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May 31, 1989

Dockets Nos. 50-315
and 50-316

P O S T E D

50-316
DC COOK 2
AMENDMENT NO. 112
TO DPR-74

(See Corrector letter of 8-3-89)

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. 125 AND 112 TO FACILITY OPERATING LICENSES NOS.
DPR-58 AND DPR-74: (TACS NOS. 64515 AND 64516)

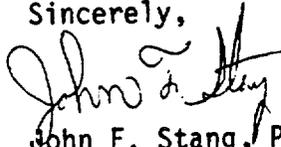
The Commission has issued the enclosed Amendment No. 125 to Facility Operating License No. DPR-58 and Amendment No. 112 to Facility Operating License No. DPR-74 for the Donald C. Cook Nuclear Plant, Units Nos. 1 and 2. The amendments consist of changes to the Technical Specifications (TSs) in response to your applications dated January 16, 1987 and supplemented on June 25, September 28, and November 25, 1987, October 31, 1988, and January 24, March 23, and April 6, 1989.

The amendments provide upgraded TSs to promote diesel generator reliability (TS 3/4.8.1) as a result of Generic Letter 84-15. Additionally, changes in 3/4.8.2 and 3/4.8.3, (the AC and DC distribution systems) are to provide standardization between Unit 1 and 2, to clarify certain TSs, and to make editorial changes.

The Commission has denied several changes as requested in your application concerning the TS changes in sections 3.8.1.1.b, 4.8.1.1.2.c.2 (Unit 2), 4.8.1.1.2.d (Unit 2), and 4.8.1.1.2.b.6 (Unit 1)

A copy of our related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice. A separate Notice of Denial of Amendment (copy enclosed) is being forwarded to the Office of the Federal Register for publication.

Sincerely,



John F. Stang, Project Manager
Project Directorate III-1
Division of Reactor Projects - III, IV, V
& Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 125 to DPR-58
2. Amendment No. 112 to DPR-74
3. Safety Evaluation
4. Notice of Denial

cc w/enclosures:

See next page

Mr. Milton Alexich
Indiana Michigan Power Company

Donald C. Cook Nuclear Plant

cc:
Regional Administrator, Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Mr. S. Brewer
American Electric Power
Service Corporation
1 Riverside Plaza
Columbus, Ohio 43216

Attorney General
Department of Attorney General
525 West Ottawa Street
Lansing, Michigan 48913

Township Supervisor
Lake Township Hall
Post Office Box 818
Bridgeman, Michigan 49106

W. G. Smith, Jr., Plant Manager
Donald C. Cook Nuclear Plant
Post Office Box 458
Bridgman, Michigan 49106

U.S. Nuclear Regulatory Commission
Resident Inspectors Office
7700 Red Arrow Highway
Stevensville, Michigan 49127

Gerald Charnoff, Esquire
Shaw, Pittman, Potts and Trowbridge
2300 N Street, N.W.
Washington, DC 20037

Mayor, City of Bridgeman
Post Office Box 366
Bridgeman, Michigan 49106

Special Assistant to the Governor
Room 1 - State Capitol
Lansing, Michigan 48909

Nuclear Facilities and Environmental
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. 125
License No. DPR-58

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The applications for amendment by Indiana Michigan Power Company (the licensee) dated January 16, June 25, September 28, and November 25, 1987, October 31, 1988, and January 24, March 23, and April 6, 1989, comply 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. 125, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment becomes effective 60 days from the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Lawrence A. Yandell, 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: May 31, 1989

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 125 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

Index page IX

Index page IX

3/4 8-1 through 8-16

3/4 8-1 through 8-20

B3/4 8-2

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3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Two separate and independent diesel generators, each with:
 1. A separate day fuel tank containing a minimum volume of 70 gallons of fuel,
 2. A separate fuel storage system* containing a minimum volume of 42,000 gallons of fuel, and
 3. A separate fuel transfer pump.

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

ACTION:

- a. With an offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours; restore at least two offsite circuits and two diesel generators 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.
- b. With a diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours; restore diesel generators 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. At the number of failures for the inoperable diesel indicated in Table 4.8-1 perform the Additional Reliability Actions prescribed in Table 4.8-1.

*Tanks are separate between diesels but shared between Units 1 and 2.

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

- c. With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter and if the diesel generator became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With the diesel generator restored to OPERABLE status, follow ACTION Statement a.* With the offsite circuit restored to OPERABLE status, follow ACTION Statement b.*
- d. With two of the above required offsite A.C. circuits inoperable, demonstrate the OPERABILITY of two diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours unless the diesel generators are already operating. Restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite source restored, follow ACTION Statement a.*
- e. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With one diesel generator unit restored, follow ACTION Statement b* or c.*

* The ACTION statement time shall be based upon the time associated with the component inoperability, and is not reset when exiting this ACTION statement.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability, and
- b. Demonstrated OPERABLE at least once per 18 months by transferring the unit power source automatically from the normal auxiliary source to the preferred reserve source and by transferring manually to the alternate reserve source.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

- a. In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:
 1. Verifying the fuel level in the day tank,
 2. Verifying the fuel level in the fuel storage tank,
 3. Verifying that the fuel transfer pump can be started and that it transfers fuel from the storage system to the day tank,
 4. Verifying that the diesel starts from ambient condition and that it accelerates to at least 514 rpm in less than or equal to 10 seconds,*
 5. Verifying that the generator is loaded to greater than or equal to 1750 kw and that it operates for greater than or equal to 60 minutes and verifying that the generator output breaker to the emergency bus is OPERABLE, and
 6. Verifying that the diesel generator is aligned to provide standby power to the associated emergency busses.
- b. By removing accumulated water**:
 - 1) From the day tank at least once per 31 days and after each occasion when the diesel is operated for greater than 1 hour, and
 - 2) From the storage tanks at least once per 31 days.
- c. By sampling new fuel oil** in accordance with the applicable guidelines of ASTM D4057-81 prior to adding new fuel to the storage tanks and
 - 1) By verifying, in accordance with the tests specified in ASTM D975-81 and prior to adding the new fuel to the storage tanks, that the sample has:

*The diesel generator start (10 seconds) from ambient conditions shall be performed at least once per 184 days in these surveillance tests. All other engine starts for the purpose of this surveillance testing and compensatory action may be at reduced acceleration rates as recommended by the manufacturer so that mechanical stress and wear on the diesel engine are minimized.

**The actions to be taken should any of the properties be found outside of specified limits are defined in the Bases.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- a) A kinematic viscosity of greater than or equal to 1.9 centistokes but less than or equal to 4.1 centistokes at 40°C (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6 but less than or equal to 40.1), if gravity was not determined by comparison with supplier's certification.
- b) A flash point equal to or greater than 125°F.
- 2) By verifying, in accordance with the test specified in ASTM D1298-80 and prior to adding the new fuel to the storage tanks, that the sample has either an API gravity of greater than or equal to 30 degrees but less than or equal to 40 degrees at 60°F or an absolute specific gravity at 60/60°F of greater than or equal to 0.82 but less than or equal to 0.88, or an API gravity of within 0.3 degrees at 60°F when compared to the supplier's certificate or a specific gravity of within 0.0016 at 60/60°F when compared to the supplier's certificate.
- 3) By verifying, in accordance with the test specified in ASTM D4176-82 and prior to adding new fuel to the storage tanks, that the sample has a clear and bright appearance with proper color.
- 4) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are within the appropriate limits when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D2622-82.
- d. At least once per 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-83, and verifying that total particulate contamination is less than 10 mg/liter when tested in accordance with ASTM D2276-83, Method A*.
- e. At least once per 18 months, during shutdown, by:
 - 1. Subjecting the diesel engine to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service,

*The actions to be taken should any of the properties be found outside of the specified limits are defined in the Bases.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying the generator capability to reject a load greater than or equal to 600 kw while maintaining voltage at 4160 ± 420 volts and frequency at 60 ± 1.2 Hz,
3. Verifying the generator capability to reject a load of 3500 kw without exceeding 75% of the difference between nominal speed and the overspeed trip setpoint,
4. Simulating a loss of offsite power by itself, and:
 - a) Verifying de-energization of the emergency busses and load shedding from the emergency busses,
 - b) Verifying that the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After load sequencing is completed, the steady state voltage and frequency of the emergency busses shall be maintained at 4160 ± 420 volts and 60 ± 1.2 Hz during the test.
5. Verifying that, on a Safety Injection actuation test signal (without loss of offsite power), the diesel generator starts on the auto-start signal and operates on standby for greater than or equal to 5 minutes,
6. Simulating a loss of offsite power in conjunction with a Safety Injection actuation test signal, and by:
 - a) Verifying de-energization of the emergency busses and load shedding from the emergency busses,
 - b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After load sequencing is completed, the steady state voltage and frequency of the emergency busses shall be 4160 ± 420 volts and 60 ± 1.2 Hz. The voltage and frequency shall be maintained within these limits for the remainder of this test, and

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus and/or Safety Injection actuation signal.
- 7. Verifying that the diesel generator operates for at least 24 hours. During this test the diesel generator shall be loaded to 3500 kw. Within 5 minutes after completing this 24-hour test, perform Surveillance Requirement 4.8.1.1.2.e.4.
 - 8. Determine that the auto-connected loads to each diesel generator do not exceed 3500 kw.
 - 9. Verifying the diesel generator's capability to:
 - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power.
 - b) Transfer its loads to the offsite power source, and
 - c) Be restored to its standby status.
 - 10. Verifying that with the diesel generator operating in a test mode while connected to its test load, a simulated Safety Injection signal overrides the test mode by:
 - a) Returning the diesel generator to standby operation, and
 - b) Verifying the emergency loads are serviced by offsite power.
 - 11. Verifying that the automatic sequence timing relays are OPERABLE with each load sequence time within plus or minus 5% of its required value and that each load is sequenced on within the design allowable time limit.
- f. At least once per 10 years by:
 - 1) Employing one of the following cleaning methods to clean the fuel oil storage tanks:
 - a) Drain each fuel oil storage tank, remove the accumulated sediment, and clean the tank, or

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b) Agitate the fuel oil in the storage tank while pumping the oil from the bottom of the tank through a 5-micron filter, and back to the opposite end of the tank. Three successive samples shall be taken and analyzed according to ASTM D2276-83. If the contaminant level in any of the samples is greater than 10 mg per liter, the agitation, filtration, and sampling processes shall be repeated. If the contaminant level remains above 10 mg per liter after 3 iterations, the draining and cleaning method described in surveillance requirement 4.8.1.1.2.f.1.a shall be employed.
- 2) Performing a precision leak detection test to verify that the leakage rate from the fuel oil system is less than or equal to .05 gallons per hour.
- 3) Starting both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 514 RPM in less than or equal to 10 seconds.*

*Shall be performed after any modifications which could affect diesel generator interdependence.

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

<u>Number of Failures in Last 20 Valid Tests*</u>	<u>Test Frequency</u>
Less than or equal to 1	At least once per 31 days
Greater than or equal to 2	At least once per 7 days**

*Criteria for determining number of failures and number of valid tests shall be in accordance with Regulatory Position C.2.e of Regulatory Guide 1.108, Revision 1, August 1977, where the number of tests and failures is determined on a per diesel generator basis. For the purposes of this test schedule, only valid tests conducted after the OL issuance date shall be included in the computation of the "last 20 valid tests."

**This test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one or less.

ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and
- b. One diesel generator with:
 1. A day fuel tank containing a minimum of 70 gallons of fuel,
 2. A fuel storage system containing a minimum of 42,000 gallons of fuel, and
 3. A fuel transfer pump.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes* until the minimum required A.C. electrical power sources are restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5.

*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.

ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.1 The following A.C. electrical busses shall be OPERABLE and energized with tie breakers open between redundant busses:

4160-volt Emergency Bus #T 11A & T 11B

4160-volt Emergency Bus #T 11C & T 11D

600-volt Emergency Bus #11A & 11B

600-volt Emergency Bus #11C & 11D

*120-volt A.C. Vital Bus #Channel I

*120-volt A.C. Vital Bus #Channel II

*120-volt A.C. Vital Bus #Channel III

*120-volt A.C. Vital Bus #Channel IV

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With less than the above complement of A.C. busses OPERABLE, restore the inoperable bus to OPERABLE status within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.1 The specified A.C. busses shall be determined OPERABLE and energized from A.C. sources with tie breakers open between redundant busses at least once per 7 days by verifying correct breaker alignment and indicated power availability.

*Energized from its associated inverter connected to a DC bus.

ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, the following A.C. electrical busses shall be OPERABLE and energized:

- 1 - 4160-volt Emergency Bus, and
- 1 - 600-volt Emergency Bus, and
- 2 -*120-volt A.C. Vital Busses.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above complement of A.C. busses OPERABLE and energized, establish CONTAINMENT INTEGRITY within 8 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.2 The specified A.C. busses shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

*Energized from its associated inverter connected to a DC bus.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.3 The following D.C. bus trains shall be energized and OPERABLE with tie breakers between bus trains open:

TRAIN AB consisting of 250-volt D.C. bus AB, 250-volt D.C. battery bank No. 1AB, and a full capacity charger, and

TRAIN CD consisting of 250-volt D.C. bus CD, 250-volt D.C. battery bank No. 1CD, and a full capacity charger.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION

- a. With one 250-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one 250-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

- 4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability.
- 4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE
 - a. At least once per 7 days by verifying that:
 1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. The pilot cell specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,
 3. The pilot cell voltage is greater than or equal to 2.10 volts, and
 4. The overall battery voltage is greater than or equal to 250 volts.
- b. At least once per 92 days by verifying that:
1. The voltage of each connected cell is greater than or equal to 2.10 volts under float charge and has not decreased more than 0.05 volts from the value observed during the original acceptance test, and
 2. The specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and
 3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.
- c. At least once per 18 months by verifying that:
1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration,
 2. The cell-to-cell and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material,
 3. The battery charger will supply at least 140 amperes at greater than or equal to 250 volts for at least 4 hours.
- d. At least once per 18 months, perform a battery service test during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the times specified in Table 4.8-2 with the battery charger disconnected. The battery terminal voltage shall be maintained greater than or equal to 210 volts throughout this test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- e. At least once per 60 months, perform a battery discharge test during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. This performance discharge test shall be performed in place of the battery service test.

TABLE 4.8-2

BATTERY EMERGENCY LOADS

<u>AB Battery Loads</u>	<u>Minimum Time</u>
1. Channel III static inverter	3 hrs
2. Channel IV static inverter	3 hrs
3. Computer static inverter*	3 hrs
4. Feed pump turbine 1E oil pump	1 hr
5. Control room emergency lighting	8 hrs
6. Main turbine backup oil pump	3 hrs
7. Isolation valve control	8 hrs
8. All control circuits	8 hrs
 <u>CD Battery Loads</u>	
1. Channel I static inverter	3 hrs
2. Channel II static inverter	3 hrs
3. BOP static inverter*	3 hrs
4. Feed pump turbine 1W oil pump	1 hr
5. Generator seal oil pump	8 hrs
6. Turbine emergency oil pump	3 hrs
7. Isolation valves	8 hrs
8. Annunciators	8 hrs
9. All control circuits	8 hrs

* AC power sources to the inverters shall be turned off at the start of the test and may be turned on at the end of the specified time interval. Inverters may be left in this operating mode for the duration of the discharge test.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.4 As a minimum, the following D.C. electrical equipment and bus shall be energized and OPERABLE:

- 1 - 250-volt D.C. bus, and
- 1 - 250-volt battery bank and charger associated with the above D.C. bus.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above complement of D.C. equipment and bus OPERABLE, establish CONTAINMENT INTEGRITY within 8 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 250-volt D.C. bus shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING - TRAIN N BATTERY SYSTEM

LIMITING CONDITIION FOR OPERATION

3.8.2.5 The following D.C. bus train shall be energized and OPERABLE:

TRAIN N consisting of 250-volt D.C. bus N, 250-volt D.C. battery bank N, and a full capacity charger.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

With the Train N battery system inoperable, declare the turbine driven Auxiliary Feedwater Pump inoperable and follow the ACTION statement of Specification 3.7.1.2.

