generator conducted in accordance with Table 4.4-2 at 40 month intervals fall in Category C-3, the inspection frequency shall be increased to at least once per 20 months. The increase in inspection frequency shall apply until the subsequent inspections satisfy the criteria of Specification 4.4.5.3.a; the interval may then be extended to a maximum of once per 40 months.
- c. Additional, unscheduled inservice inspections shall be performed on each steam generator in accordance with the first sample inspection specified in Table 4.4-2 during the shutdown subsequent to any of the following conditions:
  1. Primary-to-secondary tubes leaks (not including leaks originating from tube-to-tube sheet welds) in excess of the limits of Specification 3.4.6.2.
  2. A seismic occurrence greater than the Operating Basis Earthquake.
  3. A loss-of-coolant accident requiring actuation of the engineered safeguards.
  4. A main steam line or feedwater line break.

## REACTOR COOLANT SYSTEM

### SURVEILLANCE REQUIREMENTS (Continued)

#### 4.4.5.4 Acceptance Criteria

a. As used in this Specification:

1. Imperfection means an exception to the dimensions, finish or contour of a tube from that required by fabrication drawings or specifications. Eddy-current testing indications below 20% of the nominal tube wall thickness, if detectable, may be considered as imperfections.
2. Degradation means a service-induced cracking, wastage, wear or general corrosion occurring on either inside or outside of a tube.
3. Degraded Tube means a tube containing imperfections  $>20\%$  of the nominal wall thickness caused by degradation.
4. % Degradation means the percentage of the tube wall thickness affected or removed by degradation.
5. Defect means an imperfection of such severity that it exceeds the plugging limit. A tube containing a defect is defective.
6. Plugging Limit means the imperfection depth at or beyond which the tube shall be removed from service because it may become unserviceable prior to the next inspection and is equal to 40% of the nominal tube wall thickness.
7. Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break as specified in 4.4.5.3.c, above.
8. Tube Inspection means an inspection of the steam generator tube from the point of entry (hot leg side) completely around the U-bend to the top support of the cold leg.

## REACTOR COOLANT SYSTEM

### SURVEILLANCE REQUIREMENTS (Continued)

- b. The steam generator shall be determined OPERABLE after completing the corresponding actions (plug all tubes exceeding the plugging limit and all tubes containing through-wall cracks) required by Table 4.4-2.

#### 4.4.5.5 Reports

- a. Following each inservice inspection of steam generator tubes, the number of tubes plugged in each steam generator shall be reported to the Commission within 15 days.
- b. The complete results of the steam generator tube inservice inspection shall be included in the Annual Operating Report for the period in which this inspection was completed. This report shall include:
  - 1. Number and extent of tubes inspected.
  - 2. Location and percent of wall-thickness penetration for each indication of an imperfection.
  - 3. Identification of tubes plugged.
- c. Results of steam generator tube inspections which fall into Category C-3 and require prompt notification of the Commission shall be reported pursuant to Specification 6.9.1 prior to resumption of plant operation. The written followup of this report shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence.

TABLE 4.4-1  
MINIMUM NUMBER OF STEAM GENERATORS TO BE  
INSPECTED DURING INSERVICE INSPECTION

Preservice Inspection	Yes
No. of Steam Generators per Unit	Four
First Inservice Inspection	Two
Second & Subsequent Inservice Inspections	One <sup>2</sup>

Table Notation:

1. The inservice inspection may be limited to one steam generator on a rotating schedule encompassing  $3 N \%$  of the tubes (where N is the number of steam generators in the plant) if the results of the first or previous inspections indicate that all steam generators are performing in a like manner. Note that under some circumstances, the operating conditions in one or more steam generators may be found to be more severe than those in other steam generators. Under such circumstances the sample sequence shall be modified to inspect the most severe conditions.
2. Each of the other two steam generators not inspected during the first inservice inspection shall be inspected during the second and third inspections. The fourth and subsequent inspections shall follow the instructions described in 1 above.

## REACTOR COOLANT SYSTEM

### 3/4.4.10. STRUCTURAL INTEGRITY

#### ASME CODE CLASS 1, 2 and 3 COMPONENTS

#### LIMITING CONDITION FOR OPERATION

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3.4.10.1 The structural integrity of ASME Code Class 1, 2 and 3 components shall be maintained in accordance with Specification 4.4.10.1.

