February 9, 1990

Docket Nos. 50-315 and 50-316

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Mr. Milton P. Alexich, Vice President
Indiana Michigan Power Company
c/o American Electric Power
Service Corporation
1 Riverside Plaza
Columbus, Ohio 43216

Dear Mr. Alexich:

SUBJECT: AMENDMENTS NOS. 131 AND 116 TO FACILITY OPERATING LICENSES NOS. DPR- 58 AND DPR-74: (TACS NOS. 61692, 61693, 67796, 74202 AND 74203)

The Commission has issued the enclosed Amendment No. 131 to Facility Operating License No. DPR-58 and Amendment No. 116 to Facility Operating License No. DPR-74 for the Donald C. Cook Nuclear Plant, Units Nos. 1 and 2. The amendments consist of changes to the Technical Specifications in response to your application dated May 30, 1986 as further clarified and revised in submittals dated June 23, 1986, February 25, March 2, and June 16, 1988, and January 23, 1989.

These amendments would require portions of the systems used to achieve safe shutdown (following a fire) via cross ties to be operable regardless of the unit's operating status, as long as the opposite unit is in Mode 1, 2, 3, or 4 (except for the auxiliary feedwater system which is not required to be operable in Mode 4).

The enclosed safety evaluation in support of the above amendments also provides approval for a proposed change to the TS Bases that would suspend the requirements for a fire watch in areas where CO_2 discharge has occurred or is likely to occur.

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

Sincerely,

/s/

Joseph Giitter, Project Manager
Project Directorate III-1
Division of Reactor Projects - III, IV, V & Special Projects
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 131 to DPR-58
2. Amendment No. 116 to DPR-74
3. Safety Evaluation

cc w/enclosures:
See next page

LA/PD31:DRSP	PM/PD31:DRSP	SPLB	A/D/PD31:DRSP	OGC
PShuttleworth	JGiitter	CMcCracken	JThoma	
12/26/89	1/8/90	1/9/90	1/9/90	1/17/90

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

February 9, 1990

Dockets Nos. 50-315 and 50-316

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Indiana Michigan Power Company
c/o American Electric Power
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1 Riverside Plaza
Columbus, Ohio 43216

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Office of Nuclear Reactor Regulation

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See next page

Mr. Milton Alexich
Indiana Michigan Power Company

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

INDIANA MICHIGAN POWER COMPANY

DOCKET NO. 50-315

DONALD C. COOK NUCLEAR PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 131
License No. DPR-58

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Indiana Michigan Power Company (the licensee) dated May 30, 1986, as further clarified and revised in submittals dated June 23, 1986, February 25, March 2, and June 16, 1988, and January 23, 1989, 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:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 131 , 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 its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

John O. Thoma

John O. Thoma, Acting Director
Project Directorate III-1
Division of Reactor Projects - III,
IV, V & Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 9, 1990

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

INDIANA MICHIGAN POWER COMPANY

DOCKET NO. 50-316

DONALD C. COOK NUCLEAR PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 116
License No. DPR-74

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Indiana Michigan Power Company (the licensee) dated May 30, 1986, as further clarified and revised in submittals dated June 23, 1986, February 25, March 2, and June 16, 1988, and January 23, 1989, 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:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 116 , 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 its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

John O. Thoma

John O. Thoma, Acting Director
Project Directorate III-1
Division of Reactor Projects - III, IV, V & Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical Specifications

Date of Issuance: February 9, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 131

FACILITY OPERATING LICENSE NO. DPR-58

DOCKET NO. 50-315

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by amendment number and contain marginal lines indicating the area of change.

REMOVE	INSERT
3/4 1-11	3/4 1-11
-	3/4 1-11a
3/4 3-48	3/4 3-48
-	3/4 3-48a
-	3/4 3-48b
-	3/4 3-48c
-	3/4 3-48d
3/4 7-5	3/4 7-5
3/4 7-6	3/4 7-6
3/4 7-15	3/ 7-15
3/4 7-17	3/4 7-17
B 3/4 1-3	B 3/4 1-3
B 3/4 1-4	B 3/4 1-4
B 3/4 3-2	B 3/4 3-2
B 3/4 7-2	B 3/4 7-2
B 3/4 7-4	B 3/4 7-4
B 3/4 7-8	B 3/4 7-8
-	B 3/4 7-9

REACTIVITY CONTROL SYSTEMS
CHARGING PUMP - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.3

a. 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.

b. One charging flowpath associated with support of Unit 2 shutdown functions shall be available.*

APPLICABILITY: Specification 3.1.2.3.a. - MODES 5 and 6
Specification 3.1.2.3.b. - At all times when Unit 2 is in MODES 1, 2, 3, or 4.

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.

d. In addition to the above, when Specification 3.1.2.3.b is applicable and the required flow path is not available, return the required flow path to available status within 7 days, or provide equivalent shutdown capability in Unit 2 and return the required flow path to available status within the next 60 days, or have Unit 2 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours.

e. The requirements of Specification 3.0.4 are not applicable when Specification 3.1.2.3.b applies.

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 maximum of one centrifugal charging pump shall be OPERABLE whenever the temperature of one or more of the RCS cold legs is less than or equal to 170° F.

a. The reactor vessel head is removed, or

b. The temperature of all RCS cold legs is greater than 170°F

4.1.2.3.3 Charging line cross-tie valves to Unit 2 will be cycled full travel at least once per 18 months. Following cycling, the valves will be verified to be in their closed positons.

TABLE 4.3-6

REMOTE SHUTDOWN MONITORING INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

INSTRUMENT	LOCATION	CHANNEL CHECK	CHANNEL CALIBRATION
1. Reactor Trip Breaker Indication	Hot Shutdown Panel in Unit No. 2 Control Room	N.A.	N.A.
2. Pressurizer Pressure	Hot Shutdown Panel in Unit No. 2 Control Room	M	R+
3. Pressurizer Level	Hot Shutdown Panel in Unit No. 2 Control Room	M	R+
4. Steam Generator Level	Hot Shutdown Panel in Unit No. 2 Control Room	M	R
5. Steam Generator Pressure	Hot Shutdown Panel in Unit No. 2 Control Room	M	R+

+ The provisions of Specification 4.0.6 are applicable.

INSTRUMENTATION

APPENDIX R REMOTE SHUTDOWN INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.5.1

The Appendix R remote shutdown instrumentation channels shown in Table 3.3-9A be OPERABLE with an opposite unit power supply available and with read out capability at the LSI panels.

APPLICABILITY MODES 1, 2, and 3

ACTION

a. With the number of OPERABLE Appendix R remote shutdown monitoring channels less than required by Table 3.3-9A, either restore the inoperable channel to OPERABLE status within 30 days, or be in HOT SHUTDOWN within the next 12 hours.

b. With the opposite unit power supply not available, restore the power supply to available status within 7 days, or provide fire watches in the affected areas and restore the inoperable channel to OPERABLE status within the next 60 days, or be in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours.

c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.5.1 Each Appendix R remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6A.

