April 5, 1991

Docket Nos. 50-315 and 50-316

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

Dear Mr. Fitzpatrick:

SUBJECT: AMENDMENT NOS.153 AND137 TO FACILITY OPERATING LICENSE NOS. DPR-58 AND DPR-74: (TAC NOS. 73272 AND 73273)

The Commission has issued the enclosed Amendment No.153 to Facility Operating License No. DPR-58 and Amendment No.137 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 (TS) in response to your application dated March 14, 1989.

These amendments make editorial and technical changes to Technical Specification 3/4.3.2.1. "Engineered Safety Feature Actuation System Instrumentation," with respect to surveillance requirements for manual actuation circuitry. They also add a definition for "Trip Activating Device Operational Test" to Section 1.0 of the TS which also is incorporated as an additional surveillance requirement in Table 4.3.2. Also, as requested by your staff per telephone on December 4, 1990, we are making non-substantive changes to the format for certain tables. Tables 3.3-3 and 3.3-4 for Unit 1 and Table 3.3-4 for Unit 2 are being rotated 90 degrees. Additionally, Tables 3.3-4 and 3.3-5 for Unit 1 will use written words rather than mathematical symbols. These changes are non-substantive and consistent with the format of other Tables for both Units.

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

Sincerely,

/s/

Timothy Colburn, Sr. Project Manager
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures: See Reports
1. Amendment No.153 to DPR-58
2. Amendment No.137 to DPR-74
3. Safety Evaluation

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*LA/PD31:DRP345	*PM/PD31:DRP345	*D/PD31:DRP345	*ICSB	*OGC
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SMeador	ACRS(10)

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: AMENDMENT NOS. AND TO FACILITY OPERATING LICENSE NOS. DPR-58 AND DPR-74: (TAC NOS. 73272 AND 73273)

The Commission has issued the enclosed Amendment No. to Facility Operating License No. DPR-58 and Amendment No. 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 (TS) in response to your application dated March 14, 1989.

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Sincerely,

Timothy Colburn, Sr. Project Manager
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

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

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April 5, 1991

Docket Nos. 50-315 and 50-316

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

Dear Mr. Fitzpatrick:

SUBJECT: AMENDMENT NOS.153 AND137 TO FACILITY OPERATING LICENSE NOS. DPR-58 AND DPR-74: (TAC NOS. 73272 AND 73273)

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Sincerely,

/s/

Timothy Colburn, Sr. Project Manager
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

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12/14/90	12/13/90	01/14/91	01/09/91	01/17/91

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

April 5, 1991

Docket Nos. 50-315 and 50-316

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

Dear Mr. Fitzpatrick:

SUBJECT: AMENDMENT NOS. 153 AND 137 TO FACILITY OPERATING LICENSE NOS. DPR-58 AND DPR-74: (TAC NOS. 73272 AND 73273)

The Commission has issued the enclosed Amendment No. 153 to Facility Operating License No. DPR-58 and Amendment No. 137 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 (TS) in response to your application dated March 14, 1989.

These amendments make editorial and technical changes to Technical Specification 3/4.3.2.1. "Engineered Safety Feature Actuation System Instrumentation," with respect to surveillance requirements for manual actuation circuitry. They also add a definition for "Trip Activating Device Operational Test" to Section 1.0 of the TS which also is incorporated as an additional surveillance requirement in Table 4.3.2. Also, as requested by your staff per telephone on December 4, 1990, we are making non-substantive changes to the format for certain tables. Tables 3.3-3 and 3.3-4 for Unit 1 and Table 3.3-4 for Unit 2 are being rotated 90 degrees. Additionally, Tables 3.3-4 and 3.3-5 for Unit 1 will use written words rather than mathematical symbols. These changes are non-substantive and consistent with the format of other Tables for both Units.

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

Sincerely,

Timothy G. Colburn

Timothy Colburn, Sr. Project Manager
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 153 to DPR-58
2. Amendment No. 137 to DPR-74
3. Safety Evaluation

cc w/enclosures:
See next page

Mr. Gene Fitzpatrick
Indiana Michigan Power Company

Donald C. Cook Nuclear Plant

cc:

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Monitoring Section Office
Division of Radiological Health
Department of Public Health
3500 N. Logan Street
Post Office Box 30035
Lansing, Michigan 48909

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. 153
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 March 14, 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. 153, 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

L B Marsh

L. B. Marsh, Director
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 5, 1991

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. 137
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 March 14, 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. 137, 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

L. B. Marsh, Director
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 5, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 153

TO 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
1-7	1-7
3/4 3-15	3/4 3-15
3/4 3-16 through 3/4 3-21a	3/4 3-16 through 3/4 3-21a
-	3/4 3-21b
3/4 3-23	3/4 3-23
-	3/4 3-23a
3/4 3-24 through 3/4 3-26a	3/4 3-24 through 3/4 3-26a
-	3/4 3-26b
3/4 3-27	3/4 3-27
3/4 3-31 through 3/4 3-33a	3/4 3-31 through 3/4 3-33a
-	3/4 3-33b

MEMBER(S) OF THE PUBLIC

1.35 MEMBER(S) OF THE PUBLIC shall include all persons who are not occupationally associated with the plant. This category does not include employees of the utility, its contractors or its vendors. Also excluded from this category are persons who enter the site to service equipment or to make deliveries. This category does include persons who use portions of the site for recreational, occupational or other purposes not associated with the plant.

SITE BOUNDARY

1.36 The SITE BOUNDARY shall be that line beyond which the land is not owned, leased or otherwise controlled by the licensee.

UNRESTRICTED AREA

1.37 An UNRESTRICTED AREA shall be any area at or beyond the SITE BOUNDARY to which access is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials or any area within the site boundary used for residential quarters or industrial, commercial, institutional and/or recreational purposes.

ALLOWABLE POWER LEVEL (APL)

1.38 APL means "allowable power level" which is that power level less than or equal to 100% RATED THERMAL POWER, at which the plant may be operated to ensure that power distribution limits are satisfied.

CORE OPERATING LIMITS REPORT (COLR)

1.39 The COLR is the unit-specific document that provides core operating limits for the current operating reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Specification 6.9.1.11. Unit operation within these operating limits is addressed in individual specifications.

TRIP ACTUATING DEVICE OPERATIONAL TEST

1.40 A TRIP ACTUATING DEVICE OPERATIONAL TEST shall consist of operating the Trip Actuating Device and verifying OPERABILITY of alarm, interlock, and/or trip functions. The TRIP ACTUATING DEVICE OPERATIONAL TEST shall include adjustment, as necessary, of the Trip Actuating Device such that it actuates at the required setpoint within the required accuracy.