APPLICABILITY: ALL MODES

#### ACTION:

- a. With the structural integrity of any ASME Code Class 1 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) prior to increasing the Reactor Coolant System temperature more than 50°F above the minimum temperature required by NDT considerations.
- b. With the structural integrity of any ASME Code Class 2 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) prior to increasing the Reactor Coolant System temperature above 200°F.
- c. With the structural integrity of any ASME Code Class 3 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) from service.
- d. The provisions of Specification 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

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4.4.10.1 In addition to the requirements of Specification 4.0.5, each reactor coolant pump flywheel shall be inspected per the recommendations of Regulatory Position C.4.b of Regulatory Guide 1.14, Revision 1, August 1975.

REACTOR COOLANT SYSTEM

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## REACTOR COOLANT SYSTEM

### RELIEF VALVES - OPERATING

#### LIMITING CONDITION FOR OPERATION

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3.4.11 Three power operated relief valves (PORVs) and their associated block valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTION:

- a. With one or more PORV(s) inoperable, within 1 hour either restore the PORV(s) to OPERABLE status or close the associated block valve(s) and remove power from the block valve(s); otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one or more block valve(s) inoperable, within 1 hour either (1) restore the block valve(s) to OPERABLE status, or (2) close the block valve(s) and remove power from the block valve(s), or (3) close the associated PORV(s) and remove power from the associated solenoid valve(s); otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.\*
- c. The provisions of Specification 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

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4.4.11.1 Each of the three PORVs shall be demonstrated OPERABLE:

- a. At least once per 31 days by performance of a CHANNEL FUNCTIONAL TEST, excluding valve operation, and
- b. At least once per 18 months by performance of a CHANNEL CALIBRATION.

\*When ACTION 3.4.11.b.(3) is applied, no report pursuant to Specification 6.9.1.9 is required for the PORV.

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

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4.4.11.2 Each of the three block valves shall be demonstrated OPERABLE at least once per 92 days by operating the valve through one complete cycle of full travel. The block valve(s) do not have to be tested nor is a report required pursuant to Specification 6.9.1.9 when ACTION 3.4.11.a is applied.

4.4.11.3 The emergency power supply for the PORVs and block valves shall be demonstrated OPERABLE at least once per 18 months by operating the valves through a complete cycle of full travel while the emergency buses are energized by the onsite diesel generators and onsite plant batteries. This testing can be performed in conjunction with the requirements of Specifications 4.8.1.1.2.b and 4.8.2.3.2.c.

REACTOR COOLANT SYSTEM

REACTOR COOLANT VENT SYSTEM

REACTOR VESSEL HEAD VENTS

LIMITING CONDITIONS FOR OPERATION

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3.4.12.1 At least one of the Reactor Vessel head vent paths, consisting of two remotely operated valves in series, powered from Class 1E DC busses, shall be OPERABLE and closed.

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

ACTION:

- a. With both of the Reactor Vessel head vent paths inoperable, and at least one of the Pressurizer steam space vent paths OPERABLE (see Specification 3.4.12.2), operation in MODES 1, 2, 3 or 4 may continue, provided the inoperable vent paths are maintained closed with power removed from the valve actuators of all the remotely operated valves in all of the inoperable vent paths; restore at least one of the Reactor Vessel head vent paths within 30 days or be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With both of the Reactor Vessel head vent paths and both of the Pressurizer steam space vent paths inoperable; maintain the inoperable vent paths closed with power removed from the valve actuators of all of the remotely operated valves in all of the inoperable vent paths; restore one of the inoperable vent paths from either the Reactor Vessel head vent or the Pressurizer steam space within 72 hours or be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. The provision of Specification 3.0.4 are not applicable.

REACTOR COOLANT SYSTEM

REACTOR COOLANT VENT SYSTEM

REACTOR VESSEL HEAD VENTS

SURVEILLANCE REQUIREMENTS

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4.8.12.1 Both Reactor Vessel head vent paths shall be demonstrated OPERABLE<sup>#</sup> at least once per 18 months by:

1. Verifying the common manual isolation valve in the Reactor vessel head vent is sealed in the open position.
2. Cycling each of the remotely operated valves in each path through at least one complete cycle of full travel from the Control Room while in Modes 5 or 6.
3. Verifying flow through both of the Reactor Vessel head vent paths during venting operation, while in Modes 5 or 6.