TABLE 3.3-9A

APPENDIX R REMOTE SHUTDOWN MONITORING INSTRUMENTATION

INSTRUMENT	READOUT LOCATION	MEASUREMENT RANGE	MINIMUM CHANNELS OPERABLE
1. Steam Generators 1 and 4 Level	LSI Cabinet 1 and LSI Cabinet 4	0-100% wide range instrument span	one on each LSI cabinet for each steam generator
2. Steam Generators 2 and 3 Level	LSI Cabinet 2 and LSI Cabinet 4	0-100% wide range instrument span	one on each LSI cabinet for each steam generator
3. Steam Generators 1 and 4 Pressure	LSI Cabinet 4 and LSI Cabinet 5	0-1500 psig	one on each LSI cabinet for each steam generator
4. Steam Generators 2 and 3 Pressure	LSI Cabinet 4 and LSI Cabinet 6	0-1500 psig	one on each LSI cabinet for each steam generator
5. Reactor Coolant Loop 4 Temperature (Cold)	LSI Cabinet 4 and LSI Cabinet 5	0-700^{o}F	one on each LSI cabinet
6. Reactor Coolant Loop 4 Temperature (Hot)	LSI Cabinet 4 and LSI Cabinet 5	0-700^{o}F	one on each LSI cabinet
7. Reactor Coolant Loop 2 Temperature (Cold)	LSI Cabinet 4 and LSI Cabinet 6	0-700^{o}F	one on each LSI cabinet
8. Reactor Coolant Loop 2 Temperature (Hot)	LSI Cabinet 4 and LSI Cabinet 6	0-700^{o}F	one on each LSI cabinet

TABLE 3.3-9A (cont.)

APENDIX R REMOTE SHUTDOWN MONITORING INSTRUMENTATION

INSTRUMENT	READOUT LOCATION	MEASUREMENT RANGE	MINIMUM CHANNELS OPERABLE
9. Presurizer Level	LSI Cabinet 3	0-100% of instrument span	1
10. Reactor Coolant System Pressure	LSI Cabinet 3	0-3000 psig	1
11. Charging Cross-Flow Between Units	Corridor Elev. 587'	0-150 gpm	1
12. Source Range Neutron Detector (N-23)	LSI Cabinet 4	1-1 X 10^6 cps	1

TABLE 4.3-6A

APPENDIX R REMOTE SHUTDOWN MONITORING INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

INSTRUMENT	LOCATION	CHANNEL CHECK	CHANNEL CALIBRATION
1. Steam Generators 1 and 4 Level	LSI Cabinet 1 and LSI Cabinet 4	M	R
2. Steam Generators 2 and 3 Level	LSI Cabinet 2 and LSI Cabinet 4	M	R
3. Steam Generators 1 and 4 Pressure	LSI Cabinet 4 and LSI Cabinet 5	M	R
4. Steam Generators 2 and 3 Pressure	LSI Cabinet 4 and LSI Cabinet 6	M	R
5. Reactor Coolant Loop 4 Temperature (Cold)	LSI Cabinet 4 and LSI Cabinet 5	M	R
6. Reactor Coolant Loop 4 Temperature (Hot)	LSI Cabinet 4 and LSI Cabinet 5	M	R
7. Reactor Coolant Loop 2 Temperature (Cold)	LSI Cabinet 4 and LSI Cabinet 6	M	R
8. Reactor Coolant Loop 2 Temperature (Hot)	LSI Cabinet 4 and LSI Cabinet 6	M	R
9. Pressurizer Level	LSI Cabinet 3	M	R
10. Reactor Coolant System Pressure	LSI Cabinet 3	M	R
11. Charging Cross-Flow Between Units	Corridor Elev. 587'	n/a	R*
12. Source Range Neutron Detector (N-23)	LSI Cabinet 4	n/a	R

* Charging Cross-Flow between Units is an instrument common to both Unit 1 and 2. This surveillance will only be conducted on an interval consistent with Unit 1 refueling.

PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2

a. At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

   1. Two feedwater pumps, each capable of being powered from separate emergency busses, and

   2. One feedwater pump capable of being powered from an OPERABLE steam supply system.

b. At least one auxiliary feedwater flowpath in support of Unit 2 shutdown functions shall be available.

APPLICABILITY: Specification 3.7.1.2.a - MODES 1, 2, 3.
Specification 3.7.1.2.b - At all times when Unit 2 is in MODES 1, 2, or 3.

ACTIONS:

When Specification 3.7.1.2.a is applicable:

a. With one auxiliary feedwater pump inoperable, restore the required auxiliary feedwater pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With two auxiliary feedwater pumps inoperable, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

c. With three auxiliary feedwater pumps inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater pump to OPERABLE status as soon as possible.

When Specification 3.7.1.2.b is applicable:

With no flow path to Unit 2 available, return at least one flow path to available status within 7 days, or provide equivalent shutdown capability in Unit 2 and return at least one flow path to available status within the next 60 days, or have Unit 2 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours. The requirements of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.1.2 Each auxiliary feedwater pump shall be demonstrated OPERABLE:

a. At least once per 31 days by:

1. Verifying that each motor driven pump develops an equivalent discharge pressure of $\geq$ 1375 psig at 60°F on recirculation flow.

2. Verifying that the steam turbine driven pump develops a discharge pressure of $\geq$ 1285 psig at 60°F and at a flow of $\geq$ 700 gpm when the secondary steam supply pressure is greater than 310 psig. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

3. Verifying that each non-automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in its correct position.

4. Verifying that each automatic valve in the flow path is in the fully open position whenever the auxiliary feedwater system is placed in automatic control or when above 10% RATED THERMAL POWER. This requirement is not applicable for those portions of the Auxiliary Feedwater System being used intermittently to maintain steam generator level.

b. At least once per 18 months during shutdown by: *

1. Verifying that each automatic valve in the flow path actuates to its correct position upon receipt of the appropriate engineered safety features actuation test signal required by Specification 3/4.3.2.

2. Verifying that each auxiliary feedwater pump starts as designed automatically upon receipt of the appropriate engineered safety features actuation test signal required by Specification 3/4.3.2.

3. Verifying that the unit cross-tie valves can cycle full travel. Following cycling, the valves will be verified to be in their closed positions.

* The provisions of Specification 4.0.6 are applicable.

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3.1

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

b. At least one component cooling water flowpath in support of Unit 2 shutdown functions shall be available.

APPLICABILITY: Specification 3.7.3.1.a. - MODES 1, 2, 3, 4.
Specification 3.7.3.1.b. - At all times when Unit 2 is in MODES 1, 2, 3, or 4.

ACTION:

When Specification 3.7.3.1.a is applicable:

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.

When Specification 3.7.3.1.b is applicable:

With no flowpath to Unit 2 available, return at least one flow path to available status within 7 days, or provide equivalent shutdown capability in Unit 2 and return at least one flow path to available status within the next 60 days, or have Unit 2 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours. The requirements of Specification 3.0.4 are not applicable.

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.

d. At least once per 18 months during shutdown, by verifying that the cross-tie valves can cycle full travel. Following cycling, the valves will be verified to be in their closed positions.

* The provisions of Specification 4.0.6 are applicable.

PLANT SYSTEMS
3/4.7.4 ESSENTIAL SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.4.1

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

b. At least one essential service water flowpath associated with support of Unit 2 shutdown functions shall be available.

APPLICABILITY: Specification 3.7.4.1.a. - MODES 1, 2, 3, and 4.
Specification 3.7.4.1.b. - At all times when Unit 2 is in MODES 1, 2, 3 or 4.

ACTION:

When Specification 3.7.4.1.a is applicable:

With only one essential 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.

When Specification 3.7.4.1.b is applicable:

With no essential service water flow path available in support of Unit 2 shutdown functions, return at least one flow path available status within 7 days or provide equivalent shutdown capability in Unit 2 and return the equipment to available status within the next 60 days, or have Unit 2 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours.
The requirements of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

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 positon 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.

*The provisions of Specification 4.0.6 are applicable.

BORATION SYSTEMS (Continued)

With the RCS average temperature above 200°F, one injection system is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting CORE ALTERATIONS and positive reactivity change in the event the single injection system becomes inoperable.