3/4.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2.1 The Engineered Safety Feature Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4 and with RESPONSE TIMES as shown in Table 3.3-5.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

a. With an ESFAS instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3-4, declare the channel inoperable and apply the applicable ACTION requirement of Table 3.3-3 until the channel is restored to OPERABLE status with the trip setpoint adjusted consistent with the Trip Setpoint value.

b. With an ESFAS instrumentation channel inoperable, take the ACTION shown in Table 3.3-3.

SURVEILLANCE REQUIREMENTS

4.3.2.1.1 Each ESFAS instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION, CHANNEL FUNCTIONAL TEST and TRIP ACTUATING DEVICE OPERATIONAL TEST operations for the MODES and at the frequencies shown in Table 4.3-2.

4.3.2.1.2 The logic for the interlocks shall be demonstrated OPERABLE during the automatic actuation logic test. The total interlock function shall be demonstrated OPERABLE at least once per 18 months during CHANNEL CALIBRATION testing of each channel affected by interlock operation.

4.3.2.1.3 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be demonstrated to be within the limit at least once per 18 months. Each test shall include at least one logic train such that both logic trains are tested at least once per 36 months and one channel per function such that all channels are tested at least once per N times 18 months where N is the total number of redundant channels in a specific ESFAS function as shown in the "Total No. of Channels" Column of Table 3.3-3.

TABLE 3.3-3

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
1. SAFETY INJECTION, TURBINE TRIP, FEEDWATER ISOLATION, AND MOTOR DRIVEN FEEDWATER PUMPS					
a. Manual Initiation	See Functional Unit 9				
b. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13
c. Containment Pressure-High	3	2	2	1, 2, 3	14*
d. Pressurizer Pressure-Low	3	2	2	1, 2, 3#	14*
e. Differential Pressure Between Steam Lines-High					
Four Loops Operating	3/steam line	2/steam line any steam line	2/steam line	1, 2, 3##	14*
Three Loops Operating	3/operating steam line	1####/ steam line, any operating steam line	2/operating steam line	3##	15

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
f. Steam Flow in Two Steam Lines-High					
Four Loops Operating	2/steam line	1/steam line any 2 steam lines	1/steam line	1, 2, 3##	14*
Three Loops Operating	2/operating steam line	1###/any operating steam line	1/operating steam line	3##	15
COINCIDENT WITH EITHER					
T_{avg}--Low-Low					
Four Loops Operating	1 T_{avg}/loop	2 T_{avg} any loops	1 T_{avg} any 3 loops	1, 2, 3##	14*
Three Loops Operating	1 T_{avg}/ operating loop	1### T_{avg} in any operating loop	1 T_{avg} in any two operating loops	3##	15
OR, COINCIDENT WITH					
Steam Line Pressure-Low					
Four Loops Operating	1 pressure/ loop	2 pressures any loops	1 pressure any 3 loops	1, 2, 3##	14*
Three Loops Operating	1 pressure/ operating loop	1### presssure in any operating loop	1 pressure in any 2 operating loops	3##	15

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
2. CONTAINMENT SPRAY					
a. Manual	---------- See Functional Unit 9 ----------				
b. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13
c. Containment Pressure--High-High	4	2	3	1, 2, 3	16

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
3. CONTAINMENT ISOLATION					
a. Phase "A" Isolation					
1) Manual	See Functional Unit 9				
2) From Safety Injection Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13
b. Phase "B" Isolation					
1) Manual	See Functional Unit 9				
2) Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13
3) Containment Pressure--High-High	4	2	3	1, 2, 3	16
. Purge and Exhaust Isolation					
1) Manual	See Functional Unit 9				
2) Containment Radioactivity-High Train A (VRS-1101, ERS-1301, ERS-1305)*	3	1	2	1, 2, 3, 4	17
3) Containment Radioactivity-High Train B (VRS-1201, ERS-1401, ERS-1405)*	3	1	2	1, 2, 3, 4	17

*This specification only applies during purge.

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
4. STEAM LINE ISOLATION					
a. Manual	---------- See Functional Unit 9 ----------				
b. Automatic Actuation Logic	2	1	2	1, 2, 3	13
c. Containment Pressure --High-High	4	2	3	1, 2, 3	16
d. Steam Flow in Two Steam Lines--High					
Four Loops Operating	2/steam line	1/steam line any 2 steam lines	1/steam line	1, 2, 3##	14*
Three Loops Operating	2/operating steam line	1###/any operating steam line	1/ operating steam line	3##	15

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
COINCIDENT WITH EITHER					
T_{avg} -- Low-Low					
Four Loops Operating	1 T_{avg}/loop	2 T_{avg} any loops	1 T_{avg} any 3 loops	1, 2, 3##	14*
Three Loops Operating	1 T_{avg}/ operating loop	1### T_{avg} in any operating loop	1 T_{avg} in any two operating loops	3##	15
OR, COINCIDENT WITH					
Steam Line Pressure-Low					
Four Loops Operating	1 pressure/ loop	2 pressures any loops	1 pressure any 3 loops	1, 2, 3##	14*
Three Loops Operating	1 pressure/ operating loop	1### pressure in any operating loop	1 pressure in any 2 operating loops	3##	15
5. TURBINE TRIP & FEEDWATER ISOLATION					
a. Steam Generator Water Level--High-High	3/loop	2/loop in any operating loop	2/loop in each operating loop	1,2,3	14*

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
6. MOTOR DRIVEN AUXILIARY FEEDWATER PUMPS					
a. Steam Generator Water Level--Low-Low	3/Stm. Gen.	2/Stm. Gen. any Stm. Gen.	2/Stm. Gen.	1,2,3	14*
b. 4 kv Bus Loss of Voltage	3/Bus	2/Bus	2/Bus	1,2,3	14*
Pump Start		2/bus (T11A-Train B; T11D-Train A)			
Valve Actuation (Both trains)		2/bus on (T11A & T11B or 2/busses T11C & T11D)			
c. Safety Injection	2	1	2	1, 2, 3	18*
d. Loss of Main Feedwater Pumps	2	2	2	1, 2	18*
7. TURBINE DRIVEN AUXILIARY FEEDWATER PUMPS					
a. Steam Generator Water Level--Low-Low	3/Stm. Gen.	2/Stm. Gen. any 2 Stm.Gen.	2/Stm. Gen.	1, 2, 3	14*
b. Reactor Coolant Pump Bus Undervoltage	4-1/Bus	2	3	1, 2, 3	19*
8. LOSS OF POWER					
a. 4 kv Bus Loss of Voltage	3/Bus	2/Bus	2/Bus	1, 2, 3, 4	14*
b. 4 kv Bus Degraded Voltage	3/Bus	2/Bus	2/Bus	1, 2, 3, 4	14*