SURVEILLANCE REQUIREMENTS

- 4.8.2.5.1 The D.C. bus train N shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.
- 4.8.2.5.2 The 250-volt battery bank and charger shall be demonstrated OPERABLE:
- a. At least once per 7 days by verifying that:
 1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,
 2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

3. The pilot cell voltage is greater than or equal to 2.10 volts, and
 4. The overall battery voltage is greater than or equal to 250 volts.
- b. At least once per 92 days by verifying that:
1. The voltage of each connected cell is greater than or equal to 2.10 volts under float charge and has not decreased more than 0.05 volts from the value observed during the original acceptance test, and
 2. The specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and
 3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.
- c. At least once per 18 months by verifying that:
1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration.
 2. The cell-to-cell and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material.
 3. The battery charger will supply at least 10 amperes at greater than or equal to 250 volts for at least 4 hours.
- d. At least once per 18 months perform a battery service test, during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the times specified of Table 4.8-3 with the battery charger disconnected. The battery terminal voltage shall be maintained greater than or equal to 210 volts throughout the battery service test.
- e. At least once per 60 months, perform a battery discharge test during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. This performance discharge test shall be performed in place of the battery service test.

TABLE 4.8-3

BATTERY EMERGENCY LOADS

<u>"N" Battery Loads</u>	<u>Minimum Time</u>
Auxiliary feedwater turbine control bus	4 hours
FMO-211 valve	*
FMO-221 valve	*
FMO-231 valve	*
FMO-241 valve	*
TDTV valve	*

*Valves will be operated through the following sequence:

1. Beginning of test: open valves
2. Five minutes after the beginning of the test: close the valves.
3. Ten minutes after the beginning of the test: reopen the valves.
4. Four hours after the beginning of the test: close the valves.

End of the test.

ELECTRICAL POWER SYSTEMS

3/4.8.3 Alternative A.C. Power Sources

LIMITING CONDITION FOR OPERATION

3.8.3.1 The steady state bus voltage for the manual alternate reserve source* shall be greater than or equal to 90% of the nominal bus voltage.

APPLICABILITY: Whenever the manual alternate reserve source (69 kV) is connected to more than two buses.

ACTION: With bus voltage less than 90% nominal, adjust load on the remaining buses to maintain steady state bus voltage greater than or equal to 90% limit.

SURVEILLANCE REQUIREMENTS

4.8.3.1 No additional surveillance requirements other than those required by Specifications 4.8.1.1.1 and 4.8.1.2.

*Shared with D. C. Cook Unit 2.

ELECTRICAL POWER SYSTEMS (Continued)

BASES

Removal of accumulated water as required by 4.8.1.1.2.b.2 is performed by drawing the contents off the bottom of the tank until acceptable results are obtained for either a tape test or a water and sediment test. An acceptable result for the water and sediment content is a measured value less than 0.05 percent volume.

The sample specified in 4.8.1.1.2.c.4 is sent offsite for testing. A serious attempt will be made to meet the 31-day limit on the offsite tests; however, if for some reason this limit is not met (e.g., if the sample is lost or broken or if the results are not received in 31 days), the diesel generators should not be considered inoperable. If the sample is lost, broken, or fails the offsite tests and the new oil has already been put into the storage tank, the offsite tests will be performed on a sample taken from the storage tank. If the results on the subsequent storage tank sample are not within specified limits, the diesel generators should be considered OPERABLE and the out-of-spec properties should be returned to within specification as soon as possible.

If the monthly storage tank sample taken in accordance with Specification 4.8.1.1.2.d fails the particulate contamination test, the diesel generators should be considered OPERABLE and the contamination level should be restored to below 10 mg/liter as soon as possible.

The precision leak-detection test described in Surveillance Requirement 4.8.1.1.2.f.2 should be performed as described in NFPA (National Fire Protection Association) -329. As NFPA-329 is revised, the precision leak-detection test may be modified to incorporate changes to the test as described in the revisions to NFPA-329.



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. 112
License No. DPR-74

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The applications for amendment by Indiana Michigan Power Company (the licensee) dated January 16, June 25, September 28, and November 25, 1987, October 31, 1988, and January 24, March 23, and April 6, 1989, comply 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. 112, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment becomes effective 60 days from the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Lawrence A. Yandell, 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: May 31, 1989

ERRATA*

ATTACHMENT TO LICENSE AMENDMENT NO. 112

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

Index page IX

3/4 8-1 through 8-16

INSERT

Index page IX*

3/4 8-1 through 8-20

B3/4 8-2

Corrective letter of 8-3-89

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3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Two separate and independent diesel generators, each with:
 1. A separate day fuel tank containing a minimum volume of 70 gallons of fuel,
 2. A separate fuel storage system* containing a minimum volume of 42,000 gallons of fuel, and
 3. A separate fuel transfer pump.

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

ACTION:

- a. With an offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours; restore at least two offsite circuits and two diesel generators 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.
- b. With a diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours; restore diesel generators 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. At the number of failures for the inoperable diesel indicated in Table 4.8-1 perform the Additional Reliability Actions prescribed in Table 4.8-1.

*Tanks are separate between diesels but shared between Units 1 and 2.

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

- c. With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter and if the diesel generator became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With the diesel generator restored to OPERABLE status, follow ACTION Statement a.* With the offsite circuit restored to OPERABLE status, follow ACTION Statement b.*
- d. With two of the above required offsite A.C. circuits inoperable, demonstrate the OPERABILITY of two diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours unless the diesel generators are already operating. Restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite source restored, follow ACTION Statement a.*
- e. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With one diesel generator unit restored, follow ACTION Statement b* or c.*

* The ACTION statement time shall be based upon the time associated with the component inoperability, and is not reset when exiting this ACTION statement.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability, and
- b. Demonstrated OPERABLE at least once per 18 months by transferring the unit power source automatically from the normal auxiliary source to the preferred reserve source and by transferring manually to the alternate reserve source.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

- a. In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:
 1. Verifying the fuel level in the day tank,
 2. Verifying the fuel level in the fuel storage tank,
 3. Verifying that the fuel transfer pump can be started and that it transfers fuel from the storage system to the day tank,
 4. Verifying that the diesel starts from ambient condition and that it accelerates to at least 514 rpm in less than or equal to 10 seconds,*
 5. Verifying that the generator is loaded to greater than or equal to 1750 kw and that it operates for greater than or equal to 60 minutes and verifying that the generator output breaker to the emergency bus is OPERABLE, and
 6. Verifying that the diesel generator is aligned to provide standby power to the associated emergency busses.
- b. By removing accumulated water**:
 - 1) From the day tank at least once per 31 days and after each occasion when the diesel is operated for greater than 1 hour, and
 - 2) From the storage tanks at least once per 31 days.
- c. By sampling new fuel oil** in accordance with the applicable guidelines of ASTM D4057-81 prior to adding new fuel to the storage tanks and
 - 1) By verifying, in accordance with the tests specified in ASTM D975-81 and prior to adding the new fuel to the storage tanks, that the sample has:

*The diesel generator start (10 seconds) from ambient conditions shall be performed at least once per 184 days in these surveillance tests. All other engine starts for the purpose of this surveillance testing and compensatory action may be at reduced acceleration rates as recommended by the manufacturer so that mechanical stress and wear on the diesel engine are minimized.

**The actions to be taken should any of the properties be found outside of specified limits are defined in the Bases.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- a) A kinematic viscosity of greater than or equal to 1.9 centistokes but less than or equal to 4.1 centistokes at 40°C (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6 but less than or equal to 40.1), if gravity was not determined by comparison with supplier's certification.
 - b) A flash point equal to or greater than 125°F.
- 2) By verifying, in accordance with the test specified in ASTM D1298-80 and prior to adding the new fuel to the storage tanks, that the sample has either an API gravity of greater than or equal to 30 degrees but less than or equal to 40 degrees at 60°F or an absolute specific gravity at 60/60°F of greater than or equal to 0.82 but less than or equal to 0.88, or an API gravity of within 0.3 degrees at 60°F when compared to the supplier's certificate or a specific gravity of within 0.0016 at 60/60°F when compared to the supplier's certificate.
 - 3) By verifying, in accordance with the test specified in ASTM D4176-82 and prior to adding new fuel to the storage tanks, that the sample has a clear and bright appearance with proper color.
 - 4) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are within the appropriate limits when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D2622-82.
- d. At least once per 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-83, and verifying that total particulate contamination is less than 10 mg/liter when tested in accordance with ASTM D2276-83, Method A*.
 - e. At least once per 18 months, during shutdown, by:
 1. Subjecting the diesel engine to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service,

*The actions to be taken should any of the properties be found outside of the specified limits are defined in the Bases.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying the generator capability to reject a load greater than or equal to 600 kw while maintaining voltage at 4160 ± 420 volts and frequency at 60 ± 1.2 Hz,
3. Verifying the generator capability to reject a load of 3500 kw without exceeding 75% of the difference between nominal speed and the overspeed trip setpoint,
4. Simulating a loss of offsite power by itself, and:
 - a) Verifying de-energization of the emergency busses and load shedding from the emergency busses,
 - b) Verifying that the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After load sequencing is completed, the steady state voltage and frequency of the emergency busses shall be maintained at 4160 ± 420 volts and 60 ± 1.2 Hz during the test.
5. Verifying that, on a Safety Injection actuation test signal (without loss of offsite power), the diesel generator starts on the auto-start signal and operates on standby for greater than or equal to 5 minutes,
6. Simulating a loss of offsite power in conjunction with a Safety Injection actuation test signal, and by:
 - a) Verifying de-energization of the emergency busses and load shedding from the emergency busses,
 - b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After load sequencing is completed, the steady state voltage and frequency of the emergency busses shall be 4160 ± 420 volts and 60 ± 1.2 Hz. The voltage and frequency shall be maintained within these limits for the remainder of this test, and

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus and/or Safety Injection actuation signal.
- 7. Verifying that the diesel generator operates for at least 24 hours. During this test the diesel generator shall be loaded to 3500 kw. Within 5 minutes after completing this 24-hour test, perform Surveillance Requirement 4.8.1.1.2.e.4.
 - 8. Determine that the auto-connected loads to each diesel generator do not exceed 3500 kw.
 - 9. Verifying the diesel generator's capability to:
 - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power.
 - b) Transfer its loads to the offsite power source, and
 - c) Be restored to its standby status.
 - 10. Verifying that with the diesel generator operating in a test mode while connected to its test load, a simulated Safety Injection signal overrides the test mode by:
 - a) Returning the diesel generator to standby operation, and
 - b) Verifying the emergency loads are serviced by offsite power.
 - 11. Verifying that the automatic sequence timing relays are OPERABLE with each load sequence time within plus or minus 5% of its required value and that each load is sequenced on within the design allowable time limit.
- f. At least once per 10 years by:
 - 1) Employing one of the following cleaning methods to clean the fuel oil storage tanks:
 - a) Drain each fuel oil storage tank, remove the accumulated sediment, and clean the tank, or

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b) Agitate the fuel oil in the storage tank while pumping the oil from the bottom of the tank through a 5-micron filter, and back to the opposite end of the tank. Three successive samples shall be taken and analyzed according to ASTM D2276-83. If the contaminant level in any of the samples is greater than 10 mg per liter, the agitation, filtration, and sampling processes shall be repeated. If the contaminant level remains above 10 mg per liter after 3 iterations, the draining and cleaning method described in surveillance requirement 4.8.1.1.2.f.1.a shall be employed.

- 2) Performing a precision leak detection test to verify that the leakage rate from the fuel oil system is less than or equal to .05 gallons per hour.

- 3) Starting both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 514 RPM in less than or equal to 10 seconds.*

*Shall be performed after any modifications which could affect diesel generator interdependence.

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

<u>Number of Failures in Last 20 Valid Tests*</u>	<u>Test Frequency</u>
Less than or equal to 1	At least once per 31 days
Greater than or equal to 2	At least once per 7 days**

*Criteria for determining number of failures and number of valid tests shall be in accordance with Regulatory Position C.2.e of Regulatory Guide 1.108, Revision 1, August 1977, where the number of tests and failures is determined on a per diesel generator basis. For the purposes of this test schedule, only valid tests conducted after the OL issuance date shall be included in the computation of the "last 20 valid tests."

**This test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one or less.

ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and
- b. One diesel generator with:
 1. A day fuel tank containing a minimum of 70 gallons of fuel,
 2. A fuel storage system containing a minimum of 42,000 gallons of fuel, and
 3. A fuel transfer pump.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes* until the minimum required A.C. electrical power sources are restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5.

*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.

ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.1 The following A.C. electrical busses shall be OPERABLE and energized with tie breakers open between redundant busses:

4160-volt Emergency Bus #T 21A & T 21B

4160-volt Emergency Bus #T 21C & T 21D

600-volt Emergency Bus #21A & 21B

600-volt Emergency Bus #21C & 21D

*120-volt A.C. Vital Bus #Channel I

*120-volt A.C. Vital Bus #Channel II

*120-volt A.C. Vital Bus #Channel III

*120-volt A.C. Vital Bus #Channel IV

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With less than the above complement of A.C. busses OPERABLE, restore the inoperable bus to OPERABLE status within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.1 The specified A.C. busses shall be determined OPERABLE and energized from A.C. sources with tie breakers open between redundant busses at least once per 7 days by verifying correct breaker alignment and indicated power availability.

*Energized from its associated inverter connected to a DC bus.

ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, the following A.C. electrical busses shall be OPERABLE and energized:

- 1 - 4160-volt Emergency Bus, and
- 1 - 600-volt Emergency Bus, and
- 2 -*120-volt A.C. Vital Busses.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above complement of A.C. busses OPERABLE and energized, establish CONTAINMENT INTEGRITY within 8 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.2 The specified A.C. busses shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

*Energized from its associated inverter connected to a DC bus.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.3 The following D.C. bus trains shall be energized and OPERABLE with tie breakers between bus trains open:

TRAIN AB consisting of 250-volt D.C. bus AB, 250-volt D.C. battery bank No. 2AB, and a full capacity charger, and

TRAIN CD consisting of 250-volt D.C. bus CD, 250-volt D.C. battery bank No. 2CD, and a full capacity charger.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION

- a. With 250-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one 250-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE

- a. At least once per 7 days by verifying that:
 1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. The pilot cell specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,
 3. The pilot cell voltage is greater than or equal to 2.10 volts, and
 4. The overall battery voltage is greater than or equal to 250 volts.
- b. At least once per 92 days by verifying that:
1. The voltage of each connected cell is greater than or equal to 2.10 volts under float charge and has not decreased more than 0.05 volts from the value observed during the original acceptance test, and
 2. The specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and
 3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.
- c. At least once per 18 months by verifying that:
1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration,
 2. The cell-to-cell and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material,
 3. The battery charger will supply at least 140 amperes at greater than or equal to 250 volts for at least 4 hours.
- d. At least once per 18 months, perform a battery service test during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the times specified in Table 4.8-2 with the battery charger disconnected. The battery terminal voltage shall be maintained greater than or equal to 210 volts throughout this test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

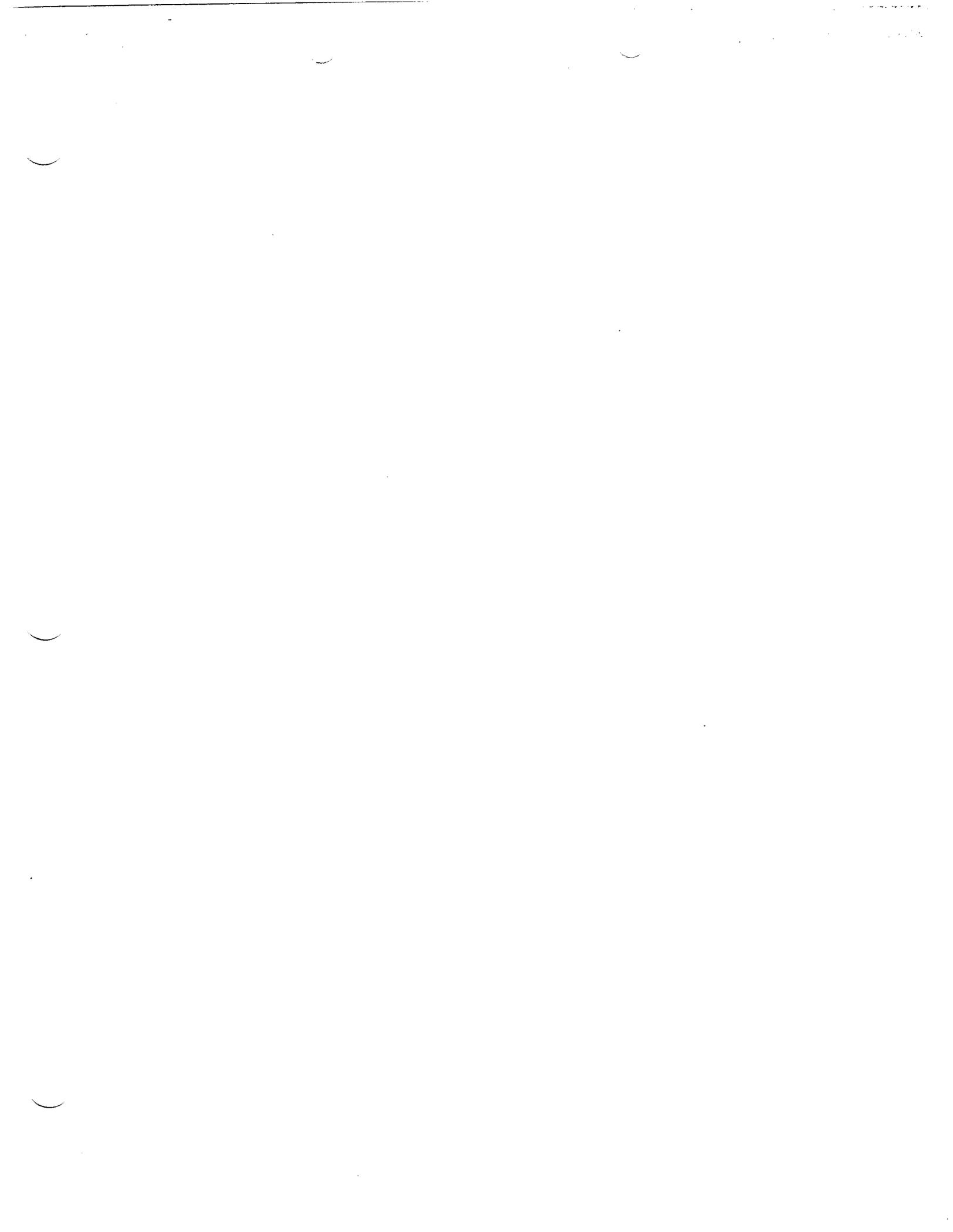
- e. At least once per 60 months, perform a battery discharge test during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. This performance discharge test shall be performed in place of the battery service test.