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 170°F, unless the reactor vessel head is removed, provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

The boration capability required below 200°F is sufficient to provide a SHUTDOWN MARGIN of 1% Δ k/k after xenon decay and cooldown from 200°F to 140°F. This condition requires either 835 gallons of 20,000 ppm borated water from the boric acid storage tanks or 9690 gallons of 1950 ppm borated water from the refueling water storage tank. The charging flowpath of Unit 1 required for Unit 2 shutdown support ensures that flow is available to Unit 2 and addresses the requirements of 10 CFR 50 Appendix R. The flowpath consists of a charging pump powered from an electrical bus and associated water supplies and delivery system. Fire watches posted in the affected opposite unit areas (i.e., Unit 2 areas requiring use of the Unit 1 charging system in the event of a fire) may serve as the equivalent shutdown capability specified in the action statements of Specification 3.1.2.3. In the affected areas, either establish continuous fire watches or verify the OPERABILITY of fire detectors per Specification 4.3.3.7 and establish hourly fire watch patrols. The required opposite unit equipment along with the surveillance requirements necessary to ensure that this equipment is capable of fulfilling its intended Appendix R alternate safe shutdown function have been established and are included in a plant procedure. An additional plant procedure details how the above noted fire watches will be implemented.

3/4.1.3 MOVABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) limit the potential effects of rod ejection accident. OPERABILITY of the control rod position indicators is required to determine control rod positions and thereby ensure compliance with the control rod alignment and insertion limits.

The ACTION statements which permit limited variations from the basic requirements are accompanied by additional restrictions which ensure that the original criteria are met. Misalignment of a rod requires measurement of peaking factors or a restriction in THERMAL POWER; either of these restrictions provide assurance of fuel rod integrity during continued operation. The reactivity worth of a misaligned rod is limited for the remainder of the fuel cycle to prevent exceeding the assumptions used in the accident analysis for a rod ejection accident.

MOVABLE CONTROL ASSEMBLIES (Continued)

The maximum rod drop time restriction is consistent with the assumed rod drop time used in the accident analyses. Measurement with $T_{avg} \geq 541^{\circ}F$ and with all reactor coolant pumps operating ensures that the measured drop times will be representative of insertion times experienced during a reactor trip at operating conditions.

Control rod positions and OPERABILITY of the rod position indicators are required to be verified on a nominal basis of once per 12 hours with more frequent verifications required if an automatic monitoring channel is inoperable. These verification frequencies are adequate for assuring that the applicable LCO's are satisfied.

3/4.3.3.2 MOVABLE INCORE DETECTORS

The OPERABILITY of the movable incore detectors with the specified minimum complement of equipment ensures that the measurements obtained from use of this system accurately represent the spatial neutron flux distribution of the reactor core.

3/4.3.3.3 SEISMIC INSTRUMENTATION

The OPERABILITY of the seismic instrumentation ensures that sufficient capability is available to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for the facility.

3/4.3.3.4 METEOROLOGICAL INSTRUMENTATION

The OPERABILITY of the meteorological instrumentation ensures that sufficient meteorological data is available for estimating potential radiation doses to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public.

3/4.3.3.5 REMOTE SHUTDOWN INSTRUMENTATION

The OPERABILITY of the remote shutdown instrumentation ensures that sufficient capability is available to permit shutdown and maintenance of HOT STANDBY of the facility from locations outside of the control room. This capability is required in the event control room habitability is lost and is consistent with General Design Criteria 19 of 10 CFR 50.

3/4.3.3.5.1 APPENDIX R REMOTE SHUTDOWN INSTRUMENTATION

The OPERABILITY of the Appendix R remote shutdown instrumentation ensures that sufficient instrumentation is available to permit shutdown of the facility to COLD SHUTDOWN conditions at the local shutdown indication (LSI) panel. In the event of a fire, normal power to the LSI panels may be lost. As a result, capability to repower the LSI panels from Unit 2 has been provided. If the alternate power supply is not available, fire watches will be established in those fire areas where loss of normal power to the LSI panels could occur in the event of fire. This will consist of either establishing continuous fire watches or verifying OPERABILITY of fire detectors per Specification 4.3.3.7 and establishing hourly fire watches. The details of how these fire watches are to be implemented are included in a plant procedure.

U = Maximum number of inoperable safety valves per operating steam line = 1, 2, or 3.

(109) = Power Range Neutron Flux-High Trip Setpoint for 4 loop operation.

(76) = Maximum percent of RATED THERMAL POWER permissible by P-8 Setpoint for 3 loop operation.

X = Total relieving capacity of all safety valves per steam line = 4,288,450 lbs/hour.

Y = Maximum relieving capacity of any one safety valve = 857,690 lbs/hour.

3/4.7.1.2 AUXILIARY FEEDWATER SYSTEM

The OPERABILITY of the auxiliary feedwater system ensures that the Reactor Coolant system can be cooled down to less than 350°F from normal operating conditions in the event of a total loss of off-site power.

Each electric driven auxiliary feedwater pump is capable of delivering a total feedwater flow of 450 gpm at a pressure of 1065 psig to the entrance of the steam generators. The steam driven auxiliary feedwater pump is capable of delivering a total feedwater flow of 900 gpm at a pressure of 1065 psig to the entrance of the steam generators. This capacity is sufficient to ensure that adequate feedwater flow is available to remove decay heat and reduce the Reactor Coolant system temperature to less than 350°F when the Residual Heat Removal system may be placed into operation.

The acceptance discharge pressures for the auxiliary feedwater pumps are based on a fluid temperature of 60°F. Water density corrections are permitted to allow comparison of test results which vary depending on ambient conditions.

In addition to its safety design function, the AFW system is used to maintain steam generator level during startup (including low power operation). During this time, the system design allows for automatic initiation of the auxiliary feedwater pumps and their related automatic valves in the flow path.

The auxiliary feedwater flowpath, with a pump and associated water supplies and piping, will support shutdown cooling requirements of Unit 2. This capacity addresses the 10 CFR 50 Appendix R safe shutdown requirements. Fire watches posted in the affected opposite unit areas (i.e., Unit 2 areas requiring use of the Unit 1 auxiliary feedwater system in the event of a fire) may serve as the equivalent shutdown capability specified in the action statements of Specification 3.7.1.2. In the affected areas, either establish continuous fire watches or verify the OPERABILITY of fire detectors per Specification 4.3.3.7 and establish hourly fire watch patrols. The required opposite unit equipment along with the surveillance requirements necessary to ensure that this equipment is capable of fulfilling its intended Appendix R alternate safe shutdown function have been established and are included in a plant procedure. An additional plant procedure details how the above noted fire watches will be implemented.

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations of 70°F and 200 psig are based on average steam generator impact values taken at +10°F and are sufficient to prevent brittle fracture.

3/4.7.3 COMPONENT COOLING WATER SYSTEM

The OPERABILITY of the component cooling water system ensures that sufficient cooling capacity is available for continued operation of safety related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the accident analyses.

3/4.7.4 ESSENTIAL SERVICE WATER SYSTEM

The OPERABILITY of the essential service water system ensures that sufficient cooling capacity is available for continued operation of safety related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a signal failure, is consistent with the assumptions used in the accident conditions within acceptable limits.