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
9. MANUAL					
a. Safety Injection (ECCS) Feedwater Isolation Reactor Trip (SI) Containment Isolation - Phase "A" Containment Purge and Exhaust Isolation Auxiliary Feedwater Pumps Essential Service Water System	2/train	1/train	2/train	1, 2, 3, 4	18
b. Containment Spray Containment Isolation - Phase "B" Containment Purge and Exhaust Isolation Containment Air Recirculation Fan	1/train	1/train	1/train	1, 2, 3, 4	18
c. Containment Isolation - Phase "A" Containment Purge and Exhaust Isolation	1/train	1/train	1/train	1, 2, 3, 4	18
d. Steam Line Isolation	2/steam line (1 per train)	2/steam line (1 per train)	2/operating steam line (1 per train)	1, 2, 3	20

TABLE 3.3-3 (Continued)

ACTION 17 - With less than the Minimum Channels OPERABLE, operation may continue provided the containment purge and exhaust valves are maintained closed.

ACTION 18 - With the number of OPERABLE Channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION 19 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

a. The inoperable channel is placed in the tripped condition within 1 hour.

b. The Minimum Channels OPERABLE requirement is met; however, one additional channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.2.1.

ACTION 20 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or declare the associated valve inoperable and take the ACTION required by Specification 3.7.1.5.

ENGINEERED SAFETY FEATURES INTERLOCKS

DESIGNATION	CONDITION AND SETPOINT	FUNCTION
P-11	With 2 of 3 pressurizer pressure channels greater than or equal to 1915 psig.	P-11 prevents or defeats manual block of safety injection actuation on low pressurizer pressure.
P-12	With 2 of 4 T_{avg} channels less than or equal to Setpoint. Setpoint greater than or equal to 541°F	P-12 allows the manual block of safety injection from high steam flow coincident with either low steam line pressure or low-low T_{avg}. P-12 in coincidence with high steam flow will result in a steam line isolation. P-12 affects steam dump blocks. With 3 of 4 T_{avg} channels above the reset value, the manual block of safety injection from high steam flow coincident with either low steam line pressure or low-low T_{avg} is prevented or defeated.

TABLE 3.3-4

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
1. SAFETY INJECTION, TURBINE TRIP, FEEDWATER ISOLATION, AND MOTOR DRIVEN FEEDWATER PUMPS		
a. Manual Initiation	---------- See Functional Unit 9 ----------	
b. Automatic Actuation Logic	Not Applicable	Not Applicable
c. Containment Pressure--High	Less than or equal to 1.1 psig	Less than or equal to 1.2 psig
d. Pressurizer Pressure--Low	Greater than or equal to 1815 psig	Greater than or equal to 1805 psig
e. Differential Pressure Between Steam Lines--High	Less than or equal to 100 psi	Less than or equal to 112 psi
f. Steam Flow in Two Steam Lines--High Coincident with Tavg --Low-Low or Steam Line Pressure--Low	Less than or equal to 1.42×10^6 lbs/hr from 0% load to 20% load. Linear from 1.42×10^6 lbs/hr at 20% load to 3.88×10^6 lbs/hr at 100% load	Less than or equal to 1.56×10^6 lbs/hr from 0% load to 20% load. Linear from 1.56×10^6 lbs/hr at 20% load to 3.93×10^6 lbs/hr at 100% load
	T_{avg} greater than or equal to 541°F greater than or equal to 500 psig steam line pressure	T_{avg} greater than or equal to 539°F greater than or equal to 480 psig steam line pressure

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
2. CONTAINMENT SPRAY		
a. Manual Initiation	---------- See Functional Unit 9 ----------	
b. Automatic Actuation Logic	Not Applicable	Not Applicable
c. Containment Pressure--High-High	Less than or equal to 2.9 psig	Less than or equal to 3 psig
3. CONTAINMENT ISOLATION		
a. Phase "A" Isolation		
1. Manual	---------- See Functional Unit 9 ----------	
2. From Safety Injection Automatic Actuation Logic	Not Applicable	Not Applicable
b. Phase "B" Isolation		
1. Manual	---------- See Functional Unit 9 ----------	
2. Automatic Actuation Logic	Not Applicable	Not Applicable
3. Containment Pressure--High-High	Less than or equal to 2.9 psig	Less than or equal to 3 psig
c. Purge and Exhaust Isolation		
1. Manual	---------- See Functional Unit 9 ----------	

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
2. Containment Radioactivity--High Train A (VRS-1101, ERS-1301, ERS-1305)	See Table 3.3-6	Not Applicable
3. Containment Radioactivity--High Train B (VRS-1201, ERS-1401, ERS-1405)	See Table 3.3-6	Not Applicable
4. STEAM LINE ISOLATION		
a. Manual	---------- See Functional Unit 9 ----------	
b. Automatic Actuation Logic	Not Applicable	Not Applicable
c. Containment Pressure--High-High	Less than or equal to 2.9 psig	Less than or equal to 3 psig
d. Steam Flow in Two Steam Lines--High Coincident with T_{avg}--Low-Low or Steam Line Pressure--Low	Less than or equal to 1.42×10^6 lbs/hr from 0% load to 20% load. Linear from 1.42×10^6 lbs/hr at 20% load to 3.88×10^6 lbs/hr at 100% load.	Less than or equal to 1.56×10^6 lbs/hr from 0% load to 20% load. Linear from 1.56×10^6 lbs/hr at 20% load to $3.93\ 10^6$ lbs/hr at 100% load.
	T_{avg} greater than or equal to 541°F	T_{avg} greater than or equal to 539°F
	Greater than or equal to 500 psig steam line pressure	Greater than or equal to 480 psig steam line pressure
5. TURBINE TRIP AND FEEDWATER ISOLATION		
a. Steam Generator Water Level--High-High	Less than or equal to 67% of narrow-range instrument span each steam generator	Less than or equal to 68% of narrow-range instrument span each steam generator