TABLE 4.8-2

BATTERY EMERGENCY LOADS

<u>AB Battery Loads</u>	<u>Minimum Time</u>
1. Channel III static inverter	3 hrs
2. Channel IV static inverter	3 hrs
3. Computer static inverter*	3 hrs
4. Bop static inverter*	3 hrs
5. Feed pump turbine 2E oil pump	1 hr
6. Control room emergency lighting	8 hrs
7. Main turbine emergency oil pump	3 hrs
8. Isolation valve control	8 hrs
9. All control circuits	8 hrs
<u>CD Battery Loads</u>	
1. Channel I static inverter	3 hrs
2. Channel II static inverter	3 hrs
3. Feed pump turbine 2W oil pump	1 hr
4. Generator seal oil pump	5 hrs
5. Main turbine emergency oil pump	3 hrs
6. Isolation valves	8 hrs
7. Annunciators	8 hrs
8. All control circuits	8 hrs

* AC power sources to the inverters shall be turned off at the start of the test and may be turned on at the end of the specified time interval. Inverters may be left in this operating mode for the duration of the discharge test.



ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN:

LIMITING CONDITION FOR OPERATION

3.8.2.4 As a minimum, the following D.C. electrical equipment and bus shall be energized and OPERABLE:

- 1 - 250-volt D.C. bus, and
- 1 - 250-volt battery bank and charger associated with the above D.C. bus.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above complement of D.C. equipment and bus OPERABLE, establish CONTAINMENT INTEGRITY within 8 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 250-volt D.C. bus shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING - TRAIN N BATTERY SYSTEM

LIMITING CONDITIION FOR OPERATION

3.8.2.5 The following D.C. bus train shall be energized and OPERABLE:

TRAIN N consisting of 250-volt D.C. bus N, 250-volt D.C. battery bank N, and a full capacity charger.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

With the Train N battery system inoperable, declare the turbine driven Auxiliary Feedwater Pump inoperable and follow the ACTION statement of Specification 3.7.1.2.

SURVEILLANCE REQUIREMENTS

4.8.2.5.1 The D.C. bus train N shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.5.2 The 250-volt battery bank and charger shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying that:
 1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,
 2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

3. The pilot cell voltage is greater than or equal to 2.10 volts, and
 4. The overall battery voltage is greater than or equal to 250 volts.
- b. At least once per 92 days by verifying that:
1. The voltage of each connected cell is greater than or equal to 2.10 volts under float charge and has not decreased more than 0.05 volts from the value observed during the original acceptance test, and
 2. The specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and
 3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.
- c. At least once per 18 months by verifying that:
1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration.
 2. The cell-to-cell and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material.
 3. The battery charger will supply at least 10 amperes at greater than or equal to 250 volts for at least 4 hours.
- d. At least once per 18 months perform a battery service test, during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the times specified of Table 4.8-3 with the battery charger disconnected. The battery terminal voltage shall be maintained greater than or equal to 210 volts throughout the battery service test.
- e. At least once per 60 months, perform a battery discharge test during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. This performance discharge test shall be performed in place of the battery service test.

TABLE 4.8-3

BATTERY EMERGENCY LOADS

<u>"N" Battery Loads</u>	<u>Minimum Time</u>
Auxiliary feedwater turbine control bus	4 hours
FMO-211 valve	*
FMO-221 valve	*
FMO-231 valve	*
FMO-241 valve	*
TDTV valve	*

*Valves will be operated through the following sequence:

1. Beginning of test: open valves
2. Five minutes after the beginning of the test: close the valves.
3. Ten minutes after the beginning of the test: reopen the valves.
4. Four hours after the beginning of the test: close the valves.

End of the test.

ELECTRICAL POWER SYSTEMS

3/4.8.3 Alternative A.C. Power Sources

LIMITING CONDITION FOR OPERATION

3.8.3.1 The steady state bus voltage for the manual alternate reserve source* shall be greater than or equal to 90% of the nominal bus voltage.

APPLICABILITY: Whenever the manual alternate reserve source (69 kV) is connected to more than two buses.

ACTION: With bus voltage less than 90% nominal, adjust load on the remaining buses to maintain steady state bus voltage greater than or equal to 90% limit.

SURVEILLANCE REQUIREMENTS

4.8.3.1 No additional surveillance requirements other than those required by Specifications 4.8.1.1.1 and 4.8.1.2.

*Shared with D. C. Cook Unit 2.

ELECTRICAL POWER SYSTEMS (Continued)

BASES

Removal of accumulated water as required by 4.8.1.1.2.b.2 is performed by drawing the contents off the bottom of the tank until acceptable results are obtained for either a tape test or a water and sediment test. An acceptable result for the water and sediment content is a measured value less than 0.05 percent volume.

The sample specified in 4.8.1.1.2.c.4 is sent offsite for testing. A serious attempt will be made to meet the 31-day limit on the offsite tests; however, if for some reason this limit is not met (e.g., if the sample is lost or broken or if the results are not received in 31 days), the diesel generators should not be considered inoperable. If the sample is lost, broken, or fails the offsite tests and the new oil has already been put into the storage tank, the offsite tests will be performed on a sample taken from the storage tank. If the results on the subsequent storage tank sample are not within specified limits, the diesel generators should be considered OPERABLE and the out-of-spec properties should be returned to within specification as soon as possible.

If the monthly storage tank sample taken in accordance with Specification 4.8.1.1.2.d fails the particulate contamination test, the diesel generators should be considered OPERABLE and the contamination level should be restored to below 10 mg/liter as soon as possible.

The precision leak-detection test described in Surveillance Requirement 4.8.1.1.2.f.2 should be performed as described in NFPA (National Fire Protection Association) -329. As NFPA-329 is revised, the precision leak-detection test may be modified to incorporate changes to the test as described in the revisions to NFPA-329.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 125 TO FACILITY OPERATING LICENSE NO. DPR-58
AND AMENDMENT NO. 112 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

Letters from Indiana Michigan Electric Company (the licensee) dated September 28, 1984 and April 24, 1985 for the D. C. Cook Nuclear Power Plant, Units 1 & 2 established initial groundwork addressing concerns regarding diesel generator reliability in Generic letter 84-15. In a letter dated January 16, 1987, the licensee submitted a Technical Specification change request attempting to more closely reflect the Standard Technical Specifications (STS) enclosed in Generic Letter 84-15. Additional information and improved TS's are included in letters dated June 25, and September 28, 1987. A letter dated November 25, 1987 requests TS changes to two specific portions of the original submittal concerning diesel generator fuel oil surveillance testing and the ten year diesel generator fuel oil storage tank cleaning. Additional information on the ten year diesel generator fuel oil storage tank cleaning is contained in a letter dated January 24, 1989. The portions of the TS submittal dated January 16, 1987 concerning simulated load testing of the station batteries and N-train batteries were resubmitted in a letter dated April 29, 1988 to ensure timely compliance with an INPO commitment and to reduce outage time. The TS's for surveillance of the station batteries were issued as Amendment Nos. 123 and 110 to Facility Operating License Nos. DPR-58 and DPR-74, respectively. A letter dated March 23, 1989 provides clarified and corrected TS pages for the 10 year tank cleaning and inspection portion. The licensee provides corrected TSs covering diesel generator surveillance testing in a letter dated April 6, 1989.

For ease of evaluation and clarification of the proposed amendments, the following evaluation is split into three separate areas of consideration; (2.1) Diesel Generator Fuel Oil Surveillance Requirements, (2.2) Diesel Generator Fuel Oil Storage Tank Surveillance Requirements, and (2.3) Diesel Generator Surveillance Testing.

2.0 EVALUATION

2.1 Diesel Generator Fuel Oil Surveillance Requirements

2.1.1 Introduction

By letter dated June 25, 1987, the licensee proposed changes to section 3/4 8.1 of the TSs concerning surveillance requirements for the diesel generator fuel oil system. Additional information is provided by letters dated September 28, and November 9, 1987. The TS change request dated June 25, 1987 was superseded by a TS change request dated November 25, 1987. The staff notes that the proposed changes deviate from the guidelines in the Standard Technical Specifications (STS) for Westinghouse plants. In addition, the proposed TS changes provide for uniformity in the TSs for both Units 1 & 2.

2.1.2 Evaluation

The primary deviation of the licensee's proposed TS from the STS is the deletion of the requirements for testing of stored fuel oil particulate concentration in accordance with American Society for Testing Materials (ASTM) D2274-70 every 92 days. In lieu of the above, the proposed TS requires testing of stored fuel oil for particulate concentrations every 31 days in accordance with ASTM D2276-83. The proposed test more closely confirms the actual condition of the fuel oil that will be pumped to the diesel generators in terms of particulate matter which could impair diesel generator operation or result in diesel generator unavailability. The current STS surveillance requirements (ASTM D2274-70) are orientated to predicting the tendency of fuel oil to oxidize and form particulates during long term storage rather than determining the particulate concentration that may already exist. The staff finds that the more frequent testing for actual particulates in the stored fuel oil will provide better indications of fuel conditions as well as identifying the tendency for formation of particulates under site storage conditions. The proposed tests would, therefore, be more conservative in establishing the adequacy of stored fuel oil than the present STS guidelines.

Other proposed changes include (a) replacing the "water sediment" test by centrifuge on new fuel oil per ASTM D1796 with the "clear and bright" test per ASTM D4176-82, (b) use of optional methods of verifying fuel gravity by testing and comparing with the suppliers certification, (c) allowing sulfur analysis to be performed in accordance with ASTM D2262, and (d) extending the time limit for obtaining ASTM D975 test results on new fuel from 14 days to 31 days. During the course of reviewing the McGuire TS changes, the staff reviewed the "clear and bright" test (ASTM 4176-82) including a demonstration of the test principles at the Naval Fuel Laboratory, Norfolk, Virginia. Based on the above review, the staff finds the "clear and bright" test to be more sensitive in determining the presence of water and sediment in fuel oil than the "water and sediment" test by centrifuge (ASTM D1796).

The use of optional methods of verifying new fuel gravity prior to storing by testing and comparing with the supplier's certification is proposed by the licensee as a means of simplifying new fuel acceptance procedures. The justification for this change is that any contamination of fuel oil during transportation would be indicated by changes in flash point, gravity, viscosity, or appearance. Incorrect flash point would be detected by testing as discussed further below. Any contamination which could alter the fuel oil appearance would be detected by the "clear and bright" test discussed previously. With tests for flash point and appearance as additional indicators, a verification

of fuel oil gravity by testing and comparing to the supplier's certification will provide the necessary assurance that the new fuel is within specification limits. The staff finds the verification of fuel oil gravity by optional methods to be satisfactory.

Current ASTM D975 guidelines for testing new fuel oil sulfur content indicate that the testing is to be performed in accordance with ASTM D129. ASTM D396, "Specification for Fuel Oil," however, allows the use of ASTM D2262 test methods for sulfur determination in No. 2 grade fuel oil. The staff recognizes both of the above fuel oil specifications and believes that obtaining test results by ASTM D2262 will be equivalent to results obtained by use of ASTM D129. Therefore, the staff finds the proposed alternate method of determining sulfur content to be satisfactory,

The current STS guidelines indicate that new fuel oil is to be tested for conformance to the limits of the respective fuel oil properties listed in Table 1 of ASTM D975, and the test results are to be available within 14 days following fuel oil delivery. Under the licensee's proposed surveillance program, the most important fuel oil properties, with regard to immediate diesel engine operability, (flash point, viscosity or gravity, water, and sediment) are checked for ASTM D975 limits immediately prior to accepting the new fuel oil. The remaining fuel oil properties may affect diesel generator performance only on a long term basis. Thus, the staff finds that the licensee's proposal to extend the time for obtaining test results for the remaining fuel oil properties from 14 days to 31 days would not adversely affect diesel generator operability.

The proposed changes to the TSs include deleting the requirements for testing of stored fuel oil in accordance with ASTM D975 requirements on a 92 day basis. The rationale for this deletion is that the main fuel oil properties which can affect diesel generator performance (flash point, cetane number, viscosity, cloud point) and are included in ASTM D975 do not change during storage. If these properties are within specification when the fuel oil is placed in storage, they will remain within specification unless other non-specific petroleum products are added to the storage tanks. The addition of non-specification petroleum products is precluded by the licensee's proposed new fuel surveillance program as described above. Over prolonged periods stored fuel can oxidize and form particulates which, in significant enough concentrations, could impair diesel generator performance. In addition, bacteria growth can occur. Particulate concentrations will be monitored every 31 days as discussed previously. Bacteria growth will be prevented by periodic removal of water from storage tanks. Because fuel oil properties will not change significantly in storage and fuel oil conditions which could affect diesel generator operation will be closely monitored (on a 31 day basis), the staff finds that further testing of stored fuel in accordance with ASTM D975 every 92 days will not provide measurable improvement in diesel generator reliability. Therefore, such testing can be deleted.

The licensee has also proposed two additions to the fuel oil surveillance TSs. These include (a) testing new fuel for flash point before acceptance, and (b) testing for and draining water from the fuel oil storage tanks every 31 days. The flash point test provides an additional indication that new fuel oil is within specification limits; thereby, reducing the possibility of adding "bad fuel" to the fuel oil already in storage. The requirement to drain accumulated

water from the storage tanks every 31 days will be of considerable value in reducing the possibility of bacteria contamination of the stored fuel, minimizing the formation of corrosion products on the bottom of the storage tank, and preventing water from contaminating the fuel oil transfer system and the diesel generator fuel system. Both of the above additions represent a more conservative approach to maintaining quality diesel fuel and diesel generator reliability than current staff guidelines.

2.1.3 Conclusion

Based on the above, the staff concludes that the surveillance requirements for ensuring diesel oil adequacy, TS section 3/4 8.1, as proposed by the licensee are more conservative than the guidance in the Standard Technical Specifications. This conservatism coupled with the simplified testing approach for fuel oil will provide immediate assurance of fuel oil quality on delivery and maintenance of fuel oil quality during storage. This should increase diesel generator reliability. Therefore, the licensee's proposed TS changes for diesel fuel oil surveillance are acceptable.