# Surveillance requirements to demonstrate the operability of each Reactor Vessel head vent path will be performed the next time the unit enters MODES 5 or 6 following the issuance of this Technical Specification, and after the appropriate Plant procedures have been written.

REACTOR COOLANT SYSTEM

REACTOR COOLANT VENT SYSTEM

PRESSURIZER STEAM SPACE VENTS

LIMITING CONDITION FOR OPERATION

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3.4.12.2 At least one of the Pressurizer steam space vent paths, each consisting of two remotely operated valves in series, powered from Class 1E DC busses, shall be OPERABLE and closed.

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

ACTION:

- a. With both of the Pressurizer steam space vent paths inoperable, and at least one of the Reactor Vessel head vent paths OPERABLE (see Specification 3.4.12.1), operation in MODES 1, 2, 3 or 4 may continue, provided the inoperable vent paths are maintained closed with the power removed from the valve actuators of all the remotely operated valves in all of the inoperable vent paths; restore at least one of the Pressurizer steam space vent paths within 30 days or be in HOT STANDBY within 6 hours and in COLD SHUTDOWN in the following 30 hours.
- b. With both of the Pressurizer steam space vent paths and both of the Reactor Vessel head vent paths inoperable; maintain the inoperable vent paths closed with power removed from the valve actuators of all of the remotely operated valves in all of the inoperable vent paths; restore one of the inoperable vent paths from either the Reactor Vessel head vent or the Pressurizer steam space within 72 hours or be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. The provisions of Specification 3.0.4 are not applicable.

REACTOR COOLANT SYSTEM

REACTOR COOLANT VENT SYSTEM

PRESSURIZER STEAM SPACE VENTS

SURVEILLANCE REQUIREMENTS

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4.4.12.2 Both Pressurizer steam space vent paths shall be demonstrated OPERABLE<sup>2</sup> at least once per 18 months by:

1. Verifying the common manual isolation valve in the Pressurizer steam space vent is sealed in the open position.
2. Cycling each of the remotely operated valves in each path through at least one complete cycle of full travel from the Control Room while in Modes 5 or 6.
3. Verifying flow through both of the Pressurizer steam space vent paths during venting operation, while in Modes 5 or 6.

# Surveillance requirements to demonstrate the operability of each Pressurizer steam space vent path will be performed the next time the unit enters MODES 5 or 6 following the issuance of this Technical Specification, and after the appropriate Plant procedures have been written.

## EMERGENCY CORE COOLING SYSTEMS

### SURVEILLANCE REQUIREMENTS

4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE:

- a. At least once per 12 hours by verifying that the following valves are in the indicated positions with the control power locked out.

<u>Valve Number</u>	<u>Valve Function</u>	<u>Valve Position</u>
a. IMO-390	a. RWST to RHR	a. Open
b. IMO-315	b. Low head SI to Hot Leg	b. Closed
c. IMO-325	c. Low head SI to Hot Leg	c. Closed
d. IMO-262*	d. Mini flow line	d. Open
e. IMO-263*	e. Mini flow line	e. Open
f. IMO-261*	f. SI Suction	f. Open
g. ICM-305*	g. Sump line	g. Closed
h. ICM-306*	h. Sump line	h. Closed

- b. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

- c. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the containment sump and cause restriction of the pump suction during LOCA conditions. This visual inspection shall be performed:

1. For all accessible areas of the containment prior to establishing CONTAINMENT INTEGRITY, and
2. Of the areas affected within containment at the completion of each containment entry when CONTAINMENT INTEGRITY is established.

\*These valves must change position during the switchover from injection to recirculation flow following LOCA.