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
6. MOTOR DRIVEN AUXILIARY FEEDWATER PUMPS		
a. Steam Generator Water Level--Low-Low	Greater than or equal to 17% of narrow-range instrument span each steam generator	Greater than or equal to 16% of narrow-range instrument span each steam generator
b. 4 kv Bus Loss of Voltage	3280 volts with a 2-second delay	3280 ± 120 volts with a 2 ± .2 second delay
c. Safety Injection	Not Applicable	Not Applicable
d. Loss of Main Feedwater Pumps	Not Applicable	Not Applicable
7. TURBINE DRIVEN AUXILIATY FEEDWATER PUMPS		
a. Steam Generator Water Level--Low-Low	Greater than or equal to 17% of narrow-range instrument span each steam generator	Greater than or equal to 16% of narrow-range instrument span each steam generator
b. Reactor Coolant Pump Bus Undervoltage	Greater than or equal 2750 Volts--each bus	Greater than or equal to 2725 Volts--each bus
8. LOSS OF POWER		
a. 4 kv Bus Loss of Voltage	3280 volts with a 2-second delay	3280 ± 120 volts with a 2 ± .2 second delay
b. 4 kv Bus Degraded Voltage	3638 volts with a 2.0 min. time delay	3638 ± 60 volts with a 2.0 minute ± 6 second time delay

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
9. Manual		
a. Safety Injection (ECCS)	N.A.	N.A.
Feedwater Isolation	N.A.	N.A.
Reactor Trip (SI)	N.A.	N.A.
Containment Isolation - Phase "A"	N.A.	N.A.
Containment Purge and Exhaust Isolation	N.A.	N.A.
Auxiliary Feedwater Pumps	N.A.	N.A.
Essential Service Water System	N.A.	N.A.
b. Containment Spray	N.A.	N.A.
Containment Isolation - Phase "B"	N.A.	N.A.
Containment Purge and Exhaust Isolation	N.A.	N.A.
Containment Air Recirculation Fan	N.A.	N.A.
c. Containment Isolation - Phase "A"	N.A.	N.A.
Containment Purge and Exhaust Isolation	N.A.	N.A.
d. Steam Line Isolation	N.A.	N.A.

TABLE 3.3-5

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS
1. Manual	
a. Safety Injection (ECCS)	Not Applicable
Feedwater Isolation	Not Applicable
Reactor Trip (SI)	Not Applicable
Containment Isolation-Phase "A"	Not Applicable
Containment Purge and Exhaust Isolation	Not Applicable
Auxiliary Feedwater Pumps	Not Applicable
Essential Service Water System	Not Applicable
b. Containment Spray	Not Applicable
Containment Isolation-Phase "B"	Not Applicable
Containment Purge and Exhaust Isolation	Not Applicable
Containment Air Recirculation Fan	Not Applicable
c. Containment Isolation-Phase "A"	Not Applicable
Containment Purge and Exhaust Isolation	Not Applicable
d. Steam Line Isolation	Not Applicable
2. Containment Pressure-High	
a. Safety Injection (ECCS)	Less than or equal to 27.0*
b. Reactor Trip (from SI)	Less than or equal to 3.0
c. Feedwater Isolation	Less than or equal to 8.0
d. Containment Isolation-Phase "A"	Less than or equal to 18.0#/28.0##
e. Containment Purge and Exhaust Isolation	Not Applicable
f. Auxiliary Feedwater Pumps	Not Applicable
g. Essential Service Water System	Less than or equal to 13.0#/48.0##

TABLE 4.3-2

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. SAFETY INJECTION, TURBINE TRIP, FEEDWATER ISOLATION, AND MOTOR DRIVEN AUXILIARY FEEDWATER PUMPS					
a. Manual Initiation	---------- See Functional Unit 9 ----------				
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3, 4
c. Containment Pressure-High	S	R	M(3)	N.A.	1, 2, 3
d. Pressurizer Pressure-Low	S	R	M	N.A.	1, 2, 3
e. Differential Pressure Between Steam Lines--High	S	R	M	N.A.	1, 2, 3
f. Steam Flow in Two Steam Lines--High Coincident with Tavg --Low or Steam Line Pressure--Low	S	R	M	N.A.	1, 2, 3
2. CONTAINMENT SPRAY					
a. Manual Initiation	---------- See Functional Unit 9 ----------				
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3, 4
c. Containment Pressure-High-High	S	R	M(3)	N.A.	1, 2, 3

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURED ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
3. CONTAINMENT ISOLATION					
a. Phase "A" Isolation					
1) Manual	See Functional Unit 9				
2) From Safety Injection Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3, 4
b. Phase "B" Isolation					
1) Manual	See Functional Unit 9				
2) Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3, 4
3) Containment Pressure-High-High	S	R	M(3)	N.A.	1, 2, 3
c. Purge and Exhaust Isolation					
1) Manual	See Functional Unit 9				
2) Containment Radioactivity-High	S	R	M	N.A.	1, 2, 3, 4

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURED ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
4. STEAM LINE ISOLATION					
a. Manual	----------	----------	See Functional Unit 9	----------	----------
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3
c. Containment Pressure--High-High	S	R	M(3)	N.A.	1, 2, 3
d. Steam Flow in Two Steam Lines--High Coincident with Tavg--Low-Low Pressure--Low	S	R	M	N.A.	1, 2, 3
5. TURBINE TRIP AND FEEDWATER ISOLATION					
a. Steam Generator Water Level--High-High	S	R	M	N.A.	1, 2, 3
6. MOTOR DRIVEN AUXILIARY FEEDWATER PUMPS					
a. Steam Generator Water Level--Low-Low	S	R	M	N.A.	1, 2, 3
b. 4 kv Bus Loss of Voltage	S	R	M	N.A.	1, 2, 3
c. Safety Injection	N.A.	N.A.	M(2)	N.A.	1, 2, 3
d. Loss of Main Feed Pumps	N.A.	N.A.	R	N.A.	1, 2

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
7. TURBINE DRIVEN AUXILIARY FEEDWATER PUMPS					
a. Steam Generator Water Level--Low-Low	S	R	M	N.A.	1, 2, 3
b. Reactor Coolant Pump Bus Undervoltage	N.A.	R	M	N.A.	1, 2, 3
8. LOSS OF POWER					
a. 4 kv Bus Loss of Voltage	S	R	M	N.A.	1, 2, 3, 4
b. 4 kv Bus Degraded Voltage	S	R	M	N.A.	1, 2, 3, 4