2.2 Diesel Generator Fuel Oil Storage Tank Surveillance Testing

2.2.1 Introduction

In a letter dated September 28, 1987, the licensee revised the original diesel generator fuel oil surveillance test requirement to reflect more closely to similarly approved TSs. Groundwork for a proposed Diesel Generator Fuel Oil Storage Tank Surveillance Test was laid. Initially, problems such as development of procedures and clean tank criterion were identified. Subsequent letters dated November 25, 1987 and January 24, 1989 provided some additional information. In a letter dated March 23, 1989, the licensee addressed all the remaining concerns of the NRC staff.

2.2.2 Evaluation

Due to the unique design of the licensee's diesel fuel system, periodic surveillance testing requiring draining of the storage tanks would force the licensee to shut down both Units 1 and 2. The licensee's letter dated March 23, 1989, proposed an alternative method of ensuring adequate surveillance testing of the diesel fuel oil storage tanks.

Section 4.8.1.1.2.f of the proposed TS requires that on a 10-year basis the licensee perform the following steps.

Section 4.8.1.1.2.f.1 of the proposed TS requires that the licensee either (1) drain each storage tank, remove accumulated sediment, and clean the tank, or (2) agitate the fuel oil in the tank while pumping the oil from the bottom of the tank through a 5 micron filter and back into the tank. Additionally, the tanks will be sampled three consecutive times and analyzed according to ASTM D2276-83. If any of the three samples contain more than 10mg/liter of contaminate, the agitation, filtration, and sample process must be repeated. If after three consecutive attempts, the sample still fails the contaminate test, the licensee must drain and clean the storage tank.

Circulating the fuel oil through a 5 micron filter of at least five tank volumes will provide sufficient cleaning of most normal oxidation and bacteria. If excessive oxidation or bacteria growth occurs, the proposed surveillance test will adequately provide for the surveillance of the diesel generator fuel oil storage tanks. By ensuring that the contamination levels in the storage tanks do not exceed 10mg/liter, the licensee will improve diesel generator reliability from that which already exists. The failure criterion requiring the licensee to completely drain and clean the diesel fuel oil storage tanks will provide an adequate path to ensure reasonable reliability of the diesel fuel oil storage system.

Section 4.8.1.1.2.f.2 of the proposed TS requires that the licensee perform a precision leak test to verify the integrity of the fuel system. The leakage rate is not to exceed .05 gallons per hour.

The precision leak test employs a fuel surface mounted level detector which operates on the principal of buoyancy changes. The detection system is reported to be able to detect changes of .05 gallons per hour under worst case conditions. This approach of surveillance testing the diesel generator fuel oil storage tanks is more conservative than what currently exists in the plants.

2.2.3 Conclusion

The staff believes that the licensee's proposal to perform surveillance testing of the diesel generator fuel oil storage system is more conservative than what currently exists in the D. C. Cook Units 1 & 2 TSs. Furthermore, the proposed surveillance method provides sufficient failure and clean tank criterion to provide an increase in diesel generator reliability and thus meets the intent of Generic letter 84-15. The proposed solution to ensure diesel generator fuel oil storage tank cleanliness is, therefore, found to be acceptable. It should be noted, however, that the D. C. Cook diesel generator fuel oil storage tank surveillance testing program may be subject to further generic guidance.

2.3 Diesel Generator Surveillance Testing

2.3.1 Introduction

By a letter dated January 16, 1987, the licensee addressed the diesel generator reliability issue and proposed Technical Specification changes to more closely resemble the Standard Technical Specifications contained in Generic Letter 84-15. In a subsequent letter dated November 25, 1987, the licensee provided more concise TS changes and answered several NRC originated questions regarding previous submittals. The final submittal dated April 6, 1989, provides concise TS changes concerning increased diesel generator reliability. These TS changes also provide uniformity between the D. C. Cook Nuclear Plant Units 1 and 2.

2.3.2 Evaluation

Action statement 3.8.1.1.a

This action statement for D. C. Cook Units 1 and 2 currently specifies required actions during the inoperability of one offsite circuit or diesel generator.

In proposing changes to this action statement the licensee has distinguished the loss of an offsite circuit from loss of a diesel generator in that the diesel generator power source will be addressed in a new action statement. This is consistent with the current Standard Technical Specification format and is acceptable for D.C. Cook Units 1 and 2.

The licensee has also proposed to perform the surveillance requirement of 4.8.1.1.2.a.4 on each diesel generator within 24 hours instead of one hour and delete the requirement of performing 4.8.1.1.2.a.4 once every eight hours thereafter. The staff finds this change to be consistent with Generic Letter 84-15 and to be acceptable.

Action statement 3.8.1.1.b

This new action statement for D. C. Cook Units 1 and 2 is added as a result of the proposed change to action statement 3.8.1.1.a to address loss of a diesel generator separate from loss of an offsite circuit. As stated in item 1 above, this proposed change to the TSs is acceptable. The licensee has also proposed to perform the surveillance requirements of 4.8.1.1.2.a.4 on the remaining diesel generator within 24 hours instead of one hour if the diesel generator became inoperable due to any cause other than preplanned preventive maintenance or testing and delete the requirement of performing 4.8.1.1.2.a.4 once every 8 hours thereafter. The staff finds this change to be consistent with Generic Letter 84-15 and to be acceptable.

Additionally the licensee has proposed a 168 hours out-of-service action statement for diesel generator inoperability not to exceed an accumulated annual outage time of 576 hours in lieu of current TSs requirement of 72 hours. The staff feels that at present there are no adequate bases to grant D. C. Cook Units 1 and 2 the requested 168 hours out-of-service period for diesel generators. Also, the subject of optimum LCOs for safety-related systems is currently a generic study topic for the staff. Therefore, based on the above, we do not recommend this change to the TSs be granted at this time.

Action statement 3.8.1.1.c

This action statement for D. C. Cook Units 1 and 2 currently requires that when one diesel generator and an offsite power circuit are inoperable, the licensee should demonstrate the operability of the remaining diesel generator per surveillance requirement of 4.8.1.1.2.a.4 within one hour and at least once per eight hours thereafter. The licensee has proposed to demonstrate the diesel generator operability requirement of 4.8.1.1.2.a.4 within eight hours if the diesel generator became inoperable due to any cause other than preplanned preventive maintenance and testing and to delete the requirement of performing 4.8.1.1.2.a.4 once every eight hours thereafter. The staff finds this change to be consistent with Generic Letter 84-15 and to be acceptable.

Action statement 3.8.1.1.d

This action statement for D. C. Cook Units 1 and 2 currently requires that when two offsite circuits are inoperable, the licensee should demonstrate the operability of two diesel generators per surveillance requirement of

4.8.1.1.2.a.4 within one hour and at least eight hours thereafter. The licensee has proposed to demonstrate the operability of two diesel generators per the surveillance requirement of 4.8.1.1.2.a.4 within eight hours (unless the diesel generators are already operating) instead of within one hour and to delete the requirement of performing 4.8.1.1.2.a.4 once every eight hours thereafter. We find this change consistent with Generic Letter 84-15 and to be acceptable.

Action Statement 3.8.1.1.e

This action statement for D. C. Cook Units 1 and 2 is currently not part of the TSs. The licensee has proposed to demonstrate the operability of the two remaining A.C. circuits by performing 4.8.1.1.1.a within one hour if both diesel generators become inoperable and restore at least one diesel generator to operable status within 2 hours or be in Hot Standby within the next 6 hours. We find this change consistent with Generic Letter 84-15 and acceptable.

The remaining TSs changes to section 3.8.1.1 are administrative in nature providing clarity and consistency between both D. C. Cook Unit 1 and Unit 2 TSs.

TS Section 4.8.1.1.2.a.4

This section for D. C. Cook Units 1 and 2 currently requires diesel generator surveillance to be performed from ambient conditions and for the diesel generator to start and accelerate to at least 514 rpm in less than or equal to 10 sec. The proposed change will require starting each diesel generator at least once per 184 days from ambient conditions and accelerating to 514 rpm in less than or equal to 10 sec. We find this change consistent with Generic Letter 84-15 to improve and maintain diesel generator reliability by reducing the number of cold fast starts of diesel generators and to be acceptable.

TS Section 4.8.1.1.2.e.2

This section for Unit 1 currently requires the generator capability to reject a load greater than or equal to 600kW without tripping. The licensee has proposed more conservative requirements including specific voltage and frequency limits that should be met during this test to be consistent with Unit 2 specifications. This surveillance requirement was accepted by the staff on Unit 2 and is also acceptable for Unit 1.

TS Section 4.8.1.1.2.e.3

This new specification with respect to the full load rejection test has been added for Unit 1 specification to be consistent with Unit 2 specifications. The staff finds the proposed change to be acceptable.

TS Section 4.8.1.1.2.e.4.b

This section currently requires that the diesel generator starts on the auto-start signal within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes. The licensee has proposed to add reference to voltage and frequency requirements (for Units 1 and 2) that should be met during this test. The staff finds this change to be more conservative and to be acceptable.

TSs Section 4.8.1.1.2.e.5,6,9 and 10

These specification sections with respect to diesel generator testing have been added for Unit 1 to provide standardization between Unit 1 and 2 specifications. The staff finds these additions to be acceptable. In addition to the above, the licensee has proposed to add reference to voltage and frequency requirements in surveillance requirements of 4.8.1.1.2.e.6.b for Units 1 and 2. The staff finds this change to be conservative and to be acceptable.

TSs Section 4.8.1.1.2.e.7 and 8

These sections for Unit 2 currently require that the diesel generator operates for at least 24 hours. During the first two hours of this test, the diesel generator shall be loaded to 3850kW (2 hour rating) and during the remaining 22 hours of this test, the diesel generator shall be loaded to 3500kW (the continuous rating). The licensee has proposed to perform 24 hour testing at 3500kW and delete 2 hour testing at 3850kW. The licensee has stated that D. C. Cook diesel generators are rated at 3500kW and do not have 2 hour ratings. The manufacturer of the diesel generators will not support diesel generator operation at 3850kW. Moreover, the licensee has demonstrated that the worst case loading of D. C. Cook diesel generators is below the continuous rating of 3500kW. Based on the above, the staff concludes that testing of diesel generators at 3500kW for 24 hours during these surveillance tests is acceptable. In addition, the licensee has proposed to add Section 4.8.1.1.2.e.7 and revised Section 4.8.1.1.2.e.8 of Unit 1 TSs to be consistent with Unit 2 TSs. The staff finds these changes to be acceptable.

As part of this request, the licensee has also proposed to delete surveillance requirements of 4.8.1.1.2.c.2 and 4.8.1.1.2.d for Unit 2 and 4.8.1.1.2.b.6 for Unit 1. The surveillance requirements of 4.8.1.1.2.c.2 and 4.8.1.1.2.b.6 are regarding verification of automatic sequence timing relays to assure they are within $\pm 5\%$ of its required value and surveillance requirements of 4.8.1.1.2.d is regarding 10 year testing. Based on the information provided by the licensee, the staff concludes that there are no adequate basis to delete these surveillance requirements from Unit 1 and Unit 2 TSs. Therefore, this proposed change to the TSs is denied.

Table 4.8.1 & Attachment 1 and 2

This Table and attachments address reporting and requalification requirements for diesel generators. The licensee has proposed to include this table and attachments for D. C. Cook Units 1 and 2 TSs. This Table and attachments were part of the performance specification included in the Generic Letter 84-15. The licensees were requested to provide comments on the performance specification for staff consideration in finalizing surveillance testing requirements for diesel generators. Subsequently, the NRC staff determined that the actions required by the Table and the Attachment 2 were not necessary and the reporting requirements addressed in Attachment 1 were adequately met by current reporting requirements. Therefore, the STS were revised to incorporate the requirements of Generic Letter 84-15 and this table and attachments were not included in this revision of the STS. These proposed changes to D. C. Cook Units 1 and 2 TSs are not required and are therefore denied.

Table 4.8.2

This table addresses diesel generator surveillance testing frequency. The present requirement bases the diesel generator test frequency on the number of failures in the last 100 tests (for Unit 2 only). The licensee has proposed to base the testing frequency in the last 20 tests. The licensee has also included this table in Unit 1 TSs to be consistent with Unit 2 TSs. The staff finds the proposed revised Table 4.8.2 to be consistent with Generic Letter 84-15 and to be acceptable.

In addition to the above proposed TSs changes, the licensee has requested a number of administrative changes to D. C. Cook Units 1 and 2 TSs. These changes are as follows:

A footnote was added on page 3/4 8-2 for Units 1 and 2 to indicate, that as part of the equipment is restored, the plant should return to an early Action statement. This transfer statement also clarifies the starting time.

TS 3.8.2.1 of Unit 1 was changed to be identical to TS 3.8.2.1 currently approved for Unit 2. Also, in TS 4.8.2.1 of Unit 1, the phrase "other than the diesel generators" was deleted. In Unit 2 TS 4.8.2.1 the phrase "and energized from A.C. sources" was added for clarity.

A footnote was added on pages 3/4 8-9 and 8-10 of Units 1 and 2 to clarify that the 120-volt A.C. vital buses are energized from their associated inverter which is connected to a D.C. bus.

TS 3.8.2.2 for Unit 1 was changed to be identical to TS 3.8.2.2 for Unit 2. Also, in Unit 1, the phrase "other than the diesel generator" was deleted. The words "and energized" were added to TS 4.8.2.2 for Unit 2 for clarity.

The qualifier "No" was deleted before the letter "N" on page 3/4 8-16 for Units 1 and 2. This qualifier serves no purpose.

The word "value" is now written each time rather than being indicated by ditto marks on page 3/4 8-12 for Units 1 and 2.

Throughout Section 3/4-8 for Units 1 and 2, hyphens were added where appropriate and the word "greater (or less) than or equal to" were used to replace the mathematical symbols. In addition, the page numbers and table numbers for TS Section 3/4-8 for both were revised for both units due to the addition of a number of new pages to accommodate the proposed changes.

The staff finds the above administrative changes to be acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the installation and use of a facility component located within the restricted area as defined in 10 CFR part 20 and a change 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.

4.0 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, (3) 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: May 31, 1989

Principal Contributors: Anthony T. Gody Jr., NRR/DRSP
Om P. Chopra, NRR/SELB

UNITED STATES NUCLEAR REGULATORY COMMISSIONINDIANA MICHIGAN POWER COMPANYDONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2DOCKET NOS. 50-315 AND 50-316NOTICE OF DENIAL OF REQUEST FOR AMENDMENT TO FACILITY OPERATINGLICENSE AND OPPORTUNITY FOR HEARING

The U.S. Nuclear Regulatory Commission (the Commission) has denied, in part, a request by the Indiana Michigan Power Company for an amendment to Facility Operating License Nos. DPR-58 and DPR-74, issued to the Indiana Michigan Power Company (the licensee), for the operation of the Donald C. Cook Nuclear Plant, Units 1 and 2 (the facilities), located in Berrien County, Michigan.

The proposed amendments would provide upgraded Technical Specifications (TSs) to promote diesel generator reliability as a result of Generic Letter 84-15. Additionally, changes in the AC and DC distribution systems are to provide standardization between Unit 1 and 2. The licensee's application for the amendments was dated January 16, 1987, and supplemented on June 25, September 28, and November 25, 1987, October 31, 1988, and January 24, March 23, and April 6, 1989. Notice of consideration of issuance of these amendments was published in the FEDERAL REGISTER on February 26, 1987 (52 FR 5857), July 29, 1987 (52 FR 28380), and December 30, 1987 (52 FR 49227).

The proposed amendments, in part, would delete several Technical Specifications (TSs) which determine the operability of the emergency load sequencing and timing circuits and provide detection of diesel generator interdependence in TSs 4.8.1.1.2.c.2 (Unit 2), 4.8.1.1.2.b.6 (Unit 1), and

4.8.1.1.2.d (Unit 2), respectively. The Commission has determined that inclusion of these TSs is necessary to provide assurance of the availability of the safety functions provided by the diesel generators and, therefore, shall not be deleted. Another proposed change to the TSs denied was the increase in time from 72 hours to 168 hours for restoration of an inoperable diesel generator.