## EMERGENCY CORE COOLING SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

- d. At least once per 18 months by:
1. Verifying automatic isolation and interlock action of the RHR system from the Reactor Coolant System when the Reactor Coolant System pressure is above 600 psig.
  2. A visual inspection of the containment sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or abnormal corrosion.
- e. At least once per 18 months, during shutdown, by:
1. Verifying that each automatic valve in the flow path actuates to its correct position on a Safety Injection test signal.
  2. Verifying that each of the following pumps start automatically upon receipt of a safety injection test signal:
    - a) Centrifugal charging pump
    - b) Safety injection pump
    - c) Residual heat removal pump
- f. By verifying that each of the following pumps develops the indicated discharge pressure on recirculation flow when tested pursuant to Specification 4.0.5 at least once per 31 days on a STAGGERED TEST BASIS.
1. Centrifugal charging pump  $\geq$  2405 psig
  2. Safety Injection pump  $\geq$  1445 psig
  3. Residual heat removal pump  $\geq$  195 psig
- g. By verifying the correct position of each mechanical stop for the following Emergency Core Cooling System throttle valves:
1. Within 4 hours following completion of each valve stroking operation or maintenance on the valve when the ECCS sub-systems are required to be OPERABLE.

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EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. At least once per 18 months.

<u>Boron Injection Throttle Valves</u>	<u>Safety Injection Throttle Valves</u>
Valve Number	Valve Number
1.   -SI-141 L1	1.   -SI-121 N
2.   -SI-141 L2	2.   -SI-121 S
3.   -SI-141 L3	
4.   -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:

<u>Boron Injection System Single Pump*</u>	<u>Safety Injection System Single Pump**</u>
Loop 1 Boron Injection Flow 117.5 gpm	Loop 1 and 4 Cold Leg Flow $\geq$ 300 gpm
Loop 2 Boron Injection Flow 117.5 gpm	Loop 2 and 3 Cold Leg Flow $\geq$ 300 gpm
Loop 3 Boron Injection Flow 117.5 gpm	
Loop 4 Boron Injection Flow 117.5 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 simulated RCP seal injection line flow. The actual flow in each BI line may deviate from the nominal so long as the difference between the highest and lowest flow is 10 gpm or less and the total flow to the four branch lines does not exceed 470 gpm. Minimum flow (total flow) required is 345.8 gpm to the three most conservative (lowest flow) branch lines.

\*\*Combined Loop 1, 2, 3, and 4 Cold Leg Flow (single pump) less than or equal to 640 gpm. Total SIS (single pump) flow, including miniflow, shall not exceed 700 gpm.

## CONTAINMENT SYSTEMS

### 3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

#### CONTAINMENT SPRAY SYSTEM

#### LIMITING CONDITION FOR OPERATION

3.6.2.1 Two independent containment spray systems shall be OPERABLE with each spray system capable of taking suction from the RWST and transferring suction to the containment sump.

APPLICABILITY: MODES 1, 2, 3 and 4.

#### ACTION:

With one containment spray system inoperable, restore the inoperable spray system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the inoperable spray system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

4.6.2.1 Each containment spray system shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. By verifying, that on recirculation flow, each pump develops a discharge pressure of  $\geq 255$  psig at a flow of  $\geq 700$  gpm, when tested pursuant to Specification 4.0.5 at least once per 31 days on a STAGGERED TEST BASIS.
- c. At least once per 18 months during shutdown, by:
  1. Verifying that each automatic valve in the flow path actuates to its correct position on a Containment Pressure--High-High test signal.
  2. Verifying that each spray pump starts automatically on a Containment Pressure--High-High test signal.
- d. At least once per 5 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

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## CONTAINMENT SYSTEMS

### SPRAY ADDITIVE SYSTEM

#### LIMITING CONDITION FOR OPERATION

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3.6.2.2 The spray additive system shall be OPERABLE with:

- a. A spray additive tank containing at least 4000 gallons of not less than 30 percent by weight NaOH solution, and
- b. Two spray additive eductors each capable of adding NaOH solution from the chemical additive tank to a containment spray system pump flow.

APPLICABILITY: MODES 1, 2, 3 and 4.

#### ACTION:

With the spray additive system inoperable, restore the system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the spray additive system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

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4.6.2.2 The spray additive system shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
  1. Cycling each testable power operated or automatic valve in the flow path through at least one complete cycle of full travel.
  2. Verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. At least once per 6 months by:
  1. Verifying the solution level in the tank, and
  2. Verifying the concentration of the NaOH solution by chemical analysis.