3/4.7.3 AND 3/4.7.4

The OPERABILITY of the Unit 1 flowpaths which support Unit 2 shutdown functions ensures the availability of cooling functions on Unit 2 and addresses the requirements of 10 CFR 50 Appendix R. The required flowpath consists of a pump and associated water supplies and delivery systems. Fire watches posted in the affected opposite unit areas (i.e., Unit 2 areas requiring use of the Unit 1 component cooling water system or essential service water system in the event of a fire) may serve as the equivalent shutdown capability specified in the action statements of Specifications 3.7.3.1 and 3.7.4.1. In the affected areas, either establish continuous fire watches or verify the OPERABILITY of fire detectors per Specification 4.3.3.7 and establish hourly fire watch patrols. The required opposite unit equipment along with the surveillance requirements necessary to ensure that this equipment is capable of fulfilling its intended Appendix R alternate safe shutdown functions have been established and are included in a plant procedure. An additional plant procedure details how the above noted fire watches will be implemented.

BASES

3/4.7.9 Cont.

The purpose of the charcoal filter fire suppression T/S is to account for detection and suppression of fires in the charcoal filters. Manual operation of these systems is allowed because two-point heat detection with control room and local annunciation of trouble conditions is provided for the charcoal filters. The OPERABILITY of the fire suppression system protecting the charcoal filters is only required when there charcoal in the filters. Actuation of spray water onto the charcoal filters requires both the manual opening of the system isolation valve and reaching the high temperature alarm setpoint for the automatic opening of the system deluge valve.

Because of the inaccessibility of the lower containment to personnel during operation due to ALARA radiation exposure concerns, the use of one or more CCTVs in the lower containment, to monitor for fire and smoke, is an acceptable substitute to an hourly fire watch, if the fire suppression system becomes inoperable.

All hourly fire watch patrols are performed at intervals of sixty minutes with a margin of fifteen minutes.

A continuous fire watch requires that a trained individual be in the specified area at all times and that each fire zone within the specified area be patrolled at least once every fifteen minutes with a margin of five minutes.

A control valve is defined as a valve that when closed does not leave an alternate open flow path to a system. A sectionalizing valve is defined as a valve that when closed does not prevent an alternate open flow path to a system and hence does not make the fire suppression water system inoperable . Under certain situations, the closure of a sectionalizing valve followed by the closure of a second valve will not leave an open flow path to one of the specified systems. In this instance, Action Statement b of Specification 3.7.9.1 is applicable.

Manual actuation of CO_2 fire supporession systems provides adequate fire protection for the protected areas based on operable fire detection in the area, low combustible loadings, and prompt fire brigade response to alarms.

Many of the action statements take credit for operable fire detection in lieu of a fire watch when a fire protection system is inoperable. Operable fire detection provides sufficient early warning capability of a fire to the appropriate Control Room.

During Surveillance Testing of a Low Pressure CO_2 System with the system inoperable, the requirement for a continuous fire watch may be suspended during portions of the test which result or may result in a discharge into the CO_2 protected area. Similarly, if a CO_2 actuation occurs which results in the need to have the Low Pressure CO_2 System made inoperable, the requirement for a continuous fire watch may be suspended. In either case, the area affected shall be restored to habitability as soon as practicable, after which the continuous fire watch is to be re-established if the system is still inoperable.

3/4.7.10 FIRE RATED ASSEMBLIES

The OPERABILITY of the fire barriers and barrier penetrations ensure that fire damage will be limited. These design features minimize the possibility of a single fire involving more than one fire area prior to detection and extinguishment. The fire barriers and fire barrier penetration sealing devices are periodically inspected to verify their OPERABILITY. The functional testing of the fire dampers is provided to ensure that the dampers remain functional. The ventilation seals area seals around ventilation duct work penetrating fire barriers. It is not our intent to rely on backup systems or other compensatory measures for an extended period of time and action will be taken to restore the inoperable portions of the fire rated assembly to OPERABLE status within a reasonable period.

For the purpose of determining OPERABILITY, an OPERABLE fire rated assembly and/or sealing device is one that is capable of performing its intended safety function.

ATTACHMENT TO LICENSE AMENDMENT NO. 116

FACILITY OPERATING LICENSE NO. DPR-74

DOCKET NO. 50-316

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by amendment number and contain marginal lines indicating the area of change.

REMOVE	INSERT
3/4 1-11	3/4 1-11
-	3/4 1-11a
3/4 3-43*	3/4 3-43*
3/4 3-44	3/4 3-44
-	3/4 3-44a
-	3/4 3-44b
-	3/4 3-44c
-	3/4 3-44d
3/4 7-5	3/4 7-5
3/4 7-6	3/4 7-6
3/4 7-12	3/4 7-12
3/4 7-13	3/4 7-13
B 3/4 1-3	B 3/4 1-3
B 3/4 1-4	B 3/4 1-4
B 3/4 3-2	B 3/4 3-2
B 3/4 3-2a	B 3/4 3-2a
B 3/4 7-2	B 3/4 7-2
B 3/4 7-4	B 3/4 7-4
B 3/4 7-7	B 3/4 7-7
B 3/4 7-8	B 3/4 7-8

*Overleaf page provided to maintain document completeness. No changes contained on this page.

CHARGING PUMP - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.3

a. 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.

b. One charging flow path associated with support of Unit 1 shutdown functions shall be available.*

APPLICABILITY: Specification 3.1.2.3.a. - MODES 5 and 6
Specification 3.1.2.3.b. - At all times when Unit 1 is in MODES 1, 2, 3, or 4.

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 3.0.4 are not applicable.

d. In addition to the above, when Specification 3.1.2.3.b is applicable and the required flow path is not available, return the required flow path to available status within 7 days, or provide equivalent shutdown capability in Unit 1 and return the required flow path to available status within the next 60 days, or have Unit 1 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours.

e. The requirements of Specification 3.0.4 are not applicable when Specification 3.1.2.3.b applies.

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.

*A maximum of one centrifugal charging pump shall be OPERABLE whenever the temperature of one or more of the RCS cold legs is less than or equal to 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 RWST is greater than the minimum required by Specification 3.1.2.7.b.2.

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.

4.1.2.3.3 Charging line cross-tie valves to Unit 1 will be cycled full travel at least once per 18 months. Following cycling, the valves will be verified to be in their closed positions.

TABLE 3.3-9

REMOTE SHUTDOWN MONITORING INSTRUMENTATION

INSTRUMENT	READOUT LOCATION	MEASUREMENT RANGE	MINIMUM CHANNELS OPERABLE
1. Reactor Trip Breaker Indication	Hot Shutdown Panel in Unit No. 1 Control Room	OPEN-CLOSE	1/trip breaker
2. Pressurizer Pressure	Hot Shutdown Panel in Unit No. 1 Control Room	1700-2500 psig	1
3. Pressurizer Level	Hot Shutdown Panel in Unit No. 1 Control Room	0-100% of instrument span	1
4. Steam Generator Pressure	Hot Shutdown Panel in Unit No. 1 Control Room	0-1200 psig	1/steam generator
5. Steam Generator Level	Hot Shutdown Panel in Unit No. 1 Control Room	0-100% wide range instrument span	1/steam generator

TABLE 4.3-6

REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	LOCATION	CHANNEL CHECK	CHANNEL CALIBRATION
1. Reactor Trip Breaker Indication	Hot Shutdown Panel in Unit No. 1 Control Room	N.A.	N.A.
2. Pressurizer Pressure	Hot Shutdown Panel in Unit No. 1 Control Room	M	R
3. Pressurizer Level	Hot Shutdown Panel in Unit No. 1 Control Room	M	R
4. Steam Generator Level	Hot Shutdown Panel in Unit No. 1 Control Room	M	R
5. Steam Generator Pressure	Hot Shutdown Panel in Unit No. 1 Control Room	M	R

INSTRUMENTATION

APPENDIX R REMOTE SHUTDOWN INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.5.1

The Appendix R remote shutdown instrumentation channels shown in Table 3.3-9A shall be OPERABLE with an opposite unit power supply available and with read out capability at the LSI panels.