All other provisions of the amendment request have been approved by Amendment Nos. 125 and 112 dated May 31, 1989. Notice of Issuance of Amendment Nos. 125 and 112 will be published in the Commission's biweekly FEDERAL REGISTER notice.

Indiana Michigan Power Company was notified of the Commission's denial of the proposed TSs changes by letter dated May 31, 1989.

By June 30, 1989, the licensee may request a hearing with respect to the denial described above and any person whose interest may be affected by this proceeding may file a written petition for leave to intervene.

A request for hearing or petition for leave to intervene must be filed with the Secretary of the Commission, U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Docketing and Service Branch, or may be delivered to the Commission's Public Document Room, 2120 L Street, N.W., Washington, D.C., by the above date.

A copy of the petition should also be sent to the Office of the General Counsel, U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, and to Gerald Charnoff, Esq., Shaw, Pittman, Potts and Trowbrige, 2300 N Street, N.W., Washington, D.C. 20037, attorney for the licensee.

For further details with respect to this action, see (1) the application for amendments dated January 16, 1987, and supplemented on June 25, September 28, and November 25, 1987, October 31, 1988 and January 24, March 23, and April 6,

1989, and (2) the Commission's letter to Indiana Michigan Power Company dated May 31, 1989, which are available for public inspection at the Commission's Public Document Room, 2120 L Street, N.W., Washington, D.C., and at the Maude Preston Palenske Memorial Library, 500 Market Street, St. Joseph, Michigan 49085. A copy of item (2) may be obtained upon written request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Reactor Projects - III, IV, V and Special Projects.

Dated at Rockville, Maryland, this 31st day of May 1989.

FOR THE NUCLEAR REGULATORY COMMISSION



Lawrence A. Yandell, Acting Director
Project Directorate III-1
Division of Reactor Projects - III,
IV, V, and Special Projects
Office of Nuclear Reactor Regulation



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

May 31, 1989

Dockets Nos. 50-315
and 50-316

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. 125 AND 112 TO FACILITY OPERATING LICENSES NOS.
DPR-58 AND DPR-74: (TACS NOS. 64515 AND 64516)

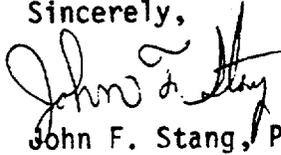
The Commission has issued the enclosed Amendment No. 125 to Facility Operating License No. DPR-58 and Amendment No. 112 to Facility Operating License No. DPR-74 for the Donald C. Cook Nuclear Plant, Units Nos. 1 and 2. The amendments consist of changes to the Technical Specifications (TSs) in response to your applications dated January 16, 1987 and supplemented on June 25, September 28, and November 25, 1987, October 31, 1988, and January 24, March 23, and April 6, 1989.

The amendments provide upgraded TSs to promote diesel generator reliability (TS 3/4.8.1) as a result of Generic Letter 84-15. Additionally, changes in 3/4.8.2 and 3/4.8.3, (the AC and DC distribution systems) are to provide standardization between Unit 1 and 2, to clarify certain TSs, and to make editorial changes.

The Commission has denied several changes as requested in your application concerning the TS changes in sections 3.8.1.1.b, 4.8.1.1.2.c.2 (Unit 2), 4.8.1.1.2.d (Unit 2), and 4.8.1.1.2.b.6 (Unit 1)

A copy of our related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice. A separate Notice of Denial of Amendment (copy enclosed) is being forwarded to the Office of the Federal Register for publication.

Sincerely,



John F. Stang, Project Manager
Project Directorate III-1
Division of Reactor Projects - III, IV, V
& Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 125 to DPR-58
2. Amendment No. 112 to DPR-74
3. Safety Evaluation
4. Notice of Denial

cc w/enclosures:
See next page

Mr. Milton Alexich
Indiana Michigan Power Company

Donald C. Cook Nuclear Plant

cc:

Regional Administrator, Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Mr. S. Brewer
American Electric Power
Service Corporation
1 Riverside Plaza
Columbus, Ohio 43216

Attorney General
Department of Attorney General
525 West Ottawa Street
Lansing, Michigan 48913

Township Supervisor
Lake Township Hall
Post Office Box 818
Bridgeman, Michigan 49106

W. G. Smith, Jr., Plant Manager
Donald C. Cook Nuclear Plant
Post Office Box 458
Bridgman, Michigan 49106

U.S. Nuclear Regulatory Commission
Resident Inspectors Office
7700 Red Arrow Highway
Stevensville, Michigan 49127

Gerald Charnoff, Esquire
Shaw, Pittman, Potts and Trowbridge
2300 N Street, N.W.
Washington, DC 20037

Mayor, City of Bridgeman
Post Office Box 366
Bridgeman, Michigan 49106

Special Assistant to the Governor
Room 1 - State Capitol
Lansing, Michigan 48909

Nuclear Facilities and Environmental
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. 125
License No. DPR-58

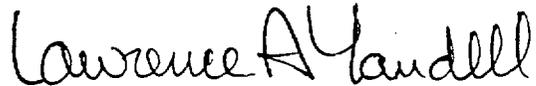
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The applications for amendment by Indiana Michigan Power Company (the licensee) dated January 16, June 25, September 28, and November 25, 1987, October 31, 1988, and January 24, March 23, and April 6, 1989, comply with the standards 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. 125, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment becomes effective 60 days from the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Lawrence A. Yandell, 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: May 31, 1989

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 125 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

Index page IX

3/4 8-1 through 8-16

INSERT

Index page IX

3/4 8-1 through 8-20

B3/4 8-2

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

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Spray and/or Sprinkler Systems.....	3/4 7-44
Low Pressure CO ₂ Systems.....	3/4 7-47
Halon System.....	3/4 7-49
Fire Hose Stations.....	3/4 7-50
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<u>3/4.8 ELECTRICAL POWER SYSTEMS</u>	
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3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Two separate and independent diesel generators, each with:
 1. A separate day fuel tank containing a minimum volume of 70 gallons of fuel,
 2. A separate fuel storage system* containing a minimum volume of 42,000 gallons of fuel, and
 3. A separate fuel transfer pump.

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

ACTION:

- a. With an offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours; restore at least two offsite circuits and two diesel generators 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.
- b. With a diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours; restore diesel generators 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. At the number of failures for the inoperable diesel indicated in Table 4.8-1 perform the Additional Reliability Actions prescribed in Table 4.8-1.

*Tanks are separate between diesels but shared between Units 1 and 2.

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

- c. With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter and if the diesel generator became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With the diesel generator restored to OPERABLE status, follow ACTION Statement a.* With the offsite circuit restored to OPERABLE status, follow ACTION Statement b.*
- d. With two of the above required offsite A.C. circuits inoperable, demonstrate the OPERABILITY of two diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours unless the diesel generators are already operating. Restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite source restored, follow ACTION Statement a.*
- e. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With one diesel generator unit restored, follow ACTION Statement b* or c.*

* The ACTION statement time shall be based upon the time associated with the component inoperability, and is not reset when exiting this ACTION statement.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability, and
- b. Demonstrated OPERABLE at least once per 18 months by transferring the unit power source automatically from the normal auxiliary source to the preferred reserve source and by transferring manually to the alternate reserve source.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

- a. In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:
 1. Verifying the fuel level in the day tank,
 2. Verifying the fuel level in the fuel storage tank,
 3. Verifying that the fuel transfer pump can be started and that it transfers fuel from the storage system to the day tank,
 4. Verifying that the diesel starts from ambient condition and that it accelerates to at least 514 rpm in less than or equal to 10 seconds,*
 5. Verifying that the generator is loaded to greater than or equal to 1750 kw and that it operates for greater than or equal to 60 minutes and verifying that the generator output breaker to the emergency bus is OPERABLE, and
 6. Verifying that the diesel generator is aligned to provide standby power to the associated emergency busses.
- b. By removing accumulated water**:
 - 1) From the day tank at least once per 31 days and after each occasion when the diesel is operated for greater than 1 hour, and
 - 2) From the storage tanks at least once per 31 days.
- c. By sampling new fuel oil** in accordance with the applicable guidelines of ASTM D4057-81 prior to adding new fuel to the storage tanks and
 - 1) By verifying, in accordance with the tests specified in ASTM D975-81 and prior to adding the new fuel to the storage tanks, that the sample has:

*The diesel generator start (10 seconds) from ambient conditions shall be performed at least once per 184 days in these surveillance tests. All other engine starts for the purpose of this surveillance testing and compensatory action may be at reduced acceleration rates as recommended by the manufacturer so that mechanical stress and wear on the diesel engine are minimized.

**The actions to be taken should any of the properties be found outside of specified limits are defined in the Bases.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- a) A kinematic viscosity of greater than or equal to 1.9 centistokes but less than or equal to 4.1 centistokes at 40°C (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6 but less than or equal to 40.1), if gravity was not determined by comparison with supplier's certification.
- b) A flash point equal to or greater than 125°F.
- 2) By verifying, in accordance with the test specified in ASTM D1298-80 and prior to adding the new fuel to the storage tanks, that the sample has either an API gravity of greater than or equal to 30 degrees but less than or equal to 40 degrees at 60°F or an absolute specific gravity at 60/60°F of greater than or equal to 0.82 but less than or equal to 0.88, or an API gravity of within 0.3 degrees at 60°F when compared to the supplier's certificate or a specific gravity of within 0.0016 at 60/60°F when compared to the supplier's certificate.
- 3) By verifying, in accordance with the test specified in ASTM D4176-82 and prior to adding new fuel to the storage tanks, that the sample has a clear and bright appearance with proper color.
- 4) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are within the appropriate limits when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D2622-82.
- d. At least once per 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-83, and verifying that total particulate contamination is less than 10 mg/liter when tested in accordance with ASTM D2276-83, Method A*.
- e. At least once per 18 months, during shutdown, by:
 1. Subjecting the diesel engine to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service,

*The actions to be taken should any of the properties be found outside of the specified limits are defined in the Bases.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying the generator capability to reject a load greater than or equal to 600 kw while maintaining voltage at 4160 ± 420 volts and frequency at 60 ± 1.2 Hz,
3. Verifying the generator capability to reject a load of 3500 kw without exceeding 75% of the difference between nominal speed and the overspeed trip setpoint,
4. Simulating a loss of offsite power by itself, and:
 - a) Verifying de-energization of the emergency busses and load shedding from the emergency busses,
 - b) Verifying that the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After load sequencing is completed, the steady state voltage and frequency of the emergency busses shall be maintained at 4160 ± 420 volts and 60 ± 1.2 Hz during the test.
5. Verifying that, on a Safety Injection actuation test signal (without loss of offsite power), the diesel generator starts on the auto-start signal and operates on standby for greater than or equal to 5 minutes,
6. Simulating a loss of offsite power in conjunction with a Safety Injection actuation test signal, and by:
 - a) Verifying de-energization of the emergency busses and load shedding from the emergency busses,
 - b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After load sequencing is completed, the steady state voltage and frequency of the emergency busses shall be 4160 ± 420 volts and 60 ± 1.2 Hz. The voltage and frequency shall be maintained within these limits for the remainder of this test, and

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus and/or Safety Injection actuation signal.
- 7. Verifying that the diesel generator operates for at least 24 hours. During this test the diesel generator shall be loaded to 3500 kw. Within 5 minutes after completing this 24-hour test, perform Surveillance Requirement 4.8.1.1.2.e.4.
- 8. Determine that the auto-connected loads to each diesel generator do not exceed 3500 kw.
- 9. Verifying the diesel generator's capability to:
 - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power.
 - b) Transfer its loads to the offsite power source, and
 - c) Be restored to its standby status.
- 10. Verifying that with the diesel generator operating in a test mode while connected to its test load, a simulated Safety Injection signal overrides the test mode by:
 - a) Returning the diesel generator to standby operation, and
 - b) Verifying the emergency loads are serviced by offsite power.
- 11. Verifying that the automatic sequence timing relays are OPERABLE with each load sequence time within plus or minus 5% of its required value and that each load is sequenced on within the design allowable time limit.
- f. At least once per 10 years by:
 - 1) Employing one of the following cleaning methods to clean the fuel oil storage tanks:
 - a) Drain each fuel oil storage tank, remove the accumulated sediment, and clean the tank, or

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b) Agitate the fuel oil in the storage tank while pumping the oil from the bottom of the tank through a 5-micron filter, and back to the opposite end of the tank. Three successive samples shall be taken and analyzed according to ASTM D2276-83. If the contaminant level in any of the samples is greater than 10 mg per liter, the agitation, filtration, and sampling processes shall be repeated. If the contaminant level remains above 10 mg per liter after 3 iterations, the draining and cleaning method described in surveillance requirement 4.8.1.1.2.f.1.a shall be employed.
- 2) Performing a precision leak detection test to verify that the leakage rate from the fuel oil system is less than or equal to .05 gallons per hour.
- 3) Starting both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 514 RPM in less than or equal to 10 seconds.*

*Shall be performed after any modifications which could affect diesel generator interdependence.

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

<u>Number of Failures in Last 20 Valid Tests*</u>	<u>Test Frequency</u>
Less than or equal to 1	At least once per 31 days
Greater than or equal to 2	At least once per 7 days**

*Criteria for determining number of failures and number of valid tests shall be in accordance with Regulatory Position C.2.e of Regulatory Guide 1.108, Revision 1, August 1977, where the number of tests and failures is determined on a per diesel generator basis. For the purposes of this test schedule, only valid tests conducted after the OL issuance date shall be included in the computation of the "last 20 valid tests."

**This test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one or less.

ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and
- b. One diesel generator with:
 1. A day fuel tank containing a minimum of 70 gallons of fuel,
 2. A fuel storage system containing a minimum of 42,000 gallons of fuel, and
 3. A fuel transfer pump.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes* until the minimum required A.C. electrical power sources are restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5.

*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.

ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.1 The following A.C. electrical busses shall be OPERABLE and energized with tie breakers open between redundant busses:

4160-volt Emergency Bus #T 11A & T 11B

4160-volt Emergency Bus #T 11C & T 11D

600-volt Emergency Bus #11A & 11B

600-volt Emergency Bus #11C & 11D

*120-volt A.C. Vital Bus #Channel I

*120-volt A.C. Vital Bus #Channel II

*120-volt A.C. Vital Bus #Channel III

*120-volt A.C. Vital Bus #Channel IV

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With less than the above complement of A.C. busses OPERABLE, restore the inoperable bus to OPERABLE status within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.1 The specified A.C. busses shall be determined OPERABLE and energized from A.C. sources with tie breakers open between redundant busses at least once per 7 days by verifying correct breaker alignment and indicated power availability.

*Energized from its associated inverter connected to a DC bus.

ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, the following A.C. electrical busses shall be OPERABLE and energized:

- 1 - 4160-volt Emergency Bus, and
- 1 - 600-volt Emergency Bus, and
- 2 -*120-volt A.C. Vital Busses.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above complement of A.C. busses OPERABLE and energized, establish CONTAINMENT INTEGRITY within 8 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.2 The specified A.C. busses shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

*Energized from its associated inverter connected to a DC bus.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.3 The following D.C. bus trains shall be energized and OPERABLE with tie breakers between bus trains open:

TRAIN AB consisting of 250-volt D.C. bus AB, 250-volt D.C. battery bank No. 1AB, and a full capacity charger, and

TRAIN CD consisting of 250-volt D.C. bus CD, 250-volt D.C. battery bank No. 1CD, and a full capacity charger.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION

- a. With one 250-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one 250-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

- 4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability.
- 4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE
 - a. At least once per 7 days by verifying that:
 1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. The pilot cell specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,
 3. The pilot cell voltage is greater than or equal to 2.10 volts, and
 4. The overall battery voltage is greater than or equal to 250 volts.
- b. At least once per 92 days by verifying that:
1. The voltage of each connected cell is greater than or equal to 2.10 volts under float charge and has not decreased more than 0.05 volts from the value observed during the original acceptance test, and
 2. The specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and
 3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.
- c. At least once per 18 months by verifying that:
1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration,
 2. The cell-to-cell and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material,
 3. The battery charger will supply at least 140 amperes at greater than or equal to 250 volts for at least 4 hours.
- d. At least once per 18 months, perform a battery service test during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the times specified in Table 4.8-2 with the battery charger disconnected. The battery terminal voltage shall be maintained greater than or equal to 210 volts throughout this test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- e. At least once per 60 months, perform a battery discharge test during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. This performance discharge test shall be performed in place of the battery service test.