## PLANT SYSTEMS

### 3/4.7.3 COMPONENT COOLING WATER SYSTEM

#### LIMITING CONDITION FOR OPERATION

3.7.3.1 At least two independent component cooling water loops shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

#### ACTION:

With only one component cooling water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

4.7.3.1 At least two component cooling water loops shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. At least once per 18 months during shutdown, by verifying that each automatic valve servicing safety related equipment actuates to its correct position on a Safety Injection test signal.
- c. At least once per 31 days on a STAGGERED TEST BASIS, by verifying that each pump develops at least 93% of the discharge pressure for the applicable flow rate as determined from the manufacturer's Pump Performance Curve.

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## PLANT SYSTEMS

### 3/4.7.4 ESSENTIAL SERVICE WATER SYSTEM

#### LIMITING CONDITION FOR OPERATION

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3.7.4.1 At least two independent essential service water loops shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

#### ACTION:

With only one service water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

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4.7.4.1 At least two essential service water loops shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. At least once per 18 months during shutdown, by verifying that each automatic valve servicing safety related equipment actuates to its correct position on a Safety Injection test signal.
- c. At least once per 31 days on a STAGGERED TEST BASIS, by verifying that each pump develops at least 93% of the discharge pressure for the applicable flow rate as determined from the manufacturer's Pump Performance Curve.

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## APPLICABILITY

### BASES

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4.0.5 This specification ensures that inservice inspection of ASME Code Class 1, 2 and 3 components and inservice testing of ASME Code Class 1, 2 and 3 pumps and valves will be performed in accordance with a periodically updated version of Section XI of the ASME Boiler and Pressure Vessel Code and Addenda as required by 10 CFR 50.55a. Relief from any of the above requirements has been provided in writing by the Commission and is not a part of these technical specifications.

This specification includes a clarification of the frequencies for performing the inservice inspection and testing activities required by Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda. This clarification is provided to ensure consistency in surveillance intervals throughout these technical specifications and to remove any ambiguities relative to the frequencies for performing and the required inservice inspection and testing activities.

Under the terms of this specification, the more restrictive requirements of the Technical Specifications take precedence over the ASME Boiler and Pressure Vessel Code and applicable Addenda. For example, the requirements of Specification 4.0.4 to perform surveillance activities prior to entry into an OPERATIONAL MODE or other specified applicability condition takes precedence over the ASME Boiler and Pressure Vessel Code provision which allows pumps to be tested up to one week after return to normal operation. And for example, the Technical Specification definition of OPERABLE does not grant a grace period before a device that is not capable of performing its specified function is declared inoperable and takes precedence over the ASME Boiler and Pressure Vessel Code provision which allows a valve to be incapable of performing its specified function for up to 24 hours before being declared inoperable.

REACTOR COOLANT SYSTEM

BASES

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3/4.4.10 STRUCTURAL INTEGRITY

The inspection and testing programs for ASME Code Class 1, 2 and 3 components ensure that the structural integrity of these components will be maintained at an acceptable level throughout the life of the plant. To the extent applicable, the inspection program for these components is in compliance with Section XI of the ASME Boiler and Pressure Vessel Code.

## REACTIVITY CONTROL SYSTEM\*

### CHARGING PUMP - SHUTDOWN

#### LIMITING CONDITION FOR OPERATION

3.1.2.3 One charging pump in the boron injection flow path required by Specification 3.1.2.1 shall be OPERABLE and capable of being powered from an OPERABLE emergency bus.

APPLICABILITY: MODES 5 and 6.

#### ACTION:

- a. With no charging pump OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.
- b. With more than one charging pump OPERABLE or with a safety injection pump(s) OPERABLE when the temperature of any RCS cold leg is less than or equal to 152° F, unless the reactor vessel head is removed, remove the additional charging pump(s) and the safety injection pump(s) motor circuit breakers from the electrical power circuit within one hour.
- c. The provisions of Specification 3.0.3 are not applicable.