APPLICABILITY MODES 1, 2, and 3

ACTION

a. With the number of OPERABLE Appendix R remote shutdown monitoring channels less than required by Table 3.3-9A, either restore the inoperable channel to OPERABLE status within 30 days, or be in HOT SHUTDOWN within the next 12 hours.

b. With the opposite unit power supply not available, restore the power supply to available status within 7 days, or provide fire watches in the affected areas and restore the inoperable channel to OPERABLE status within the next 60 days, or be in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours.

c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.5.1 Each Appendix R remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6A.

TABLE 3.3-9A

APPENDIX R REMOTE SHUTDOWN MONITORING INSTRUMENTATION

INSTRUMENT	READOUT LOCATION	MEASUREMENT RANGE	MINIMUM CHANNELS OPERABLE
1. Steam Generators 1 and 4 Level	LSI Cabinet 1 and LSI Cabinet 4	0-100% wide range instrument span	one on each LSI cabinet for each steam generator
2. Steam Generators 2 and 3 Level	LSI Cabinet 2 and LSI Cabinet 4	0-100% wide range instrument span	one on each LSI cabinet for each steam generator
3. Steam Generators 1 and 4 Pressure	LSI Cabinet 4 and LSI Cabinet 5	0-1500 psig	one on each LSI cabinet for each steam generator
4. Steam Generators 2 and 3 Pressure	LSI Cabinet 4 and LSI Cabinet 6	0-1500 psig	one on each LSI cabinet for each steam generator
5. Reactor Coolant Loop 4 Temperature (Cold)	LSI Cabinet 4 and LSI Cabinet 5	0-700°F	one on each LSI cabinet
6. Reactor Coolant Loop 4 Temperature (Hot)	LSI Cabinet 4 and LSI Cabinet 5	0-700°F	one on each LSI cabinet
7. Reactor Coolant Loop 2 Temperature (Cold)	LSI Cabinet 4 and LSI Cabinet 6	0-700°F	one on each LSI cabinet
8. Reactor Coolant Loop 2 Temperature (Hot)	LSI Cabinet 4 and LSI Cabinet 6	0-700°F	one on each LSI cabinet

TABLE 3.3-9A (cont.)

APENDIX R REMOTE SHUTDOWN MONITORING INSTRUMENTATION

INSTRUMENT	READOUT LOCATION	MEASUREMENT RANGE	MINIMUM CHANNELS OPERABLE
9. Presurizer Level	LSI Cabinet 3	0-100% of instrument span	1
10. Reactor Coolant System Pressure	LSI Cabinet 3	0-3000 psig	1
11. Charging Cross-Flow Between Units	Corridor Elev. 587'	0-150 gpm	1
12. Source Range Neutron Detector (N-23)	LSI Cabinet 4	1-1 X 10^6 cps	1

TABLE 4.3-6A

APPENDIX R REMOTE SHUTDOWN MONITORING INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

INSTRUMENT	LOCATION	CHANNEL CHECK	CHANNEL CALIBRATION
1. Steam Generators 1 and 4 Level	LSI Cabinet 1 and LSI Cabinet 4	M	R
2. Steam Generators 2 and 3 Level	LSI Cabinet 2 and LSI Cabinet 4	M	R
3. Steam Generators 1 and 4 Pressure	LSI Cabinet 4 and LSI Cabinet 5	M	R
4. Steam Generators 2 and 3 Pressure	LSI Cabinet 4 and LSI Cabinet 6	M	R
5. Reactor Coolant Loop 4 Temperature (Cold)	LSI Cabinet 4 and LSI Cabinet 5	M	R
6. Reactor Coolant Loop 4 Temperature (Hot)	LSI Cabinet 4 and LSI Cabinet 5	M	R
7. Reactor Coolant Loop 2 Temperature (Cold)	LSI Cabinet 4 and LSI Cabinet 6	M	R
8. Reactor Coolant Loop 2 Temperature (Hot)	LSI Cabinet 4 and LSI Cabinet 6	M	R
9. Pressurizer Level	LSI Cabinet 3	M	R
10. Reactor Coolant System Pressure	LSI Cabinet 3	M	R
11. Charging Cross-Flow Between Units	Corridor Elev. 587'	n/a	R*
12. Source Range Neutron Detector (N-23)	LSI Cabinet 4	n/a	R

* Charging Cross-Flow between Units is an instrument common to both Unit 1 and 2. This surveillance will only be conducted on an interval consistent with Unit 1 refueling.

PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2

a. At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

   1. Two feedwater pumps, each capable of being powered from separate emergency busses, and

   2. One feedwater pump capable of being powered from an OPERABLE steam supply system.

b. At least one auxiliary feedwater flow path in support of Unit 1 shutdown functions shall be available.

APPLICABILITY: Specification 3.7.1.2.a - MODES 1, 2, 3.
Specification 3.7.1.2.b - At all times when Unit 1 is in MODES 1, 2, or 3.

ACTIONS:

When Specification 3.7.1.2.a is applicable:

a. With one auxiliary feedwater pump inoperable, restore the required auxiliary feedwater pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With two auxiliary feedwater pumps inoperable, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

c. With three auxiliary feedwater pumps inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater pump to OPERABLE status as soon as possible.

When Specification 3.7.1.2.b is applicable:

With no flow path to Unit 1 available, return at least one flow path to available status within 7 days, or provide equivalent shutdown capability in Unit 1 and return at least one flow path to available status within the next 60 days, or have Unit 1 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours. The requirements of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.1.2 Each auxiliary feedwater pump shall be demonstrated OPERABLE:

a. At least once per 31 days by:

1. Verifying that each motor driven pump develops an equivalent discharge pressure of $\geq$ 1240 psig at 60°F on recirculation flow.

2. Verifying that the steam turbine driven pump develops an equivalent discharge pressure of $\geq$ 1180 psig at 60°F and at a flow of $\geq$700 gpm when the secondary steam supply pressure is greater than 310 psig. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

3. Verifying that each non-automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in its correct position.

4. Verifying that each automatic valve in the flow path is in the fully open position whenever the auxiliary feedwater system is placed in automatic control or when above 10% RATED THERMAL POWER. This requirement is not applicable for those portions of the Auxiliary Feedwater System being used intermittently to maintain steam generator level.

b. At least once per 18 months during shutdown by:*

1. Verifying that each automatic valve in the flow path actuates to its correct position upon receipt of the appropriate engineered safety features actuation test signal required by Specification 3/4.3.2.

2. Verifying that each auxiliary feedwater pump starts as designed automatically upon receipt of the appropriate engineered safety features actuation test signal required by Specification 3/4.3.2.

3. Verifying that the unit cross-tie valves can cycle full travel. Following cycling, the valves will be verified to be in their closed positions.

*The provisions of Specification 4.0.7 are applicable.

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3.1

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

b. At least one component cooling water flow path in support of Unit 1 shutdown functions shall be available.

APPLICABILITY: Specification 3.7.3.1.a. - MODES 1, 2, 3, 4.
Specification 3.7.3.1.b. - At all times when Unit 1 is in MODES 1, 2, 3, or 4.

ACTION:

When Specification 3.7.3.1.a is applicable:

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.

When Specification 3.7.3.1.b is applicable:

With no flowpath in Unit 1 available, return at least one flowpath to available status within 7 days, or provide equivalent shutdown capability in Unit 1 and return at least one flow path to available status within the next 60 days, or have Unit 1 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours. The requirements of Specification 3.0.4 are not applicable.