TABLE 4.8-2

BATTERY EMERGENCY LOADS

<u>AB Battery Loads</u>	<u>Minimum Time</u>
1. Channel III static inverter	3 hrs
2. Channel IV static inverter	3 hrs
3. Computer static inverter*	3 hrs
4. Feed pump turbine 1E oil pump	1 hr
5. Control room emergency lighting	8 hrs
6. Main turbine backup oil pump	3 hrs
7. Isolation valve control	8 hrs
8. All control circuits	8 hrs
 <u>CD Battery Loads</u>	
1. Channel I static inverter	3 hrs
2. Channel II static inverter	3 hrs
3. BOP static inverter*	3 hrs
4. Feed pump turbine 1W oil pump	1 hr
5. Generator seal oil pump	8 hrs
6. Turbine emergency oil pump	3 hrs
7. Isolation valves	8 hrs
8. Annunciators	8 hrs
9. All control circuits	8 hrs

* AC power sources to the inverters shall be turned off at the start of the test and may be turned on at the end of the specified time interval. Inverters may be left in this operating mode for the duration of the discharge test.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.4 As a minimum, the following D.C. electrical equipment and bus shall be energized and OPERABLE:

- 1 - 250-volt D.C. bus, and
- 1 - 250-volt battery bank and charger associated with the above D.C. bus.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above complement of D.C. equipment and bus OPERABLE, establish CONTAINMENT INTEGRITY within 8 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 250-volt D.C. bus shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING - TRAIN N BATTERY SYSTEM

LIMITING CONDITIION FOR OPERATION

3.8.2.5 The following D.C. bus train shall be energized and OPERABLE:

TRAIN N consisting of 250-volt D.C. bus N, 250-volt D.C. battery bank N, and a full capacity charger.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

With the Train N battery system inoperable, declare the turbine driven Auxiliary Feedwater Pump inoperable and follow the ACTION statement of Specification 3.7.1.2.

SURVEILLANCE REQUIREMENTS

4.8.2.5.1 The D.C. bus train N shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.5.2 The 250-volt battery bank and charger shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying that:

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,
2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

3. The pilot cell voltage is greater than or equal to 2.10 volts, and
 4. The overall battery voltage is greater than or equal to 250 volts.
- b. At least once per 92 days by verifying that:
1. The voltage of each connected cell is greater than or equal to 2.10 volts under float charge and has not decreased more than 0.05 volts from the value observed during the original acceptance test, and
 2. The specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and
 3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.
- c. At least once per 18 months by verifying that:
1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration.
 2. The cell-to-cell and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material.
 3. The battery charger will supply at least 10 amperes at greater than or equal to 250 volts for at least 4 hours.
- d. At least once per 18 months perform a battery service test, during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the times specified of Table 4.8-3 with the battery charger disconnected. The battery terminal voltage shall be maintained greater than or equal to 210 volts throughout the battery service test.
- e. At least once per 60 months, perform a battery discharge test during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. This performance discharge test shall be performed in place of the battery service test.

TABLE 4.8-3

BATTERY EMERGENCY LOADS

<u>"N" Battery Loads</u>	<u>Minimum Time</u>
Auxiliary feedwater turbine control bus	4 hours
FMO-211 valve	*
FMO-221 valve	*
FMO-231 valve	*
FMO-241 valve	*
TDTV valve	*

*Valves will be operated through the following sequence:

1. Beginning of test: open valves
2. Five minutes after the beginning of the test: close the valves.
3. Ten minutes after the beginning of the test: reopen the valves.
4. Four hours after the beginning of the test: close the valves.

End of the test.

ELECTRICAL POWER SYSTEMS

3/4.8.3 Alternative A.C. Power Sources

LIMITING CONDITION FOR OPERATION

3.8.3.1 The steady state bus voltage for the manual alternate reserve source* shall be greater than or equal to 90% of the nominal bus voltage.

APPLICABILITY: Whenever the manual alternate reserve source (69 kV) is connected to more than two buses.

ACTION: With bus voltage less than 90% nominal, adjust load on the remaining buses to maintain steady state bus voltage greater than or equal to 90% limit.

SURVEILLANCE REQUIREMENTS

4.8.3.1 No additional surveillance requirements other than those required by Specifications 4.8.1.1.1 and 4.8.1.2.

*Shared with D. C. Cook Unit 2.

ELECTRICAL POWER SYSTEMS (Continued)

BASES

Removal of accumulated water as required by 4.8.1.1.2.b.2 is performed by drawing the contents off the bottom of the tank until acceptable results are obtained for either a tape test or a water and sediment test. An acceptable result for the water and sediment content is a measured value less than 0.05 percent volume.

The sample specified in 4.8.1.1.2.c.4 is sent offsite for testing. A serious attempt will be made to meet the 31-day limit on the offsite tests; however, if for some reason this limit is not met (e.g., if the sample is lost or broken or if the results are not received in 31 days), the diesel generators should not be considered inoperable. If the sample is lost, broken, or fails the offsite tests and the new oil has already been put into the storage tank, the offsite tests will be performed on a sample taken from the storage tank. If the results on the subsequent storage tank sample are not within specified limits, the diesel generators should be considered OPERABLE and the out-of-spec properties should be returned to within specification as soon as possible.

If the monthly storage tank sample taken in accordance with Specification 4.8.1.1.2.d fails the particulate contamination test, the diesel generators should be considered OPERABLE and the contamination level should be restored to below 10 mg/liter as soon as possible.

The precision leak-detection test described in Surveillance Requirement 4.8.1.1.2.f.2 should be performed as described in NFPA (National Fire Protection Association) -329. As NFPA-329 is revised, the precision leak-detection test may be modified to incorporate changes to the test as described in the revisions to NFPA-329.



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. 112
License No. DPR-74

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The applications for amendment by Indiana Michigan Power Company (the licensee) dated January 16, June 25, September 28, and November 25, 1987, October 31, 1988, and January 24, March 23, and April 6, 1989, comply 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. 112, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment becomes effective 60 days from the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Lawrence A. Yandell, 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: May 31, 1989

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 112 TO 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

Index page IX

Index page IX

3/4 8-1 through 8-16

3/4 8-1 through 8-20

B3/4 8-2

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3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Two separate and independent diesel generators, each with:
 1. A separate day fuel tank containing a minimum volume of 70 gallons of fuel,
 2. A separate fuel storage system* containing a minimum volume of 42,000 gallons of fuel, and
 3. A separate fuel transfer pump.

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

ACTION:

- a. With an offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours; restore at least two offsite circuits and two diesel generators 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.
- b. With a diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours; restore diesel generators 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. At the number of failures for the inoperable diesel indicated in Table 4.8-1 perform the Additional Reliability Actions prescribed in Table 4.8-1.

*Tanks are separate between diesels but shared between Units 1 and 2.

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

- c. With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter and if the diesel generator became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With the diesel generator restored to OPERABLE status, follow ACTION Statement a.* With the offsite circuit restored to OPERABLE status, follow ACTION Statement b.*
- d. With two of the above required offsite A.C. circuits inoperable, demonstrate the OPERABILITY of two diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours unless the diesel generators are already operating. Restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite source restored, follow ACTION Statement a.*
- e. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With one diesel generator unit restored, follow ACTION Statement b* or c.*

* The ACTION statement time shall be based upon the time associated with the component inoperability, and is not reset when exiting this ACTION statement.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability, and
- b. Demonstrated OPERABLE at least once per 18 months by transferring the unit power source automatically from the normal auxiliary source to the preferred reserve source and by transferring manually to the alternate reserve source.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

- a. In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:
 1. Verifying the fuel level in the day tank,
 2. Verifying the fuel level in the fuel storage tank,
 3. Verifying that the fuel transfer pump can be started and that it transfers fuel from the storage system to the day tank,
 4. Verifying that the diesel starts from ambient condition and that it accelerates to at least 514 rpm in less than or equal to 10 seconds,*
 5. Verifying that the generator is loaded to greater than or equal to 1750 kw and that it operates for greater than or equal to 60 minutes and verifying that the generator output breaker to the emergency bus is OPERABLE, and
 6. Verifying that the diesel generator is aligned to provide standby power to the associated emergency busses.
- b. By removing accumulated water**:
 - 1) From the day tank at least once per 31 days and after each occasion when the diesel is operated for greater than 1 hour, and
 - 2) From the storage tanks at least once per 31 days.
- c. By sampling new fuel oil** in accordance with the applicable guidelines of ASTM D4057-81 prior to adding new fuel to the storage tanks and
 - 1) By verifying, in accordance with the tests specified in ASTM D975-81 and prior to adding the new fuel to the storage tanks, that the sample has:

*The diesel generator start (10 seconds) from ambient conditions shall be performed at least once per 184 days in these surveillance tests. All other engine starts for the purpose of this surveillance testing and compensatory action may be at reduced acceleration rates as recommended by the manufacturer so that mechanical stress and wear on the diesel engine are minimized.

**The actions to be taken should any of the properties be found outside of specified limits are defined in the Bases.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- a) A kinematic viscosity of greater than or equal to 1.9 centistokes but less than or equal to 4.1 centistokes at 40°C (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6 but less than or equal to 40.1), if gravity was not determined by comparison with supplier's certification.
- b) A flash point equal to or greater than 125°F.
- 2) By verifying, in accordance with the test specified in ASTM D1298-80 and prior to adding the new fuel to the storage tanks, that the sample has either an API gravity of greater than or equal to 30 degrees but less than or equal to 40 degrees at 60°F or an absolute specific gravity at 60/60°F of greater than or equal to 0.82 but less than or equal to 0.88, or an API gravity of within 0.3 degrees at 60°F when compared to the supplier's certificate or a specific gravity of within 0.0016 at 60/60°F when compared to the supplier's certificate.
- 3) By verifying, in accordance with the test specified in ASTM D4176-82 and prior to adding new fuel to the storage tanks, that the sample has a clear and bright appearance with proper color.
- 4) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are within the appropriate limits when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D2622-82.
- d. At least once per 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-83, and verifying that total particulate contamination is less than 10 mg/liter when tested in accordance with ASTM D2276-83, Method A*.
- e. At least once per 18 months, during shutdown, by:
 1. Subjecting the diesel engine to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service,

*The actions to be taken should any of the properties be found outside of the specified limits are defined in the Bases.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying the generator capability to reject a load greater than or equal to 600 kw while maintaining voltage at 4160 ± 420 volts and frequency at 60 ± 1.2 Hz,
3. Verifying the generator capability to reject a load of 3500 kw without exceeding 75% of the difference between nominal speed and the overspeed trip setpoint,
4. Simulating a loss of offsite power by itself, and:
 - a) Verifying de-energization of the emergency busses and load shedding from the emergency busses,
 - b) Verifying that the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After load sequencing is completed, the steady state voltage and frequency of the emergency busses shall be maintained at 4160 ± 420 volts and 60 ± 1.2 Hz during the test.
5. Verifying that, on a Safety Injection actuation test signal (without loss of offsite power), the diesel generator starts on the auto-start signal and operates on standby for greater than or equal to 5 minutes,
6. Simulating a loss of offsite power in conjunction with a Safety Injection actuation test signal, and by:
 - a) Verifying de-energization of the emergency busses and load shedding from the emergency busses,
 - b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After load sequencing is completed, the steady state voltage and frequency of the emergency busses shall be 4160 ± 420 volts and 60 ± 1.2 Hz. The voltage and frequency shall be maintained within these limits for the remainder of this test, and

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus and/or Safety Injection actuation signal.
- 7. Verifying that the diesel generator operates for at least 24 hours. During this test the diesel generator shall be loaded to 3500 kw. Within 5 minutes after completing this 24-hour test, perform Surveillance Requirement 4.8.1.1.2.e.4.
 - 8. Determine that the auto-connected loads to each diesel generator do not exceed 3500 kw.
 - 9. Verifying the diesel generator's capability to:
 - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power.
 - b) Transfer its loads to the offsite power source, and
 - c) Be restored to its standby status.
 - 10. Verifying that with the diesel generator operating in a test mode while connected to its test load, a simulated Safety Injection signal overrides the test mode by:
 - a) Returning the diesel generator to standby operation, and
 - b) Verifying the emergency loads are serviced by offsite power.
 - 11. Verifying that the automatic sequence timing relays are OPERABLE with each load sequence time within plus or minus 5% of its required value and that each load is sequenced on within the design allowable time limit.
- f. At least once per 10 years by:
 - 1) Employing one of the following cleaning methods to clean the fuel oil storage tanks:
 - a) Drain each fuel oil storage tank, remove the accumulated sediment, and clean the tank, or

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b) Agitate the fuel oil in the storage tank while pumping the oil from the bottom of the tank through a 5-micron filter, and back to the opposite end of the tank. Three successive samples shall be taken and analyzed according to ASTM D2276-83. If the contaminant level in any of the samples is greater than 10 mg per liter, the agitation, filtration, and sampling processes shall be repeated. If the contaminant level remains above 10 mg per liter after 3 iterations, the draining and cleaning method described in surveillance requirement 4.8.1.1.2.f.1.a shall be employed.
- 2) Performing a precision leak detection test to verify that the leakage rate from the fuel oil system is less than or equal to .05 gallons per hour.
- 3) Starting both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 514 RPM in less than or equal to 10 seconds.*

*Shall be performed after any modifications which could affect diesel generator interdependence.

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

<u>Number of Failures in Last 20 Valid Tests*</u>	<u>Test Frequency</u>
Less than or equal to 1	At least once per 31 days
Greater than or equal to 2	At least once per 7 days**

*Criteria for determining number of failures and number of valid tests shall be in accordance with Regulatory Position C.2.e of Regulatory Guide 1.108, Revision 1, August 1977, where the number of tests and failures is determined on a per diesel generator basis. For the purposes of this test schedule, only valid tests conducted after the OL issuance date shall be included in the computation of the "last 20 valid tests."

**This test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one or less.

ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and
- b. One diesel generator with:
 1. A day fuel tank containing a minimum of 70 gallons of fuel,
 2. A fuel storage system containing a minimum of 42,000 gallons of fuel, and
 3. A fuel transfer pump.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes* until the minimum required A.C. electrical power sources are restored to OPERABLE status.

*

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5.

*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.

ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.1 The following A.C. electrical busses shall be OPERABLE and energized with tie breakers open between redundant busses:

4160-volt Emergency Bus #T 21A & T 21B

4160-volt Emergency Bus #T 21C & T 21D

600-volt Emergency Bus #21A & 21B

600-volt Emergency Bus #21C & 21D

*120-volt A.C. Vital Bus #Channel I

*120-volt A.C. Vital Bus #Channel II

*120-volt A.C. Vital Bus #Channel III

*120-volt A.C. Vital Bus #Channel IV

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With less than the above complement of A.C. busses OPERABLE, restore the inoperable bus to OPERABLE status within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.1 The specified A.C. busses shall be determined OPERABLE and energized from A.C. sources with tie breakers open between redundant busses at least once per 7 days by verifying correct breaker alignment and indicated power availability.

*Energized from its associated inverter connected to a DC bus.

ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, the following A.C. electrical busses shall be OPERABLE and energized:

- 1 - 4160-volt Emergency Bus, and
- 1 - 600-volt Emergency Bus, and
- 2 -*120-volt A.C. Vital Busses.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above complement of A.C. busses OPERABLE and energized, establish CONTAINMENT INTEGRITY within 8 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.2 The specified A.C. busses shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

*Energized from its associated inverter connected to a DC bus.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.3 The following D.C. bus trains shall be energized and OPERABLE with tie breakers between bus trains open:

TRAIN AB consisting of 250-volt D.C. bus AB, 250-volt D.C. battery bank No. 2AB, and a full capacity charger, and

TRAIN CD consisting of 250-volt D.C. bus CD, 250-volt D.C. battery bank No. 2CD, and a full capacity charger.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION

- a. With 250-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one 250-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE

- a. At least once per 7 days by verifying that:
 1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. The pilot cell specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,
 3. The pilot cell voltage is greater than or equal to 2.10 volts, and
 4. The overall battery voltage is greater than or equal to 250 volts.
- b. At least once per 92 days by verifying that:
1. The voltage of each connected cell is greater than or equal to 2.10 volts under float charge and has not decreased more than 0.05 volts from the value observed during the original acceptance test, and
 2. The specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and
 3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.
- c. At least once per 18 months by verifying that:
1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration,
 2. The cell-to-cell and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material,
 3. The battery charger will supply at least 140 amperes at greater than or equal to 250 volts for at least 4 hours.
- d. At least once per 18 months, perform a battery service test during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the times specified in Table 4.8-2 with the battery charger disconnected. The battery terminal voltage shall be maintained greater than or equal to 210 volts throughout this test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- e. At least once per 60 months, perform a battery discharge test during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. This performance discharge test shall be performed in place of the battery service test.