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
9. Manual					
a. Safety Injection (ECCS) Feedwater Isolation Reactor Trip (SI) Containment Isolation-Phase "A" Containment Purge and Exhaust Isolation Auxiliary Feedwater Pumps Essential Service Water System	N.A.	N.A.	N.A.	R	1, 2, 3, 4
b. Containment Spray Containment Isolation-Phase "B" Containment Purge and Exhaust Isolation Containment Air Recirculation Fan	N.A.	N.A.	N.A.	R	1, 2, 3, 4
c. Containment Isolation-Phase "A" Containment Purge and Exhaust Isolation	N.A.	N.A.	N.A.	R	1, 2, 3, 4
d. Steam Line Isolation	N.A.	N.A.	M(1)	R	1, 2, 3

ATTACHMENT TO LICENSE AMENDMENT NO. 137

TO FACILITY OPERATING LICENSE NO. DPR-74

DOCKETS 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
1-8	1-8
3/4 3-14 though 3/4 3-21	3/4 3-14 through 3/4 3-21
3/4 3-21a	-
3/4 3-22	3/4 3-22
-	3/4 3-22a
3/4 3-23 through 3/4 3-25	3/4 3-23 through 3/4 3-25
-	3/4 3-25b
3/4 3-26	3/4 3-26
3/4 3-30 through 3/4 3-32	3/4 3-30 through 3/4 3-32

MEMBER(S) OF THE PUBLIC

1.35 MEMBER(S) OF THE PUBLIC shall include all persons who are not occupationally associated with the Plant. This category does not include employees of the utility, its contractors or its vendors. Also excluded from this category are persons who enter the site to service equipment or to make deliveries. This category does include persons who use portions of the site for recreational, occupational or other purposes not associated with the Plant.

SITE BOUNDARY

1.36 The SITE BOUNDARY shall be that line beyond which the land is not owned, leased or otherwise controlled by the licensee.

UNRESTRICTED AREA

1.37 An UNRESTRICTED AREA shall be any area at or beyond the SITE BOUNDARY to which access is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials or any area within the site boundary used for residential quarters or industrial, commercial, institutional and/or recreational purposes.

ALLOWABLE POWER LEVEL (APL)

1.38 APL means "allowable power level" which is that power level, less than or equal to 100% RATED THERMAL POWER, at which the plant may be operated to ensure that power distribution limits are satisfied.

CORE OPERATING LIMITS REPORT (COLR)

1.39 The COLR is the unit-specific document that provides core operating limits for the current operating reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Specification 6.9.1.11. Unit operation within these operating limits is addressed in individual specifications.

TRIP ACTUATING DEVICE OPERATIONAL TEST

1.40 A TRIP ACTUATING DEVICE OPERATIONAL TEST shall consist of operating the Trip Actuating Device and verifying OPERABILITY of alarm, interlock, and/or trip functions. The TRIP ACTUATING DEVICE OPERATIONAL TEST shall include adjustment, as necessary, of the Trip Actuating Device such that it actuates at the required setpoint within the required accuracy.

3/4.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2.1 The Engineered Safety Feature Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4 and with RESPONSE TIMES as shown in Table 3.3-5.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

a. With an ESFAS instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3-4, declare the channel inoperable and apply the applicable ACTION requirement of Table 3.3-3 until the channel is restored to OPERABLE status with the trip setpoint adjusted consistent with the Trip Setpoint value.

b. With an ESFAS instrumentation channel inoperable, take the ACTION shown in Table 3.3-3.

SURVEILLANCE REQUIREMENTS

4.3.2.1.1 Each ESFAS instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION, CHANNEL FUNCTIONAL TEST and TRIP ACTUATING DEVICE OPERATIONAL TEST operations for the MODES and at the frequencies shown in Table 4.3-2.

4.3.2.1.2 The logic for the interlocks shall be demonstrated OPERABLE during the automatic actuation logic test. The total interlock function shall be demonstrated OPERABLE at least once per 18 months during CHANNEL CALIBRATION testing of each channel affected by interlock operation.

4.3.2.1.3 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be demonstrated to be within the limit at least once per 18 months. Each test shall include at least one logic train such that both logic trains are tested at least once per 36 months and one channel per function such that all channels are tested at least once per N times 18 months where N is the total number of redundant channels in a specific ESFAS function as shown in the "Total No. of Channels" column of Table 3.3-3.

TABLE 3.3-3

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
1. SAFETY INJECTION, TURBINE TRIP, FEEDWATER ISOLATION, AND MOTOR DRIVEN AUXILIARY FEEDWATER PUMPS					
a. Manual Initiation	---------- See Functional Unit 9 ----------				
b. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13
c. Containment Pressure-High	3	2	2	1, 2, 3	14*
d. Pressurizer Pressure-Low	3	2	2	1, 2, 3#	14*
e. Differential Pressure Between Steam Lines-High					
Four Loops Operating	3/steam line	2/steam line any steam line	2/steam line	1, 2, 3##	14*
Three Loops Operating	3/operating steam line	1####/ steam line, any operating steam line	2/ operating steam line	3##	15
f. Steam Line Pressure-Low					
Four Loops Operating	1 pressure/ loop	2 pressures any loops	1 pressure any 3 loops	1, 2, 3##	14*
Three Loops Operating	1 pressure/ operating loop	1###/ pressure in any operating loop	1 pressure in any 2 operating loops	3##	15

TABLE 3.3-3 (Continued)
ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
2. CONTAINMENT SPRAY					
a. Manual	---------- See Functional Unit 9 ----------				
b. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13
c. Containment Pressure--High-High	4	2	3	1, 2, 3	16

TABLE 3.3-3 (Continued)
ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
3. CONTAINMENT ISOLATION					
a. Phase "A" Isolation					
1) Manual	See Functional Unit 9				
2) From Safety Injection Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13
b. Phase "B" Isolation					
1) Manual	See Functional Unit 9				
2) Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13
3) Containment Pressure--High-High	4	2	3	1, 2, 3	16
c. Purge and Exhaust Isolation					
1) Manual	See Functional Unit 9				
2) Containment Radioactivity-* High Train A (VRS-2101, ERS-2301, ERS-2305)	3	1	2	1, 2, 3, 4	17
3) Containment Radioactivity-* High Train B (VRS-2201, ERS-2401, ERS-2405)	3	1	2	1, 2, 3, 4	17

*This specification only applies during purge.