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.*

4.7.3.2 At least once per 18 months during shutdown, verify that the unit cross-tie valves can cycle full travel. Following cycling, the valves will be verified to be in their closed positions.

*The provisions of Specification 4.0.7 are applicable.

PLANT SYSTEMS

3/4.7.4 ESSENTIAL SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.4.1

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

b. At least one essential service water flowpath associated with support of Unit 1 shutdown functions shall be available.

APPLICABILITY: Specification 3.7.4.1.a. - MODES 1, 2, 3, and 4.
specification 3.7.4.1.b. - At all times when Unit 1 is in MODES 1, 2, 3 or 4.

ACTION:

When Specification 3.7.4.1.a is applicable:

With only one essential 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.

When specification 3.7.4.1.b is applicable:

With no essential service water flow path available in support of Unit 1 shutdown functions, return at least one flow path to available status within 7 days or provide equivalent shutdown capability in Unit 1 and return the equipment to service within the next 60 days, or have Unit 1 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours. The requirements of Specifications 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

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.*

*The provisions of Specification 4.0.7 are applicable.

With the RCS average temperature above 200°F, a minimum of two separate and redundant boron injection systems are provided to ensure single functional capability in the event an assumed failure renders one of the systems inoperable. Allowable out-of-service periods ensure that minor component repair or corrective action may be completed without undue risk to overall facility safety from injection system failures during the repair period.

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, unless the reactor vessel head is removed, provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

The boration capability of either system is sufficient to provide the required SHUTDOWN MARGIN from expected operating conditions after xenon decay and cooldown to 200°F. The maximum expected boration capability usable volume requirement is 3700 gallons of 20,000 ppm borated water from the boric acid storage tanks or 118,000 gallons of 2000 ppm borated water from the refueling water storage tank. The numbers included in the Technical Specifications (BAST: 5470 gallons / RWST: 350,000 gallons) conservatively bound these and other applicable accident analysis requirements.

With the RCS average temperature below 200°F, one injection system is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting CORE ALTERATIONS and positive reactivity change in the event the single injection system becomes inoperable.

The boron capability required below 200°F is sufficient to provide the required MODE 5 SHUTDOWN MARGIN after xenon decay and cooldown from 200°F to 140°F. This condition requires usable volumes of either 4300 gallons of 20,0000 ppm borated water from the boric acid storage tanks or 90,000 gallons of 2000 ppm borated water from the refueling water storage tank. The charging flowpath of Unit 2 required for Unit 1 shutdown support ensures that flow is available to Unit 1 and addresses the requirements of 10 CFR 50 Appendix R. The flowpath consists of a charging pump powered from an electrical bus and associated water supplies and delivery system. Fire watches posted in the affected opposite unit areas (i.e., Unit 1 areas requiring use of the Unit 2 charging system in the event of a fire) may serve as the equivalent shutdown capability specified in the action statements of Specification 3.1.2.3. In the affected areas, either establish continuous fire watches or verify the OPERABILITY of fire detectors per Specification 4.3.3.7 and establish hourly fire watch patrols. The required opposite unit equipment along with the surveillance requirements necessary to ensure that this equipment is capable of fulfilling its intended Appendix R alternate safe shutdown function have been established and are included in a plant procedure. An additional plant procedure details how the above noted fire watches will be implemented.

BORATION SYSTEMS (Continued)

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between 8.5 and 11.0 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

The OPERABILITY of boron injection system during REFUELING ensures that this system is available for reactivity control while in MODE 6.

3/4.1.3 MOVABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) limit the potential effects of rod misalignment on associated accident analyses. OPERABILITY of the control rod position indicators is required to determine control rod positions and thereby ensure compliance with the control rod alignment and insertion limits.

The ACTION statements which permit limited variations from the basic requirements are accompanied by additional restrictions which ensure that the original design criteria are met. Misalignment of a rod requires measurement of peaking factors or a restriction in THERMAL POWER; either of these restrictions provide assurance of fuel rod integrity during continued operation. In addition, those accident analyses affected by a misaligned rod are reevaluated to confirm that the results remain valid during future operation.

The maximum rod drop time restriction is consistent with the assumed rod drop time used in the accident analyses. Measurement with T_{avg} 541°F and with all reactor coolant pumps operating ensures that the measured drop times will be representative of insertion times experienced during a reactor trip at operating conditions.

Control rod positions and OPERABILITY of the rod position indicators are required to be verified on a nominal basis of once per 12 hours with more frequent verifications required if an automatic monitoring channel is inoperable. These verification frequencies are adequate for assuring that the applicable LCO's are satisfied.

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.1 RADIATION MONITORING INSTRUMENTATION

The OPERABILITY of the radiation monitoring channels ensures that 1) the radiation levels are continually measured in the areas served by the individual channels and 2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded.

3/4.3.3.2 MOVABLE INCORE DETECTORS

The OPERABILITY of the movable incore detectors with the specified minimum complement of equipment ensures that the measurements obtained from use of this system accurately represent the spatial neutron flux distribution of the reactor core. The OPERABILITY of this system is demonstrated by irradiating each detector used and normalizing its respective output.

3/4.3.3.3 SEISMIC INSTRUMENTATION

The OPERABILITY of the seismic instrumentation ensures that sufficient capability is available to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for the facility.

3/4.3.3.4 METEOROLOGICAL INSTRUMENTATION

The OPERABILITY of the meteorological instrumentation ensures that sufficient meteorological data is available for estimating potential radiation doses to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public.

3/4.3.3.5 REMOTE SHUTDOWN INSTRUMENTATION

The OPERABILITY of the remote shutdown instrumentation ensures that sufficient capability is available to permit shutdown and maintenance of HOT STANDBY of the facility from locations outside of the control room. This capability if required in the event control room habitability is lost and is consistent with General Design Criteria 19 of 10 CFR 50.

3/4.3.3.5.1 APPENDIX R REMOTE SHUTDOWN INSTRUMENTATION

The OPERABILITY of the Appendix R remote shutdown instrumentation ensures that sufficient instrumentation is available to permit shutdown of the facility to COLD SHUTDOWN conditions at the local shutdown indication (LSI) panel. In the event of a fire, normal power to the LSI panels may be lost. As a result, capability to repower the LSI panels from Unit 1 has been provided. If the alternate power supply is not available, fire watches will be established in

these fire areas where loss of normal power to the LSI power could occur in the event of fire. This will consist of either establishing continuous fire watches or verifying OPERABILITY of fire detectors per Specification 4.3.3.7 and establishing hourly fire watches. The details of how these fire watches are to be implemented are included in a plant procedure.

3/4.3.3.6 POST-ACCIDENT INSTRUMENTATION

The OPERABILITY of the post-accident instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables during and following an accident.

The containment water level and containment sump level transmitters will be modified or replaced and OPERABLE by the end of the outage currently scheduled to begin in May 1988. 95

3/4.7.1.2 AUXILIARY FEEDWATER SYSTEM

The OPERABILITY of the auxiliary feedwater system ensures that the Reactor Coolant System can be cooled down to less than 350°F from normal operating conditions in the event of a total loss of off-site power.

Each electric driven auxiliary feedwater pump is capable of delivering a total feedwater flow of 450 gpm at a pressure of 1065 psig to the entrance of the steam generators. The steam driven auxiliary feedwater pump is capable of delivering a total feedwater flow of 900 gpm at a pressure of 1065 psig to the entrance of the steam generators. This capacity is sufficient to ensure that adequate feedwater flow is available to remove decay heat and reduce the Reactor Coolant system temperature to less than 350°F when the Residual Heat Removal System may be placed into operation.