TABLE 4.8-2

BATTERY EMERGENCY LOADS

<u>AB Battery Loads</u>	<u>Minimum Time</u>
1. Channel III static inverter	3 hrs
2. Channel IV static inverter	3 hrs
3. Computer static inverter*	3 hrs
4. Bop static inverter*	3 hrs
5. Feed pump turbine 2E oil pump	1 hr
6. Control room emergency lighting	8 hrs
7. Main turbine emergency oil pump	3 hrs
8. Isolation valve control	8 hrs
9. All control circuits	8 hrs
<u>CD Battery Loads</u>	
1. Channel I static inverter	3 hrs
2. Channel II static inverter	3 hrs
3. Feed pump turbine 2W oil pump	1 hr
4. Generator seal oil pump	5 hrs
5. Main turbine emergency oil pump	3 hrs
6. Isolation valves	8 hrs
7. Annunciators	8 hrs
8. All control circuits	8 hrs

* AC power sources to the inverters shall be turned off at the start of the test and may be turned on at the end of the specified time interval. Inverters may be left in this operating mode for the duration of the discharge test.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN:

LIMITING CONDITION FOR OPERATION

3.8.2.4 As a minimum, the following D.C. electrical equipment and bus shall be energized and OPERABLE:

- 1 - 250-volt D.C. bus, and
- 1 - 250-volt battery bank and charger associated with the above D.C. bus.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above complement of D.C. equipment and bus OPERABLE; establish CONTAINMENT INTEGRITY within 8 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 250-volt D.C. bus shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING - TRAIN N BATTERY SYSTEM

LIMITING CONDITIION FOR OPERATION

3.8.2.5 The following D.C. bus train shall be energized and OPERABLE:

TRAIN N consisting of 250-volt D.C. bus N, 250-volt D.C. battery bank N, and a full capacity charger.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

With the Train N battery system inoperable, declare the turbine driven Auxiliary Feedwater Pump inoperable and follow the ACTION statement of Specification 3.7.1.2.

SURVEILLANCE REQUIREMENTS

- 4.8.2.5.1 The D.C. bus train N shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.
- 4.8.2.5.2 The 250-volt battery bank and charger shall be demonstrated OPERABLE:
- a. At least once per 7 days by verifying that:
 1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,
 2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

3. The pilot cell voltage is greater than or equal to 2.10 volts, and
 4. The overall battery voltage is greater than or equal to 250 volts.
- b. At least once per 92 days by verifying that:
1. The voltage of each connected cell is greater than or equal to 2.10 volts under float charge and has not decreased more than 0.05 volts from the value observed during the original acceptance test, and
 2. The specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and
 3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.
- c. At least once per 18 months by verifying that:
1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration.
 2. The cell-to-cell and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material.
 3. The battery charger will supply at least 10 amperes at greater than or equal to 250 volts for at least 4 hours.
- d. At least once per 18 months perform a battery service test, during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the times specified of Table 4.8-3 with the battery charger disconnected. The battery terminal voltage shall be maintained greater than or equal to 210 volts throughout the battery service test.
- e. At least once per 60 months, perform a battery discharge test during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. This performance discharge test shall be performed in place of the battery service test.

TABLE 4.8-3

BATTERY EMERGENCY LOADS

<u>"N" Battery Loads</u>	<u>Minimum Time</u>
Auxiliary feedwater turbine control bus	4 hours
FMO-211 valve	*
FMO-221 valve	*
FMO-231 valve	*
FMO-241 valve	*
TDTV valve	*

*Valves will be operated through the following sequence:

1. Beginning of test: open valves
2. Five minutes after the beginning of the test: close the valves.
3. Ten minutes after the beginning of the test: reopen the valves.
4. Four hours after the beginning of the test: close the valves.

End of the test.

ELECTRICAL POWER SYSTEMS

3/4.8.3 Alternative A.C. Power Sources

LIMITING CONDITION FOR OPERATION

3.8.3.1 The steady state bus voltage for the manual alternate reserve source* shall be greater than or equal to 90% of the nominal bus voltage.

APPLICABILITY: Whenever the manual alternate reserve source (69 kV) is connected to more than two buses.

ACTION: With bus voltage less than 90% nominal, adjust load on the remaining buses to maintain steady state bus voltage greater than or equal to 90% limit.

SURVEILLANCE REQUIREMENTS

4.8.3.1 No additional surveillance requirements other than those required by Specifications 4.8.1.1.1 and 4.8.1.2.

*Shared with D. C. Cook Unit 2.

ELECTRICAL POWER SYSTEMS (Continued)

BASES

Removal of accumulated water as required by 4.8.1.1.2.b.2 is performed by drawing the contents off the bottom of the tank until acceptable results are obtained for either a tape test or a water and sediment test. An acceptable result for the water and sediment content is a measured value less than 0.05 percent volume.

The sample specified in 4.8.1.1.2.c.4 is sent offsite for testing. A serious attempt will be made to meet the 31-day limit on the offsite tests; however, if for some reason this limit is not met (e.g., if the sample is lost or broken or if the results are not received in 31 days), the diesel generators should not be considered inoperable. If the sample is lost, broken, or fails the offsite tests and the new oil has already been put into the storage tank, the offsite tests will be performed on a sample taken from the storage tank. If the results on the subsequent storage tank sample are not within specified limits, the diesel generators should be considered OPERABLE and the out-of-spec properties should be returned to within specification as soon as possible.

If the monthly storage tank sample taken in accordance with Specification 4.8.1.1.2.d fails the particulate contamination test, the diesel generators should be considered OPERABLE and the contamination level should be restored to below 10 mg/liter as soon as possible.

The precision leak-detection test described in Surveillance Requirement 4.8.1.1.2.f.2 should be performed as described in NFPA (National Fire Protection Association) -329. As NFPA-329 is revised, the precision leak-detection test may be modified to incorporate changes to the test as described in the revisions to NFPA-329.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 125 TO FACILITY OPERATING LICENSE NO. DPR-58
AND AMENDMENT NO. 112 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

Letters from Indiana Michigan Electric Company (the licensee) dated September 28, 1984 and April 24, 1985 for the D. C. Cook Nuclear Power Plant, Units 1 & 2 established initial groundwork addressing concerns regarding diesel generator reliability in Generic letter 84-15. In a letter dated January 16, 1987, the licensee submitted a Technical Specification change request attempting to more closely reflect the Standard Technical Specifications (STS) enclosed in Generic Letter 84-15. Additional information and improved TS's are included in letters dated June 25, and September 28, 1987. A letter dated November 25, 1987 requests TS changes to two specific portions of the original submittal concerning diesel generator fuel oil surveillance testing and the ten year diesel generator fuel oil storage tank cleaning. Additional information on the ten year diesel generator fuel oil storage tank cleaning is contained in a letter dated January 24, 1989. The portions of the TS submittal dated January 16, 1987 concerning simulated load testing of the station batteries and N-train batteries were resubmitted in a letter dated April 29, 1988 to ensure timely compliance with an INPO commitment and to reduce outage time. The TS's for surveillance of the station batteries were issued as Amendment Nos. 123 and 110 to Facility Operating License Nos. DPR-58 and DPR-74, respectively. A letter dated March 23, 1989 provides clarified and corrected TS pages for the 10 year tank cleaning and inspection portion. The licensee provides corrected TSs covering diesel generator surveillance testing in a letter dated April 6, 1989.

For ease of evaluation and clarification of the proposed amendments, the following evaluation is split into three separate areas of consideration; (2.1) Diesel Generator Fuel Oil Surveillance Requirements, (2.2) Diesel Generator Fuel Oil Storage Tank Surveillance Requirements, and (2.3) Diesel Generator Surveillance Testing.

2.0 EVALUATION

2.1 Diesel Generator Fuel Oil Surveillance Requirements

2.1.1 Introduction

By letter dated June 25, 1987, the licensee proposed changes to section 3/4 8.1 of the TSs concerning surveillance requirements for the diesel generator fuel oil system. Additional information is provided by letters dated September 28, and November 9, 1987. The TS change request dated June 25, 1987 was superseded by a TS change request dated November 25, 1987. The staff notes that the proposed changes deviate from the guidelines in the Standard Technical Specifications (STS) for Westinghouse plants. In addition, the proposed TS changes provide for uniformity in the TSs for both Units 1 & 2.

2.1.2 Evaluation

The primary deviation of the licensee's proposed TS from the STS is the deletion of the requirements for testing of stored fuel oil particulate concentration in accordance with American Society for Testing Materials (ASTM) D2274-70 every 92 days. In lieu of the above, the proposed TS requires testing of stored fuel oil for particulate concentrations every 31 days in accordance with ASTM D2276-83. The proposed test more closely confirms the actual condition of the fuel oil that will be pumped to the diesel generators in terms of particulate matter which could impair diesel generator operation or result in diesel generator unavailability. The current STS surveillance requirements (ASTM D2274-70) are orientated to predicting the tendency of fuel oil to oxidize and form particulates during long term storage rather than determining the particulate concentration that may already exist. The staff finds that the more frequent testing for actual particulates in the stored fuel oil will provide better indications of fuel conditions as well as identifying the tendency for formation of particulates under site storage conditions. The proposed tests would, therefore, be more conservative in establishing the adequacy of stored fuel oil than the present STS guidelines.

Other proposed changes include (a) replacing the "water sediment" test by centrifuge on new fuel oil per ASTM D1796 with the "clear and bright" test per ASTM D4176-82, (b) use of optional methods of verifying fuel gravity by testing and comparing with the suppliers certification, (c) allowing sulfur analysis to be performed in accordance with ASTM D2262, and (d) extending the time limit for obtaining ASTM D975 test results on new fuel from 14 days to 31 days. During the course of reviewing the McGuire TS changes, the staff reviewed the "clear and bright" test (ASTM 4176-82) including a demonstration of the test principles at the Naval Fuel Laboratory, Norfolk, Virginia. Based on the above review, the staff finds the "clear and bright" test to be more sensitive in determining the presence of water and sediment in fuel oil than the "water and sediment" test by centrifuge (ASTM D1796).

The use of optional methods of verifying new fuel gravity prior to storing by testing and comparing with the supplier's certification is proposed by the licensee as a means of simplifying new fuel acceptance procedures. The justification for this change is that any contamination of fuel oil during transportation would be indicated by changes in flash point, gravity, viscosity, or appearance. Incorrect flash point would be detected by testing as discussed further below. Any contamination which could alter the fuel oil appearance would be detected by the "clear and bright" test discussed previously. With tests for flash point and appearance as additional indicators, a verification

of fuel oil gravity by testing and comparing to the supplier's certification will provide the necessary assurance that the new fuel is within specification limits. The staff finds the verification of fuel oil gravity by optional methods to be satisfactory.

Current ASTM D975 guidelines for testing new fuel oil sulfur content indicate that the testing is to be performed in accordance with ASTM D129. ASTM D396, "Specification for Fuel Oil," however, allows the use of ASTM D2262 test methods for sulfur determination in No. 2 grade fuel oil. The staff recognizes both of the above fuel oil specifications and believes that obtaining test results by ASTM D2262 will be equivalent to results obtained by use of ASTM D129. Therefore, the staff finds the proposed alternate method of determining sulfur content to be satisfactory,

The current STS guidelines indicate that new fuel oil is to be tested for conformance to the limits of the respective fuel oil properties listed in Table 1 of ASTM D975, and the test results are to be available within 14 days following fuel oil delivery. Under the licensee's proposed surveillance program, the most important fuel oil properties, with regard to immediate diesel engine operability, (flash point, viscosity or gravity, water, and sediment) are checked for ASTM D975 limits immediately prior to accepting the new fuel oil. The remaining fuel oil properties may affect diesel generator performance only on a long term basis. Thus, the staff finds that the licensee's proposal to extend the time for obtaining test results for the remaining fuel oil properties from 14 days to 31 days would not adversely affect diesel generator operability.

The proposed changes to the TSs include deleting the requirements for testing of stored fuel oil in accordance with ASTM D975 requirements on a 92 day basis. The rationale for this deletion is that the main fuel oil properties which can affect diesel generator performance (flash point, cetane number, viscosity, cloud point) and are included in ASTM D975 do not change during storage. If these properties are within specification when the fuel oil is placed in storage, they will remain within specification unless other non-specific petroleum products are added to the storage tanks. The addition of non-specification petroleum products is precluded by the licensee's proposed new fuel surveillance program as described above. Over prolonged periods stored fuel can oxidize and form particulates which, in significant enough concentrations, could impair diesel generator performance. In addition, bacteria growth can occur. Particulate concentrations will be monitored every 31 days as discussed previously. Bacteria growth will be prevented by periodic removal of water from storage tanks. Because fuel oil properties will not change significantly in storage and fuel oil conditions which could affect diesel generator operation will be closely monitored (on a 31 day basis), the staff finds that further testing of stored fuel in accordance with ASTM D975 every 92 days will not provide measurable improvement in diesel generator reliability. Therefore, such testing can be deleted.

The licensee has also proposed two additions to the fuel oil surveillance TSs. These include (a) testing new fuel for flash point before acceptance, and (b) testing for and draining water from the fuel oil storage tanks every 31 days. The flash point test provides an additional indication that new fuel oil is within specification limits; thereby, reducing the possibility of adding "bad fuel" to the fuel oil already in storage. The requirement to drain accumulated

water from the storage tanks every 31 days will be of considerable value in reducing the possibility of bacteria contamination of the stored fuel, minimizing the formation of corrosion products on the bottom of the storage tank, and preventing water from contaminating the fuel oil transfer system and the diesel generator fuel system. Both of the above additions represent a more conservative approach to maintaining quality diesel fuel and diesel generator reliability than current staff guidelines.

2.1.3 Conclusion

Based on the above, the staff concludes that the surveillance requirements for ensuring diesel oil adequacy, TS section 3/4 8.1, as proposed by the licensee are more conservative than the guidance in the Standard Technical Specifications. This conservatism coupled with the simplified testing approach for fuel oil will provide immediate assurance of fuel oil quality on delivery and maintenance of fuel oil quality during storage. This should increase diesel generator reliability. Therefore, the licensee's proposed TS changes for diesel fuel oil surveillance are acceptable.

2.2 Diesel Generator Fuel Oil Storage Tank Surveillance Testing

2.2.1 Introduction

In a letter dated September 28, 1987, the licensee revised the original diesel generator fuel oil surveillance test requirement to reflect more closely to similarly approved TSs. Groundwork for a proposed Diesel Generator Fuel Oil Storage Tank Surveillance Test was laid. Initially, problems such as development of procedures and clean tank criterion were identified. Subsequent letters dated November 25, 1987 and January 24, 1989 provided some additional information. In a letter dated March 23, 1989, the licensee addressed all the remaining concerns of the NRC staff.

2.2.2 Evaluation

Due to the unique design of the licensee's diesel fuel system, periodic surveillance testing requiring draining of the storage tanks would force the licensee to shut down both Units 1 and 2. The licensee's letter dated March 23, 1989, proposed an alternative method of ensuring adequate surveillance testing of the diesel fuel oil storage tanks.

Section 4.8.1.1.2.f of the proposed TS requires that on a 10-year basis the licensee perform the following steps.

Section 4.8.1.1.2.f.1 of the proposed TS requires that the licensee either (1) drain each storage tank, remove accumulated sediment, and clean the tank, or (2) agitate the fuel oil in the tank while pumping the oil from the bottom of the tank through a 5 micron filter and back into the tank. Additionally, the tanks will be sampled three consecutive times and analyzed according to ASTM D2276-83. If any of the three samples contain more than 10mg/liter of contaminate, the agitation, filtration, and sample process must be repeated. If after three consecutive attempts, the sample still fails the contaminate test, the licensee must drain and clean the storage tank.