TABLE 3.3-3 (Continued)
ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
4. STEAM LINE ISOLATION					
a. Manual	---------- See Functional Unit 9 ----------				
b. Automatic Actuation Logic	2	1	2	1, 2, 3	13
c. Containment Pressure --High-High	4	2	3	1, 2, 3	16
d. Steam Flow in Two Steam Lines--High					
Four Loops Operating	2/steam line	1/steam line any 2 steam lines	1/steam line	1, 2, 3##	14*
Three Loops Operating	2/operating steam line	1###/any operating steam line	1/ operating steam line	3##	15
COINCIDENT WITH					
T_{avg} -- Low-Low					
Four Loops Operating	1 T_{avg}/ loop	2 T_{avg} any loops	1 T_{avg} any 3 loops	1, 2, 3##	14*
Three Loops Operating	1 T_{avg}/ operating loop	1### T_{avg} in any oper-ating loop	1 T_{avg} in any two oper-ating loops	3##	15

TABLE 3.3-3 (Continued)
ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
e. Steam Line Pressure-Low					
Four Loops Operating	1 pressure/loop	2 pressures any loops	1 pressure any 3 loops	1, 2, 3##	14*
Three Loops Operating	1 pressure/operating loop	1### pressure in any operating loop	1 pressure in any 2 operating loops	3##	15
5. TURBINE TRIP & FEEDWATER ISOLATION					
a. Steam Generator Water Level--High-High	3/loop	2/loop in any operating loop	2/loop in each operating loop	1, 2, 3	14*
6. MOTOR DRIVEN AUXILIARY FEEDWATER PUMPS					
a. Steam Generator Water Level--Low-Low	3/Stm. Gen.	2/Stm.Gen any Stm. Gen.	2/Stm. Gen.	1, 2, 3	14*
b. 4 kV Bus Loss of Voltage	3/Bus	2/Bus	2/Bus	1, 2, 3	14*
Pump Start		2/bus (T11A-Train B; T11D-Train A)			
Valve Actuation (Both trains)		2/bus on (T11A & T11B or 2 busses T11C & T11D)			
c. Safety Injection	2	1	2	1, 2, 3	18*
d. Loss of Main Feedwater Pumps	2	2	2	1, 2	18*

TABLE 3.3-3 (Continued)
ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
7. TURBINE DRIVEN AUXILIARY FEEDWATER PUMPS					
a. Steam Generator Water Level--Low-Low	3/Stm. Gen.	2/Stm. Gen. any 2 Stm.Gen.	2/Stm. Gen.	1, 2, 3	14*
b. Reactor Coolant Pump Bus Undervoltage	4-1/Bus	2	3	1, 2, 3	19*
8. LOSS OF POWER					
a. 4 kV Bus Loss of Voltage	3/Bus	2/Bus	2/Bus	1, 2, 3, 4	14*
b. 4 kV Bus Degraded Voltage	3/Bus	2/Bus	2/Bus	1, 2, 3, 4	14*
9. MANUAL					
a. Safety Injection (ECCS) Feedwater Isolation Reactor Trip (SI) Containment Isolation - Phase "A" Containment Purge and Exhaust Isolation Auxiliary Feedwater Pumps Essential Service Water System	2/train	1/train	2/train	1, 2, 3, 4	18
b. Containment Spray Containment Isolation - Phase "B" Containment Purge and Exhaust Isolation Containment Air Recirculation Fan	1/train	1/train	1/train	1, 2, 3, 4	18
c. Containment Isolation - Phase "A" Containment Purge and Exhaust Isolation	1/train	1/train	1/train	1, 2, 3, 4	18
d. Steam Line Isolation	2/steam line (1 per train)	2/steam line (1 per train)	2/operating steam line (1 per train)	1, 2, 3	20

TABLE 3.3-3 (Continued)
TABLE NOTATION

#Trip function may be bypassed in this MODE below P-11.

##Trip function may be bypassed in this MODE below P-12.

###The channel(s) associated with the protective functions derived from the out of service Reactor Coolant Loop shall be placed in the tripped mode.

####Manually trip all bistables which would be automatically tripped in the event pressure in the associated active loop were less than the pressure in the inactive loop. For example, if loop 1 is the inactive loop then the bistables which indicate low pressure in loops 2, 3, and 4 relative to loop 1 should be tripped.

*The provisions of Specification 3.0.4 are not applicable.

ACTION STATEMENTS

ACTION 13 - With the number of OPERABLE Channels one less than the Total Number of Channels, be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours; however, one channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.2.1.1.

ACTION 14 - With the number of OPERABLE Channels one less than the Total Number of Channels, operation may proceed until performance of the next required CHANNEL FUNCTIONAL TEST provided the inoperable channel is placed in the tripped condition within 1 hour.

ACTION 15 - With a channel associated with an operating loop inoperable, restore the inoperable channel to OPERABLE status within 2 hours or be in HOT SHUTDOWN within the following 12 hours; however, one channel associated with an operating loop may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.2.1.1.

ACTION 16 - With the number of OPERABLE Channels one less than the Total Number of Channels, operation may proceed provided the inoperable channel is placed in the bypassed condition and the Minimum Channels OPERABLE requirement is met; one additional channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.2.1.1.

TABLE 3.3-3 (Continued)

ACTION 17 - With less than the Minimum Channels OPERABLE, operation may continue provided the containment purge and exhaust valves are maintained closed.

ACTION 18 - With the number of OPERABLE Channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION 19 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

a. The inoperable channel is placed in the tripped condition within 1 hour.

b. The Minimum Channels OPERABLE requirement is met; however, one additional channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.2.1.

ACTION 20 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or declare the associated valve inoperable and take the ACTION required by Specification 3.7.1.5.

ENGINEERED SAFETY FEATURES INTERLOCKS

DESIGNATION	CONDITION AND SETPOINT	FUNCTION
P-11	With 2 of 3 pressurizer pressure channels greater than or equal to 2010 psig.	P-11 prevents or defeats manual block of safety injection actuation on low pressurizer pressure.
P-12	With 2 of 4 T_{avg} channels less than or equal to Setpoint. Setpoint greater than or equal to 541°F	P-12 allows manual block of safety injection actuation on low steam line pressure. Causes steam line isolation on high steam flow. Affects steam dump blocks. With 3 of 4 T_{avg} channels above the reset point, prevents or defeats the manual block of safety injection actuation on low steam line pressure.