The acceptance discharge pressures for the auxiliary feedwater pumps are based on a fluid temperature of 60°F. Water density corrections are permitted to allow comparison of test results which vary depending on ambient conditions.

In addition to its safety design function, the AFW system is used to maintain steam generator level during startup (including low power operation). During this time, the system design allows for automatic initiation of the auxiliary feedwater pumps and their related automatic valves in the flow path.

The auxiliary feedwater flowpath, with a pump and associated water supplies and piping, will support shutdown cooling requirements of Unit 1. This capacity addresses the 10 CFR 50 Appendix R safe shutdown requirements. Fire watches posed in the affected opposite unit areas (i.e., Unit 1 areas requiring use of the Unit 2 auxiliary feedwater system in the event of a fire) may serve as the equivalent shutdown capability specified in the action statements of Specifications 3.7.1.2. In the affected areas, either establish continuous fire watches or verify the OPERABILITY of fire detectors per specification 4.3.3.7 and establish hourly fire watch patrols. The required opposite unit equipment along with the surveillance requirements necessary to ensure that this equipment is capable of fulfilling its intended Appendix R alternate safe shutdown function have been established and are included in a plant procedure. An additional plant procedure details how the above noted fire watches will be implemented.

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations of 70°F and 200 psig are based on average steam generator impact values taken at +10°F and are sufficient to prevent brittle fracture.

3/4.7.3 COMPONENT COOLING WATER SYSTEM

The OPERABILITY of the component cooling water system ensures that sufficient cooling capacity is available for continued operation of safety related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the accident analyses.

3/4.7.4 ESSENTIAL SERVICE WATER SYSTEM

The OPERABILITY of the essential service water system ensures that sufficient cooling capacity is available for continued operation of safety related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a signal failure, is consistent with the assumptions used in the accident conditions within acceptable limits.

3/4.7.3 AND 3/4.7.4

The OPERABILITY of the Unit 2 flowpaths which support Unit 1 shutdown functions ensures the availability of cooling functions on Unit 1 and addresses the requirements of 10 CFR 50 Appendix R. The required flowpath consists of a pump and associated water supplies and delivery systems. Fire watches posted in the affected opposite unit areas (i.e., Unit 1 areas requiring use of the Unit 2 component cooling water system or essential service water system in the event of a fire) may serve as the equivalent shutdown capability specified in the action statements of Specifications 3.7.3.1 and 3.7.4.1. In the affected areas, either establish continuous fire watches or verify the OPERABILITY of fire detectors per Specification 4.3.3.7 and establish hourly fire watch patrols. The required opposite unit equipment along with the surveillance requirements necessary to ensure that this equipment is capable of fulfilling its intended Appendix R alternate safe shutdown function have been established and are included in a plant procedure. An additional plant procedure details how the above noted fire watches will be implemented.

3/4.7.5 CONTROL ROOM EMERGENCY VENTILATION SYSTEM

The OPERABILITY of the control room EMERGENCY ventilation system ensures that 1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system and 2) the control room will remain habitable for operations personnel during and following all credible accident conditions. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criteria 19 of Appendix "A", 10 CFR 50.

other tasks (e.g., an operator on tour) provided that such personnel fulfilled the above stated requirements. As a minimum, each area affected by an isolated low pressure CO_2 system must be visited every twenty-five (25) to thirty-five (35) minutes by the Roving Fire Watch Patrol. Such measures will provide the necessary level of fire protection while affording necessary provisions for personnel safety.

In the event that portions of the fire suppression systems are inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service. When the inoperable fire-fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the inoperable equipment is the primary means of fire suppression. Backup fire protection equipment will normally take the form of permanently mounted fire extinguishers and/or fire hose stations in or near the area, or fire hoses routed to the affected areas. However, it is not our intent to rely on backup systems or other compensatory measures for an extended period of time and action will be taken to restore the inoperable portions of the fire suppression system to OPERABLE status within a reasonable period.

The surveillance requirements provide assurance that the minimum OPERABILITY requirements of the fire suppression systems are met. An allowance is made for ensuring a sufficient volume of Halon and CO_2 in the storage tanks by verifying either the weight, level or pressure of the tanks.

In the event the fire suppression water system becomes inoperable, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant. The requirement for a twenty-four hour report to the Commission provides for prompt evaluation of the acceptability of the corrective measures to provide adequate fire suppression capability for continued protection of the nuclear plant.

The purpose of the charcoal filter fire suppression T/S is to account for detection and suppression of fires in the charcoal filters. Manual operation of these systems is allowed because two-point heat detection with control room and local annunciation of trouble conditions is provided for the charcoal filters. The OPERABILITY of the fire suppression system protecting the charcoal filters is only required when there is charcoal in the filters. Actuation of spray water onto the charcoal filters requires both the manual opening of the system isolation valve and reaching the high temperature alarm setpoint for the automatic opening of the system deluge valve.

Because of the inaccessibility of the lower containment to personnel during operation due to ALARA radiation exposure concerns, the use of one or more CCTVS in the lower containment to monitor for fire and smoke, is an acceptable substitute to a continuous fire watch, if the fire suppression system becomes inoperable.

BASES

All hourly fire watch patrols are performed at intervals of sixty minutes with a margin of fifteen minutes.

A continuous fire watch requires that a trained individual be in the specified area at all times and that each fire zone within the specified area is patrolled at least once every fifteen minutes with a margin of five minutes.

A control valve is defined as a valve that when closed does not leave an alternate open flow path to a system. A sectionalizing valve is defined as a valve that when closed does not prevent an alternate open flow path to a system and hence does not make the fire suppression water system inoperable. Under certain situations, the closure of a sectionalizing valve followed by the closure of a second valve will not leave an open flow path to one of the specified systems. In this instance, Action Statement b of Specification 3.7.9.1 is applicable.

Manual actuation of CO_2 fire suppression systems provides adequate fire protection for the protected areas based on operable fire detection in the area, low combustible loadings, and prompt fire brigade response to alarms.

Many of the action statements take credit for operable fire detection in lieu of a fire watch when a fire protection system in inoperable. Operable fire detection provides sufficient early warning capability of a fire to the appropriate Control Room.

During Surveillance Testing of a Low Pressure CO_2 System with the system inoperable, the requirement for a continuous fire watch may be suspended during portions of the test which result or may result in a discharge into the CO_2 protected area. Similarly, if a CO_2 actuation occurs which results in the need to have the Low Pressure CO_2 System made inoperable, the requirement for a continuous fire watch may be suspended. In either case, the area affected shall be restored to habitability as soon as practicable, after which the continuous fire watch is to be re-established if the system is still inoperable.

3/4.7.10 FIRE RATED ASSEMBLIES

The OPERABILITY of the fire barriers and barrier penetrations ensures that fire damage will be limited. These design features minimize the possibility of a single fire involving more than one fire area prior to detection and extinguishment. The fire barriers and fire barrier penetration sealing devices are periodically inspected to verify their OPERABILITY. The functional testing of the fire dampers is provided to ensure that the dampers remain functional. The ventilation seals are seals around ventilation duct work penetrating fire barriers. It is not our intent to rely on backup systems or other compensatory measures for an extended period of time and action will be taken to restore the inoperable portions of the fire rated assembly to OPERABLE status within a reasonable period.