#### SURVEILLANCE REQUIREMENTS

4.1.2.3.1 The above required charging pump shall be demonstrated OPERABLE by verifying, that on recirculation flow, the pump develops a discharge pressure of  $\geq 2390$  psig when tested pursuant to Specification 4.0.5.

4.1.2.3.2 All charging pumps and safety injection pumps, excluding the above required OPERABLE charging pump, shall be demonstrated inoperable by verifying that the motor circuit breakers have been removed from their electrical power supply circuits at least once per 12 hours, except when:

- a. The reactor vessel head is removed, or
- b. The temperature of all RCS cold legs is greater than 152° F.

\* For purposes of this specification, addition of water from the RWST does not constitute a positive reactivity addition provided the boron concentration in the the RWST is greater than the minimum required by Specification 3.1.2.7.b.2.



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

INDIANA AND MICHIGAN ELECTRIC COMPANY

DOCKET NO. 50-316

DONALD C. COOK NUCLEAR PLANT UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.85  
License No. DPR-74

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Indiana and Michigan Electric Company (the licensee) dated May 10, 1983 as supplemented by letter dated June 20, 1986, 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) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 85, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

- 3. The change in Technical Specifications is to become effective within 90 days of issuance of the amendment. In the period between issuance of the amendment and the effective date of the new Technical Specifications, the licensee shall adhere to the Technical Specifications for the systems, components, or operation existing at the time. The period of time during changeover of systems, components or operation shall be minimized or compensated for by suitable temporary alternative.
- 4. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

151

B. J. Youngblood, Director  
PWR Project Directorate #4  
Division of PWR Licensing-A, NRR

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: July 29, 1986

*DW*  
PWR#4:DPWR-A  
DWigginton:mac  
06/25/86

PWR#4:DPWR-A  
*MDuncan*  
MDuncan  
06/24/86

OELD  
*Salvatore*  
07/21/86

*BJYoungblood*  
PWR#4:DPWR-A  
BJYoungblood  
07/16/86



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 98 TO FACILITY OPERATING LICENSE NO. DPR-58  
AND AMENDMENT NO. 85 TO FACILITY OPERATING LICENSE NO. DPR-74  
INDIANA AND MICHIGAN ELECTRIC COMPANY  
DONALD C. COOK NUCLEAR PLANT, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-315 AND 50-316

INTRODUCTION

By letter dated May 10, 1983, the Indiana and Michigan Electric Company (the licensee) submitted a proposed license amendment for the Donald C. Cook Nuclear Plant, Unit Nos. 1 and 2 to revise the Technical Specifications in Facility Operating Licenses DPR-58 and DPR-74. The revisions were to remove the inservice inspection and testing requirements which were duplicative to requirements in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda. The Section XI is required by 10 CFR 50, Section 50.55a(g) and Section 4.0.5 of the Technical Specifications. By letter dated June 20, 1986, the licensee withdrew the portion of their May 10, 1983 request pertaining to extending the surveillance frequency for certain pumps from 31 to 90 days on the basis that the safety analysis which was determined necessary to support the extended frequency could not be performed on schedule. For the pump testing frequency change, the licensee will resubmit a new and completely separate request when the analysis is complete.

The licensee's May 10, 1983 proposed license amendment also removes requirements which are duplicative to Operable requirements as embodied in the definition section and corrects an error in the discharge pressure of the charging pump during shutdown on Unit 2 as was previously corrected for Unit 1.

EVALUATION

Inservice Inspection and Testing

By letter dated April 13, 1983, the Commission added Section 4.0.5 to the Unit 1 Technical Specifications and corrected a portion of 4.0.5 for Unit 2. This Section establishes the surveillance requirements for ASME Class 1, 2, and 3 components in accordance with Section XI of the ASME Boiler and Pressure Vessel Code except where specific written relief has been granted by the Commission. The April 13, 1983 Amendment 71 for Unit 1 recognized that the Technical Specifications would require further revision and a footnote to Section 4.0.5 was added accordingly. The licensee now proposes to remove the footnote and incorporate the following changes: (1) Table 4.4-6 contained the Inservice Inspection Program for Unit 1 until a revised and updated program was approved by letter dated April 15, 1983. The Safety Evaluation enclosed with the letter contains the details of the relief granted. That letter

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provides the basis for replacing Table 4.4-6 and this table and references to it should be deleted from the Technical Specifications. (2) For the emergency cooling system (3.5.2), the containment depressurization and cooling system (3.6.2.1), the component cooling water system (3.7.3.1), and the essential service water system (3.7.4.1), the licensee proposes to remove the surveillance requirement to periodically test the valves through one complete cycle of full travel once every 31 days. The Section XI requirements for these valves is once every 90 days and based on past test results, the Commission has long advocated the frequency and test requirements of the Section XI code. Testing valves more frequently has not improved safety and does create more opportunity for the tested valves to be inadvertently left in the wrong position. This change to the Technical Specifications should be made.