TABLE 3.3-4

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINTS	ALLOWABLE VALUES
1. SAFETY INJECTION, TURBINE TRIP, FEEDWATER ISOLATION, AND MOTOR DRIVEN AUXILIARY FEEDWATER PUMPS		
a. Manual Initiation	---------- See Functional Unit 9 ----------	
b. Automatic Actuation Logic	Not Applicable	Not Applicable
c. Containment Pressure--High	Less than or equal to 1.1 psig	Less than or equal to 1.2 psig
d. Pressurizer Pressure--Low	Greater than or equal to 1900 psig	Greater than or equal to 1890 psig
e. Differential Pressure Between Steam Lines--High	Less than or equal to 100 psi	Less than or equal to 112 psi
f. Steam Line Pressure--Low	Greater than or equal to 600 psig steam line pressure	Greater than or equal to 585 psig steam line pressure

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINTS	ALLOWABLE VALUES
2. CONTAINMENT SPRAY		
a. Manual Initiation	---------- See Functional Unit 9 ----------	
b. Automatic Actuation Logic	Not Applicable	Not Applicable
c. Containment Pressure--High-High	Less than or equal to 2.9 psig	Less than or equal to 3.0 psig
3. CONTAINMENT ISOLATION		
a. Phase "A" Isolation		
1. Manual	---------- See Functional Unit 9 ----------	
2. From Safety Injection Automatic Actuation Logic	Not Applicable	Not Applicable
b. Phase "B" Isolation		
1. Manual	---------- See Functional Unit 9 ----------	
2. Automatic Actuation Logic	Not Applicable	Not Applicable
3. Containment Pressure-High-High	Less than or equal to 2.9 psig	Less than or equal to 3.0 psig
c. Purge and Exhaust Isolation		
1. Manual	---------- See Functional Unit 9 ----------	
2. Containment Radioactivity--High Train A (VRS-2101, ERS-2301, ERS-2305)	See Table 3.3-6	Not Applicable
3. Containment Radioactivity--High Train B (VRS-2201, ERS-2401, ERS-2405)	See Table 3.3-6	Not Applicable

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINTS	ALLOWABLE VALUES
4. STEAM LINE ISOLATION		
a. Manual	---------- See Functional Unit 9 ----------	
b. Automatic Actuation Logic	Not Applicable	Not Applicable
c. Containment Pressure--High-High	Less than or equal to 2.9 psig	Less than or equal to 3.0 psig
d. Steam Flow in Two Steam Lines--High Coincident with Tavg--Low-Low	Less than or equal to a function defined as follows: A Delta-p corresponding to 1.6×10^6 lbs/hr steam flow between 0% and 20% load and then a Delta-p increasing linearly to a Delta-p corresponding to 4.5×10^6 lbs/hr at full load.	Less than or equal to a function defined as follows: A Delta-p corresponding to 1.75×10^6 lbs/hr steam flow between 0% and 20% load and then a Delta-p increasing linearly to a Delta-p corresponding to to 4.55×10^6 lbs/hr at full load.
	T_{avg} greater than or equal to 541°F	T_{avg} greater than or equal to 539°F
e. Steam Line Pressure--Low	Greater than or equal to 600 psig steam line pressure	Greater than or equal to 585 psig steam line pressure
5. TURBINE TRIP AND FEEDWATER ISOLATION		
a. Steam Generator Water Level--High-High	Less than or equal to 67% of narrow range instrument span each steam generator	Less than or equal to 68% of narrow range instrument span each steam generator

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
9. Manual		
a. Safety Injection (ECCS)	N.A.	N.A.
Feedwater Isolation	N.A.	N.A.
Reactor Trip (SI)	N.A.	N.A.
Containment Isolation - Phase "A"	N.A.	N.A.
Containment Purge and Exhaust Isolation	N.A.	N.A.
Auxiliary Feedwater Pumps	N.A.	N.A.
Essential Service Water System	N.A.	N.A.
b. Containment Spray	N.A.	N.A.
Containment Isolation - Phase "B"	N.A.	N.A.
Containment Purge and Exhaust Isolation	N.A.	N.A.
Containment Air Recirculation Fan	N.A.	N.A.
c. Containment Isolation - Phase "A"	N.A.	N.A.
Containment Purge and Exhaust Isolation	N.A.	N.A.
d. Steam Line Isolation	N.A.	N.A.

TABLE 3.3-5

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS
1. Manual	
a. Safety Injection (ECCS)	Not Applicable
Feedwater Isolation	Not Applicable
Reactor Trip (SI)	Not Applicable
Containment Isolation-Phase "A"	Not Applicable
Containment Purge and Exhaust Isolation	Not Applicable
Auxiliary Feedwater Pumps	Not Applicable
Essential Service Water System	Not Applicable
b. Containment Spray	Not Applicable
Containment Isolation-Phase "B"	Not Applicable
Containment Purge and Exhaust Isolation	Not Applicable
Containment Air Recirculation Fan	Not Applicable
c. Containment Isolation-Phase "A"	Not Applicable
Containment Purge and Exhaust Isolation	Not Applicable
d. Steam Line Isolation	Not Applicable
2. Containment Pressure-High	
a. Safety Injection (ECCS)	Less than or equal to 27.0*
b. Reactor Trip (from SI)	Less than or equal to 3.0
c. Feedwater Isolation	Less than or equal to 8.0
d. Containment Isolation-Phase "A"	Not Applicable
e. Containment Purge and Exhaust Isolation	Not Applicable
f. Auxiliary Feedwater Pumps	Not Applicable
g. Essential Service Water System	Not Applicable

TABLE 4.3-2
ENGINEERED SAFETY FEATURED ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. SAFETY INJECTION, TURBINE TRIP, FEEDWATER ISOLATION, AND MOTOR DRIVEN AUXILIARY FEEDWATER PUMPS					
a. Manual Initiation	See Functional Unit 9				
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3, 4
c. Containment Pressure-High	S	R	M(3)	N.A.	1, 2, 3
d. Pressurizer Pressure-Low	S	R	M	N.A.	1, 2, 3
e. Differential Pressure Between Steam Lines--High	S	R	M	N.A.	1, 2, 3
f. Steam Line Pressure--Low	S	R	M	N.A.	1, 2, 3
2. CONTAINMENT SPRAY					
a. Manual Initiation	See Functional Unit 9				
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3, 4
c. Containment Pressure-High-High	S	R	M(3)	N.A.	1, 2, 3
3. CONTAINMENT ISOLATION					
a. Phase "A" Isolation					
1) Manual	See Functional Unit 9				
2) From Safety Injection Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3, 4
b. Phase "B" Isolation					
1) Manual	See Functional Unit 9				
2) Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3, 4
3) Containment Pressure-High-High	S	R	M(3)	N.A.	1, 2, 3