For the purpose of determining OPERABILITY, an OPERABLE fire rated assembly/ sealing device is one that is capable of performing its intended safety function.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO.131 TO FACILITY OPERATING LICENSE NO. DPR-58

AND AMENDMENT NO.116 TO FACILITY OPERATING LICENSE NO. DPR-74

INDIANA MICHIGAN POWER COMPANY

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

DOCKETS NOS. 50-315 AND 50-316

1.0 INTRODUCTION

By letter dated May 30, 1986, the Indiana Michigan Power Company (the licensee) requested approval of amendments to the Donald C. Cook Units 1 and 2 Plant Technical Specifications. The proposed changes reflect the alternate safe shutdown requirements of Appendix R to 10 CFR Part 50. Specifically, safe shutdown following a fire is achieved via unit cross ties for the essential service water, component cooling water, auxiliary feedwater, and the chemical and volume control systems. The amendments would establish additional operability and surveillance requirements for these systems because of the reliance on sharing to ensure post-fire safe shutdown. The licensee also requested a change in the technical specifications associated with maintaining an excore neutron instrument channel available.

By letter dated June 23, 1986, the licensee submitted a revision which clarifies the applicability of Specification 3.0.4 to the alternate shutdown capability and proposes the implementation of fire watches in the unit for which alternate shutdown capability is unavailable. By letter dated March 2, 1988, the licensee requested approval of the technical specification amendments to restore a paragraph in the Bases pertaining to fire suppression systems which was inadvertently deleted previously. These three submittals were revised and combined into a simple submittal dated June 16, 1988. The major difference between the June 16, 1988, submittal and the previous submittals was a change in the action statements. The action statement of the previous submittal required the licensee to submit a report to the NRC if equipment for post-fire safe shutdown was out of service for more than 30 days. In the June 16, 1988 submittal, the action statement was revised to require that at least one flow path be restored to operable status within 7 days, or provide equivalent shutdown capability and return at least one flow path to available status within the next 60 days. The June 16, 1988, submittal also included a proposed change to the Bases which clarified that fire watches would not be implemented in areas protected by carbon dioxide fire suppression systems during testing of the systems which may result in carbon dioxide discharge, or after the discharge of a system when carbon dioxide levels may represent a personnel hazard.

The June 16, 1988 submittal was revised by a letter dated January 23, 1989. The proposed change involves removing two of the four reactor coolant system (RCS) wide range hot leg and cold leg temperature indications from the local shutdown indication (LSI) panels.

2.0 DISCUSSION

The licensee's approach to post-fire safe shutdown capability relies upon the availability of the above referenced systems from the non-fire-affected unit through unit cross-ties. The proposed technical specification changes require portions of these shared systems to be operable regardless of that unit's operating status, as long as the opposite unit is in Mode 1, 2, 3, or 4 (except for the auxiliary feedwater, which is required to operable in Mode 1, 2, and 3 only). This would ensure the availability of minimum post-fire safe shutdown capability during all operating modes. The proposed change identified the applicable limiting condition for operating including the action statement and surveillance requirements. The other changes proposed in the licensee's May 30 and June 23, 1986 letters pertain to maintaining an excore neutron instrument channel available. This is a new instrument in each unit which will indicate neutron level over all power ranges. It is powered from the opposite unit and has read-out capability remote to the control room.

The licensee's March 2, 1988, proposed change would restore a paragraph in the Bases under fire suppression systems that had been inadvertently deleted. The deleted portion addressed the situation in which low pressure carbon dioxide fire suppression system is isolated for personnel protection to permit entry for maintenance and other activities and stipulates the qualifications of the fire watch patrol that must be implemented when the fire suppression system is deactivated.

In their June 16, 1988, submittal, the licensee revised the proposed action statement for systems required for post-fire safe shutdown to require that at least one flow path be restored to operable status within 7 days, or provide equivalent shutdown capability and return at least one flow path to available status within the next 60 days. If this cannot be accomplished, the affected unit must be in hot standby within the next 12 hours and in hot shutdown within the following 24 hours.

A revision to the June 16, 1988 submittal was provided in a letter dated January 23, 1989. The proposed change involves removing the wide range hot leg and cold leg temperature indications of RCS loops 1 and 3 from the local shutdown indication (LSI) panels. The wide range hot leg and cold leg temperature indications of reactor coolant system loops 2 and 4 would still be supplied to the LSI panels. As discussed in the next section, this change is necessary in order to meet the Category 1 redundancy criteria of Regulatory Guide 1.97, Revision 3 for the reactor vessel level indication system (RVLIS).

3.0 EVALUATION

In its safety evaluation concerning Appendix R compliance dated November 22, 1983, the staff accepted the licensee's concept of relying upon the safe shutdown systems in the opposite (fire unaffected) unit to ensure required shutdown

functions provided that acceptable technical specifications were developed and implemented to ensure that these systems would be available in the event of a fire in one unit. The licensee's proposed amendments address the operability of those shared systems relied upon for post-fire safe shutdown in the necessary plant operating modes. In addition, the surveillance requirements and 7-day action statement are consistent with the guidance in the Standard Technical Specifications and past precedent for post-fire safe shutdown systems. The staff concludes, therefore, that shutdown systems are acceptable.

With regard to the proposed technical specification change concerning maintaining operability of an excore neutron instrument channel independent of the control room, the staff finds this change acceptable as this instrument satisfies the post-fire alternate shutdown criteria for monitoring reactivity.

With regard to the change to the Bases pertaining to the testing of the carbon dioxide fire suppression system, the staff agrees that the presence of a fire watch in areas where carbon dioxide could be or has been discharged represents a personnel hazard. Therefore, eliminating the need for a fire watch during these occasions is considered acceptable.

With regard to the licensee's March 2, 1988 letter, the proposed change would merely restore language that had originally been part of the Bases but had been inadvertently removed. The revised wording permits deactivation of the carbon dioxide fire suppression system for personnel protection when entry into the area of coverage is required provided an appropriate alternative fire watch is posted. The staff concludes that this proposed change is consistent with staff fire protection guidelines and is, therefore, acceptable.

Wide range hot leg and cold leg temperature are necessary safe shutdown indications because the difference between the temperatures is used by operators to verify natural circulation. Currently, all eight RTD's (one hotleg and one cold leg per loop) are powered by a single diesel backed bus.

Indication from RTD's on RCS loops 1 and 4 are available at LSI-5 and LSI-4. Indication from RTD's for RCS loop 2 and 3 are available at LSI-6 and LSI-4. RTD's for RCS loops 1 and 3 provide an output signal to RVLIS as well as to the LSI panels. In order to meet the Regulatory Guide 1.97 requirements for RVLIS, the RTD outputs from RCS loops 1 and 3 would no longer be supplied for LSI and the RTD's would be powered by independent control room instrument distribution (CRID) panels. RTD's for loops 2 and 4 will remain powered from a single diesel-backed bus. The change will eliminate the redundancy of wide range temperature indication on LSI-5 and LSI-6 and reduce the number of indications on LSI-4 from four to two. Thus, wide range temperature indication would be available for either loop 2 or loop 4 in the event of a single fire. The staff has reviewed the licensee's justification for the proposed change and concurs that the change does not have significant impact on 10 CFR 50 Appendix R compliance or plant safety.

Based on the above evaluation, the staff concludes that the licensee's technical specification changes regarding post-fire safe shutdown systems availability and carbon dioxide suppression system operability as delineated in letters dated May 30 and June 23, 1986, and March 2, 1988, and as amended by

letter dated June 16, 1988 are consistent with staff fire protection guidelines and are, therefore, acceptable. The revision proposed in a letter dated January 23, 1989 is also acceptable.

4.0 ENVIRONMENTAL CONSIDERATION

These amendments involve a change in requirements with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes to 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 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 this amendment.

5.0 CONCLUSION

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

Date: February 9, 1990

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