Circulating the fuel oil through a 5 micron filter of at least five tank volumes will provide sufficient cleaning of most normal oxidation and bacteria. If excessive oxidation or bacteria growth occurs, the proposed surveillance test will adequately provide for the surveillance of the diesel generator fuel oil storage tanks. By ensuring that the contamination levels in the storage tanks do not exceed 10mg/liter, the licensee will improve diesel generator reliability from that which already exists. The failure criterion requiring the licensee to completely drain and clean the diesel fuel oil storage tanks will provide an adequate path to ensure reasonable reliability of the diesel fuel oil storage system.

Section 4.8.1.1.2.f.2 of the proposed TS requires that the licensee perform a precision leak test to verify the integrity of the fuel system. The leakage rate is not to exceed .05 gallons per hour.

The precision leak test employs a fuel surface mounted level detector which operates on the principal of buoyancy changes. The detection system is reported to be able to detect changes of .05 gallons per hour under worst case conditions. This approach of surveillance testing the diesel generator fuel oil storage tanks is more conservative than what currently exists in the plants.

2.2.3 Conclusion

The staff believes that the licensee's proposal to perform surveillance testing of the diesel generator fuel oil storage system is more conservative than what currently exists in the D. C. Cook Units 1 & 2 TSs. Furthermore, the proposed surveillance method provides sufficient failure and clean tank criterion to provide an increase in diesel generator reliability and thus meets the intent of Generic letter 84-15. The proposed solution to ensure diesel generator fuel oil storage tank cleanliness is, therefore, found to be acceptable. It should be noted, however, that the D. C. Cook diesel generator fuel oil storage tank surveillance testing program may be subject to further generic guidance.

2.3 Diesel Generator Surveillance Testing

2.3.1 Introduction

By a letter dated January 16, 1987, the licensee addressed the diesel generator reliability issue and proposed Technical Specification changes to more closely resemble the Standard Technical Specifications contained in Generic Letter 84-15. In a subsequent letter dated November 25, 1987, the licensee provided more concise TS changes and answered several NRC originated questions regarding previous submittals. The final submittal dated April 6, 1989, provides concise TS changes concerning increased diesel generator reliability. These TS changes also provide uniformity between the D. C. Cook Nuclear Plant Units 1 and 2.

2.3.2 Evaluation

Action statement 3.8.1.1.a

This action statement for D. C. Cook Units 1 and 2 currently specifies required actions during the inoperability of one offsite circuit or diesel generator.

In proposing changes to this action statement the licensee has distinguished the loss of an offsite circuit from loss of a diesel generator in that the diesel generator power source will be addressed in a new action statement. This is consistent with the current Standard Technical Specifications which is acceptable for D.C. Cook Units 1 and 2.

The licensee has also proposed to perform the surveillance requirement 4.8.1.1.2.a.4 on each diesel generator within 24 hours instead of one hour and delete the requirement of performing 4.8.1.1.2.a.4 once every eight hours thereafter. The staff finds this change to be consistent with Generic Letter 84-15 and to be acceptable.

Action statement 3.8.1.1.b

This new action statement for D. C. Cook Units 1 and 2 is added as a result of the proposed change to action statement 3.8.1.1.a to address loss of a diesel generator separate from loss of an offsite circuit. As stated in item I above, this proposed change to the TSs is acceptable. The licensee has also proposed to perform the surveillance requirements of 4.8.1.1.2.a.4 on the remaining diesel generator within 24 hours instead of one hour if the diesel generator became inoperable due to any cause other than preplanned preventive maintenance or testing and delete the requirement of performing 4.8.1.1.2.a.4 once every 8 hours thereafter. The staff finds this change to be consistent with Generic Letter 84-15 and to be acceptable.

Additionally the licensee has proposed a 168 hours out-of-service action statement for diesel generator inoperability not to exceed an accumulated annual outage time of 576 hours in lieu of current TSs requirement of 72 hours. The staff feels that at present there are no adequate bases to grant D. C. Cook Units 1 and 2 the requested 168 hours out-of-service period for diesel generators. Also, the subject of optimum LCOs for safety-related systems is currently a generic study topic for the staff. Therefore, based on the above, we do not recommend this change to the TSs be granted at this time.

Action statement 3.8.1.1.c

This action statement for D. C. Cook Units 1 and 2 currently requires that when one diesel generator and an offsite power circuit are inoperable, the licensee should demonstrate the operability of the remaining diesel generator per surveillance requirement of 4.8.1.1.2.a.4 within one hour and at least once per eight hours thereafter. The licensee has proposed to demonstrate the diesel generator operability requirement of 4.8.1.1.2.a.4 within eight hours if the diesel generator became inoperable due to any cause other than preplanned preventive maintenance and testing and to delete the requirement of performing 4.8.1.1.2.a.4 once every eight hours thereafter. The staff finds this change to be consistent with Generic Letter 84-15 and to be acceptable.

Action statement 3.8.1.1.d

This action statement for D. C. Cook Units 1 and 2 currently requires that when two offsite circuits are inoperable, the licensee should demonstrate the operability of two diesel generators per surveillance requirement of

4.8.1.1.2.a.4 within one hour and at least eight hours thereafter. The licensee has proposed to demonstrate the operability of two diesel generators per the surveillance requirement of 4.8.1.1.2.a.4 within eight hours (unless the diesel generators are already operating) instead of within one hour and to delete the requirement of performing 4.8.1.1.2.a.4 once every eight hours thereafter. We find this change consistent with Generic Letter 84-15 and to be acceptable.

Action Statement 3.8.1.1.e

This action statement for D. C. Cook Units 1 and 2 is currently not part of the TSs. The licensee has proposed to demonstrate the operability of the two remaining A.C. circuits by performing 4.8.1.1.1.a within one hour if both diesel generators become inoperable and restore at least one diesel generator to operable status within 2 hours or be in Hot Standby within the next 6 hours. We find this change consistent with Generic Letter 84-15 and acceptable.

The remaining TSs changes to section 3.8.1.1 are administrative in nature providing clarity and consistency between both D. C. Cook Unit 1 and Unit 2 TSs.

TS Section 4.8.1.1.2.a.4

This section for D. C. Cook Units 1 and 2 currently requires diesel generator surveillance to be performed from ambient conditions and for the diesel generator to start and accelerate to at least 514 rpm in less than or equal to 10 sec. The proposed change will require starting each diesel generator at least once per 184 days from ambient conditions and accelerating to 514 rpm in less than or equal to 10 sec. We find this change consistent with Generic Letter 84-15 to improve and maintain diesel generator reliability by reducing the number of cold fast starts of diesel generators and to be acceptable.

TS Section 4.8.1.1.2.e.2

This section for Unit 1 currently requires the generator capability to reject a load greater than or equal to 600kW without tripping. The licensee has proposed more conservative requirements including specific voltage and frequency limits that should be met during this test to be consistent with Unit 2 specifications. This surveillance requirement was accepted by the staff on Unit 2 and is also acceptable for Unit 1.

TS Section 4.8.1.1.2.e.3

This new specification with respect to the full load rejection test has been added for Unit 1 specification to be consistent with Unit 2 specifications. The staff finds the proposed change to be acceptable.

TS Section 4.8.1.1.2.e.4.b

This section currently requires that the diesel generator starts on the auto-start signal within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes. The licensee has proposed to add reference to voltage and frequency requirements (for Units 1 and 2) that should be met during this test. The staff finds this change to be more conservative and to be acceptable.

TSs Section 4.8.1.1.2.e.5,6,9 and 10

These specification sections with respect to diesel generator testing have been added for Unit 1 to provide standardization between Unit 1 and 2 specifications. The staff finds these additions to be acceptable. In addition to the above, the licensee has proposed to add reference to voltage and frequency requirements in surveillance requirements of 4.8.1.1.2.e.6.b for Units 1 and 2. The staff finds this change to be conservative and to be acceptable.

TSs Section 4.8.1.1.2.e.7 and 8

These sections for Unit 2 currently require that the diesel generator operates for at least 24 hours. During the first two hours of this test, the diesel generator shall be loaded to 3850kW (2 hour rating) and during the remaining 22 hours of this test, the diesel generator shall be loaded to 3500kW (the continuous rating). The licensee has proposed to perform 24 hour testing at 3500kW and delete 2 hour testing at 3850kW. The licensee has stated that D. C. Cook diesel generators are rated at 3500kW and do not have 2 hour ratings. The manufacturer of the diesel generators will not support diesel generator operation at 3850kW. Moreover, the licensee has demonstrated that the worst case loading of D. C. Cook diesel generators is below the continuous rating of 3500kW. Based on the above, the staff concludes that testing of diesel generators at 3500kW for 24 hours during these surveillance tests is acceptable. In addition, the licensee has proposed to add Section 4.8.1.1.2.e.7 and revised Section 4.8.1.1.2.e.8 of Unit 1 TSs to be consistent with Unit 2 TSs. The staff finds these changes to be acceptable.

As part of this request, the licensee has also proposed to delete surveillance requirements of 4.8.1.1.2.c.2 and 4.8.1.1.2.d for Unit 2 and 4.8.1.1.2.b.6 for Unit 1. The surveillance requirements of 4.8.1.1.2.c.2 and 4.8.1.1.2.b.6 are regarding verification of automatic sequence timing relays to assure they are within $\pm 5\%$ of its required value and surveillance requirements of 4.8.1.1.2.d is regarding 10 year testing. Based on the information provided by the licensee, the staff concludes that there are no adequate basis to delete these surveillance requirements from Unit 1 and Unit 2 TSs. Therefore, this proposed change to the TSs is denied.

Table 4.8.1 & Attachment 1 and 2

This Table and attachments address reporting and requalification requirements for diesel generators. The licensee has proposed to include this table and attachments for D. C. Cook Units 1 and 2 TSs. This Table and attachments were part of the performance specification included in the Generic Letter 84-15. The licensees were requested to provide comments on the performance specification for staff consideration in finalizing surveillance testing requirements for diesel generators. Subsequently, the NRC staff determined that the actions required by the Table and the Attachment 2 were not necessary and the reporting requirements addressed in Attachment 1 were adequately met by current reporting requirements. Therefore, the STS were revised to incorporate the requirements of Generic Letter 84-15 and this table and attachments were not included in this revision of the STS. These proposed changes to D. C. Cook Units 1 and 2 TSs are not required and are therefore denied.

Table 4.8.2

This table addresses diesel generator surveillance testing frequency. The present requirement bases the diesel generator test frequency on the number of failures in the last 100 tests (for Unit 2 only). The licensee has proposed to base the testing frequency in the last 20 tests. The licensee has also included this table in Unit 1 TSs to be consistent with Unit 2 TSs. The staff finds the proposed revised Table 4.8.2 to be consistent with Generic Letter 84-15 and to be acceptable.

In addition to the above proposed TSs changes, the licensee has requested a number of administrative changes to D. C. Cook Units 1 and 2 TSs. These changes are as follows:

A footnote was added on page 3/4 8-2 for Units 1 and 2 to indicate, that as part of the equipment is restored, the plant should return to an early Action statement. This transfer statement also clarifies the starting time.

TS 3.8.2.1 of Unit 1 was changed to be identical to TS 3.8.2.1 currently approved for Unit 2. Also, in TS 4.8.2.1 of Unit 1, the phrase "other than the diesel generators" was deleted. In Unit 2 TS 4.8.2.1 the phrase "and energized from A.C. sources" was added for clarity.

A footnote was added on pages 3/4 8-9 and 8-10 of Units 1 and 2 to clarify that the 120-volt A.C. vital buses are energized from their associated inverter which is connected to a D.C. bus.

TS 3.8.2.2 for Unit 1 was changed to be identical to TS 3.8.2.2 for Unit 2. Also, in Unit 1, the phrase "other than the diesel generator" was deleted. The words "and energized" were added to TS 4.8.2.2 for Unit 2 for clarity.

The qualifier "No" was deleted before the letter "N" on page 3/4 8-16 for Units 1 and 2. This qualifier serves no purpose.

The word "value" is now written each time rather than being indicated by ditto marks on page 3/4 8-12 for Units 1 and 2.

Throughout Section 3/4-8 for Units 1 and 2, hyphens were added where appropriate and the word "greater (or less) than or equal to" were used to replace the mathematical symbols. In addition, the page numbers and table numbers for TS Section 3/4-8 for both were revised for both units due to the addition of a number of new pages to accommodate the proposed changes.

The staff finds the above administrative changes to be acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the installation and use of a facility component located within the restricted area as defined in 10 CFR part 20 and a change 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 of environmental assessment need be prepared in connection with the issuance of this amendment.

4.0 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, (3) 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: May 31, 1989

Principal Contributors: Anthony T. Gody Jr., NRR/DRSP
Om P. Chopra, NRR/SELB

UNITED STATES NUCLEAR REGULATORY COMMISSION
INDIANA MICHIGAN POWER COMPANY
DONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2
DOCKET NOS. 50-315 AND 50-316
NOTICE OF DENIAL OF REQUEST FOR AMENDMENT TO FACILITY OPERATING
LICENSE AND OPPORTUNITY FOR HEARING

The U.S. Nuclear Regulatory Commission (the Commission) has denied, in part, a request by the Indiana Michigan Power Company for an amendment to Facility Operating License Nos. DPR-58 and DPR-74, issued to the Indiana Michigan Power Company (the licensee), for the operation of the Donald C. Cook Nuclear Plant, Units 1 and 2 (the facilities), located in Berrien County, Michigan.

The proposed amendments would provide upgraded Technical Specifications (TSs) to promote diesel generator reliability as a result of Generic Letter 84-15. Additionally, changes in the AC and DC distribution systems are to provide standardization between Unit 1 and 2. The licensee's application for the amendments was dated January 16, 1987, and supplemented on June 25, September 28, and November 25, 1987, October 31, 1988, and January 24, March 23, and April 6, 1989. Notice of consideration of issuance of these amendments was published in the FEDERAL REGISTER on February 26, 1987 (52 FR 5857), July 29, 1987 (52 FR 28380), and December 30, 1987 (52 FR 49227).

The proposed amendments, in part, would delete several Technical Specifications (TSs) which determine the operability of the emergency load sequencing and timing circuits and provide detection of diesel generator interdependence in TSs 4.8.1.1.2.c.2 (Unit 2), 4.8.1.1.2.b.6 (Unit 1), and

4.8.1.1.2.d (Unit 2), respectively. The Commission has determined that inclusion of these TSs is necessary to provide assurance of the availability of the safety functions provided by the diesel generators and, therefore, shall not be deleted. Another proposed change to the TSs denied was the increase in time from 72 hours to 168 hours for restoration of an inoperable diesel generator.

All other provisions of the amendment request have been approved by Amendment Nos. 125 and 112 dated May 31, 1989. Notice of Issuance of Amendment Nos. 125 and 112 will be published in the Commission's biweekly FEDERAL REGISTER notice.

Indiana Michigan Power Company was notified of the Commission's denial of the proposed TSs changes by letter dated May 31, 1989.

By June 30, 1989, the licensee may request a hearing with respect to the denial described above and any person whose interest may be affected by this proceeding may file a written petition for leave to intervene.

A request for hearing or petition for leave to intervene must be filed with the Secretary of the Commission, U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Docketing and Service Branch, or may be delivered to the Commission's Public Document Room, 2120 L Street, N.W., Washington, D.C., by the above date.

A copy of the petition should also be sent to the Office of the General Counsel, U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, and to Gerald Charnoff, Esq., Shaw, Pittman, Potts and Trowbrige, 2300 N Street, N.W., Washington, D.C. 20037, attorney for the licensee.

For further details with respect to this action, see (1) the application for amendments dated January 16, 1987, and supplemented on June 25, September 28, and November 25, 1987, October 31, 1988 and January 24, March 23, and April 6,

1989, and (2) the Commission's letter to Indiana Michigan Power Company dated May 31, 1989, which are available for public inspection at the Commission's Public Document Room, 2120 L Street, N.W., Washington, D.C., and at the Maude Preston Palenske Memorial Library, 500 Market Street, St. Joseph, Michigan 49085. A copy of item (2) may be obtained upon written request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Reactor Projects - III, IV, V and Special Projects.

Dated at Rockville, Maryland, this 31st day of May 1989.

FOR THE NUCLEAR REGULATORY COMMISSION


Lawrence A. Yandell, Acting Director
Project Directorate III-1
Division of Reactor Projects - III,
IV, V, and Special Projects
Office of Nuclear Reactor Regulation