TABLE 4.3-2 (Continued)
ENGINEERED SAFETY FEATURED ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
c. Purge and Exhaust Isolation					
1) Manual	See Functional Unit 9				
2) Containment Radioactivity-High	S	R	M	N.A.	1, 2, 3, 4
4. STEAM LINE ISOLATION					
a. Manual	See Functional Unit 9				
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3
c. Containment Pressure--High-High	S	R	M(3)	N.A.	1, 2, 3
d. Steam Flow in Two Steam Lines--High Coincident with T_{avg}--Low-Low	S	R	M	N.A.	1, 2, 3
e. Steam Line Pressure--Low	S	R	M	N.A.	1, 2, 3
5. TURBINE TRIP AND FEEDWATER ISOLATION					
a. Steam Generator Water Level--High-High	S	R	M	N.A.	1, 2, 3
6. MOTOR DRIVEN AUXILIARY FEEDWATER PUMPS					
a. Steam Generator Water Level--Low-Low	S	R	M	N.A.	1, 2, 3
b. 4 kV Bus Loss of Voltage	S	R	M	N.A.	1, 2, 3
c. Safety Injection	N.A.	N.A.	M(2)	N.A.	1, 2, 3
d. Loss of Main Feed Pumps	N.A.	N.A.	R	N.A.	1, 2

TABLE 4.3-2 (Continued)
ENGINEERED SAFETY FEATURED ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
7. TURBINE DRIVEN AUXILIARY FEEDWATER PUMP					
a. Steam Generator Water Level--Low-low	S	R	M	N.A.	1, 2, 3
b. Reactor Coolant Pump Bus Undervoltage	N.A.	R	M	N.A.	1, 2, 3
8. LOSS OF POWER					
a. 4 kv Bus Loss of Voltage	S	R	M	N.A.	1, 2, 3, 4
b. 4 kv Bus Degraded Voltage	S	R	M	N.A.	1, 2, 3, 4
9. Manual					
a. Safety Injection (ECCS) Feedwater Isolation Reactor Trip (SI) Containment Isolation-Phase "A" Containment Purge and Exhaust Isolation Auxiliary Feedwater Pumps Essential Service Water System	N.A.	N.A.	N.A.	R	1, 2, 3, 4
b. Containment Spray Containment Isolation-Phase "B" Containment Purge and Exhaust Isolation Containment Air Recirculation Fan	N.A.	N.A.	N.A.	R	1, 2, 3, 4
c. Containment Isolation-Phase "A" Containment Purge and Exhaust Isolation	N.A.	N.A.	N.A.	R	1, 2, 3, 4
d. Steam Line Isolation	N.A.	N.A.	M(1)	R	1, 2, 3

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 153 TO FACILITY OPERATING LICENSE NO. DPR-58

AND AMENDMENT NO. 137 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 March 14, 1989, Indiana Michigan Power Company (the licensee) requested approval of an amendment to the D. C. Cook, Units 1 and 2 plant Technical Specifications (TSs). In their submittal, the licensee proposed both editorial and technical changes to TS 3/4.3.2.1, "Engineered Safety Feature Actuation System Instrumentation." These changes are intended to clarify the testing requirements for the manual actuation portion of ESF functions, and to make these requirements more closely resemble those included in Revision 4 of the Westinghouse Standard Technical Specifications (STS). The licensee also proposed adding a definition for Trip Actuating Device Operational Test to Section 1.0 of the TSs.

2.0 DISCUSSION

In the amendment request, the licensee indicated that portions of TS Tables 3.3-3, 3.3-4 and 4.3-2 are misleading in their references to the number of manual actuation channels installed for ESF equipment and the number of channels needed to actuate each train. The licensee also stated that Table 3.3-5 incorrectly groups the manual start of the containment air recirculation fans with safety injection and related functions. The licensee has proposed a number of editorial changes to the TS in order to correct these errors.

The licensee also proposed to make technical changes to Tables 3.3-3 and 4.3-2 in order to make the requirements included in these tables more closely resemble the requirements listed in the STS. Testing requirements in Table 4.3-2 would be changed so that the manual actuation circuitry be tested every 18 months, as part of a "Trip Actuating Device Operational Test." Additionally, the action statement for Table 3.3-3 functional unit 4.a (manual steam line isolation) would be changed to incorporate the requirements listed in the STS.

3.0 EVALUATION

The licensee has proposed several editorial changes to TS Tables 3.3-3, 3.3-4 and 4.3-2. The changes proposed by the licensee are intended to correct misleading portions of descriptive tables in the TS, and as such, do not change any requirements for operability or testing frequency of these components. These changes would clarify the TS by making them more accurately reflect the as-built condition of plant equipment. Therefore, the staff finds these changes to be acceptable.

The licensee has proposed to make changes to the requirements in TS Table 4.3-2 with respect to testing of the manual actuation circuitry of the SSPS. Testing of the manual actuation circuitry is presently performed monthly, with the exception of the manual actuation switches, which are tested every 18 months. The testing of the manual actuation circuitry (except the manual switches) is also encompassed by bimonthly automatic actuation circuitry testing of the SSPS. The licensee proposes to change the testing requirements for the manual actuation circuitry of the SSPS to require a "Trip Actuating Device Operational Test" every 18 months.

Using the proposed testing requirements, the manual actuation circuitry of the SSPS (with the exception of the manual actuation switches) would be tested bimonthly as part of the automatic actuation circuitry testing, and the entire manual actuation circuitry, including the manual switches, would be tested every 18 months as a complete functional unit. The present TS requirements for monthly testing of the manual steam line isolation circuitry would not be changed. The licensee reported that the actuation logic of the SSPS has been shown to be extremely reliable during previous testing. The proposed change of the testing requirements for the manual actuation circuitry from monthly to bimonthly will not have a detremental effect on overall plant safety and is consistent with the STS. The staff considers this change to be acceptable.

The licensee has also proposed to change the action statement associated with functional unit 4.a of TS Table 3.3-3, "Steam Line Isolation - Manual." The action statement presently requires that the unit be placed in Mode 3 within 54 hours if the number of operable manual actuation channels is one less than the total number of channels. The STS requires that the stop valve associated with the inoperable manual actuation channel be declared inoperable within 48 hours if the condition is not repaired. The licensee proposes to replace the present action statement with the requirements of the STS. This change would permit the licensee to follow the requirements of TS 3.7.1.5, "Steam Generator Stop Valves," which provides more operational flexibility. This proposed change is also consistent with the STS and is considered acceptable.

The staff has reviewed the proposed changes to the D. C. Cook Units 1 and 2 Technical Specifications, as submitted in the March 14, 1989 letter, and has found them to be in accordance with guidance provided in Revision 4 of the Westinghouse Standard Technical Specifications. The staff concludes that these proposed changes are acceptable.

4.0 ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and a change in a surveillance requirement. We have 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 these 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: April 5, 1991

Principal Contributor: R. Stransky, PD31