(3) In our review of the changes for the emergency core cooling system, we identified one additional change which should be made. In Section 4.5.2.C.2., the statement should be revised to indicate "evidence of structural distress or abnormal corrosion." Some corrosion will occur and unless it is abnormal, it should not be of concern. We have discussed this change with the licensee and the licensee concurs.

(4) The licensee also proposed to delete a pump test requirement for several of the systems which requires that a pump be operated in test for at least 15 minutes. The revised Technical Specifications refer to the requirements of Section XI. The Section XI requirements encompass the intent of the 15 minute test run and more clearly define conditions by requiring that the pump be tested under conditions as stable as the system permits or until the bearing temperatures stabilize. The proposed Technical Specifications, which endorses the ASME Section XI testing requirement, therefore, exceed the current requirements and are acceptable.

(5) The licensee has also proposed changes to the inspection requirements for the steam generators in Unit 2 (Section 4.4.5 and Table 4.4-1). The changes more precisely specify the frequency of tests, the sample sizes, and the criteria for determining degraded tubes. Table 4.4.1 is changed to recognize that Cook has four steam generators and requirements for a two or three loop plant do not pertain to Cook. These changes are consistent with the Standard Technical Specifications and the Unit 2 Technical Specifications which were previously found acceptable. We have determined that the changes do not adversely affect or degrade the plant's safety margin and are acceptable as proposed.

In each of the above proposed changes which relate to the inservice inspection and testing of Class 1, 2, and 3 components and augmented surveillance requirements in the Technical Specifications, we have found the changes acceptable as proposed. We have also included the clarifications for the containment sump corrosion as agreed to by the licensee.

### Operable

(6) The licensee has proposed to delete surveillance requirements which are considered duplicative to the definition of Operable. These include 1) starting pumps from the control room and 2) verifying pumps are aligned to an Operable emergency bus. We agree that both of these requirements are embodied in the definition of Operable and nothing is added by having additional statements in individual Technical Specifications. The systems involved in this change include the charging pumps, boric acid transfer pumps, safety injection pumps,

residual heat removal pumps, containment spray pumps, component cooling water pumps, and essential service water pumps. We find the proposed changes to delete duplicative Operable requirements to be acceptable.

#### Charging Pump Pressure-Shutdown

(7) The current Unit 2 Technical Specifications for the charging pump during shutdown (Section 4.1.2.3.1) require a discharge pressure of 2405 psig. This is an error which was discovered and corrected on Unit 1; the licensee proposes to make the Technical Specifications alike for the two Units since the systems are alike. We had previously agreed that the discharge pressure during shutdown would be lower since the reactor system pressure was also lower. The correct pressure should be 2390 psig; we find the proposed change to the Unit 2 Technical Specifications acceptable.

#### ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of the facilities' components located within the restricted areas as defined in 10 CFR 20. The staff has determined that these 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 these amendments involve no significant hazards consideration, and there has been no public comment on such finding. Accordingly, these 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 these amendments.

#### CONCLUSION

The Commission made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register (48 FR 33081) on July 20, 1983, and consulted with the state of Michigan. No public comments were received, and the state of Michigan did not have any comments.

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: G. Johnson  
D. Wigginton  
G. Bagchi  
R. Ballard

Dated: July 29, 1986

July 29, 1986

DISTRIBUTION:

Docket File

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PRC System

PWR#4 R/F

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ACRS (10)

OELD

LHarmon

TBarnhart (8)

WJones

OPA

LFMB

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NThompson

AMENDMENT NO. 98 TO DC COOK UNITS 1 AND 2  
85