



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

October 19, 1992

Posted
Amdt. 138 to DPR-29

Docket Nos. 50-237, 50-249
and 50-254, 50-265

Mr. Thomas J. Kovach
Nuclear Licensing Manager
Commonwealth Edison Company-Suite 300
OPUS West III
1400 OPUS Place
Downers Grove, Illinois 60515

Dear Mr. Kovach:

SUBJECT: ISSUANCE OF AMENDMENTS (TAC NOS. M84021, M84022, M84023, AND M84024)

The Commission has issued the enclosed Amendment No. 119 to Facility Operating License No. DPR-19 for Dresden, Unit 2, Amendment No. 115 to Facility Operating License No. DPR-25 for Dresden, Unit 3, Amendment No. 138 to Facility Operating License No. DPR-29 for Quad Cities, Unit 1, and Amendment No. 134 to Facility Operating License No. DPR-30 for Quad Cities, Unit 2. The amendments are in response to your application dated June 29, 1992, as supplemented August 28, 1992.

The amendments consist of changes to the Dresden and Quad Cities Technical Specifications (TS) that will: (1) revise the diesel generator operability requirements; (2) revise the 125 volt DC battery availability and testing requirements; (3) eliminate some redundant emergency core cooling testing requirements for Quad Cities; (4) delete an electrical power availability requirement for Dresden; (5) modify the electrical feedback requirements for Quad Cities; and (6) incorporate various administrative changes primarily associated with the above changes.

During the review of this submittal, an inconsistency was noted between the Dresden and Quad Cities TS with regard to operating philosophy in the event both offsite power sources are lost (Section 2.5 of the enclosed Safety Evaluation). It is our understanding that this difference will be resolved and justification will be provided prior to the submittal of upgraded TS Section 3.9/4.9 for both stations.

Mr. Thomas J. Kovach

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October 19, 1992

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

Sincerely,

original signed by:

Byron L. Siegel, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 119 to DPR-19
- 2. Amendment No. 115 to DPR-25
- 3. Amendment No. 138 to DPR-29
- 4. Amendment No. 134 to DPR-30
- 5. Safety Evaluation

cc w/enclosures:
See next page

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

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-254

QUAD CITIES NUCLEAR POWER STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 138
License No. DPR-29

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Commonwealth Edison Company (the licensee) dated June 29, 1992, as supplemented August 28, 1992, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-29 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 138, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance to be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard J. Barrett, Director
Project Directorate III-2
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 19, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 138

FACILITY OPERATING LICENSE NO. DPR-29

DOCKET NO. 50-254

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

REMOVE

INSERT

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3.9/4.9 AUXILIARY ELECTRICAL SYSTEMS

LIMITING CONDITIONS FOR OPERATION

Applicability:

Applies to the auxiliary electrical power system.

Objective:

To assure an adequate supply of electrical power during plant operation.

SURVEILLANCE REQUIREMENTS

Applicability:

Applies to the periodic testing requirement of the auxiliary electrical system.

Objective:

To verify the operability of the auxiliary electrical system

SPECIFICATIONS

A. Normal and Emergency A-C Auxiliary Power

The reactor shall not be made critical unless all the following requirements are satisfied.

1. The Unit diesel generator and the Unit 1/2 diesel generator shall be operable.

A. Normal and Emergency A-C Auxiliary Power

1. a. Once per month:

- (1) Each diesel generator shall be started and verified to deliver rated voltage and frequency.

- (2) Each diesel generator shall be synchronized, fully loaded and run for at least one hour.

- b. During the monthly generator test, the diesel-starting air compressor shall be checked for operation and its ability to recharge air receivers.

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2. One 345-kV line, associated switchgear, and the reserve auxiliary power transformer capable of carrying power to the unit shall be available.
 3. One other 345-kV line capable of carrying auxiliary power to an essential electrical bus of the unit through the 4160-volt bus tie shall be available.
 4. a. The Unit engineered safety features 4160-volt buses (13-1 and 14-1, Unit 1; 23-1 and 24-1, Unit 2) are energized.
b. The Unit engineered safety features 480-volt buses (18 and 19, Unit 1; 28 and 29, Unit 2) are energized.
- c. During the monthly generator test, the diesel fuel oil transfer pumps shall be operated.
2. The status of the 345-kV lines, associated switchgear, and the reserve auxiliary power transformer shall be checked daily.
 3. The status of the additional source of power via the 4160-volt bus tie shall be checked daily.
 4. The Unit engineered safety features 4160-volt and 480-volt buses shall be checked daily.

B. Station Batteries

The unit 24/48-volt batteries, two station 125-volt batteries, the two station 250-volt batteries, and a battery charger for each required battery shall be operable before the reactor can be made critical.

B. Station Batteries

1. Every week the specific gravity and voltage of the pilot cell, the temperature of adjacent cell, and overall battery voltage shall be measured.
2. Every 3 months the measurement shall be made of the voltage of each cell to the nearest 0.01 volt, the specific gravity of each cell, and the temperature of every fifth cell.
3. At least once each operating cycle, the unit's batteries shall be tested to verify that the battery capacity is adequate to supply and maintain operable the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test. Specific gravity and voltage of each cell shall be determined after each service test.
4. At least once per 60 months, in lieu of the battery service test required by 4.9.B.3, the Unit's batteries shall be subjected to a performance discharge test to verify that the battery capacity is the greater of either 80% of the manufacturer's rating or the minimum acceptable battery capacity from the latest revision of the load profile when subjected to a performance discharge test.
5. For any battery that shows signs of degradation or has reached 85% of the service life for the expected application as determined under Section 4.9.B.4, a performance discharge test of battery capacity shall be performed at least once each operating cycle. Degradation is indicated when the battery capacity drops more than 10% of rated capacity.

from its average on previous performance tests, or is below 90% of the manufacturer's rating.

6. To assure operability prior to use, once the alternate 125 volt battery cell-to-cell connections are completed and the maintenance charger placed into service, each such battery shall adhere to the surveillances specified in 4.9.B.

C. Electric Power Availability

Whenever the reactor is in the Run mode or for startup from a hot shutdown condition, the availability of electric power shall be as specified in Specifications 3.9.A and 3.9.B except as stated in Specifications 3.9.C.1, 3.9.C.2, 3.9.C.3, and 3.9.E.

C. Electric Power Availability

The availability status of electric power shall be checked daily.

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1. From and after the date that incoming power is available from only one of the lines specified in 3.9.A, continued reactor operation is permissible only during the succeeding 7 days, unless the second line is sooner made available, providing both the Unit and Unit 1/2 emergency diesel generators are demonstrated operable per Specification 4.9.A.1.a(1).
2. From and after the date the incoming power is not available from any line, continued reactor operation is permissible providing both the Unit and Unit 1/2 emergency diesel generators are demonstrated operable per Specification 4.9.A.1.a(1), all core and containment cooling systems are operable, reactor power level is reduced to 40% of rated, and the NRC is notified within 24 hours of the situation, the precautions to be taken during this period, and the plans for prompt restoration of incoming power.
3. From and after the date that one of the two 125/250-volt battery systems is made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding 3 days unless such battery system is sooner made operable.
 - a. With both units operating, each 125 volt battery may be inoperable for up to a maximum of seven days per operating cycle for maintenance or testing, provided the alternate 125 volt battery is placed into service and is operable per specification 4.9.B.6.
 - b. With the other unit in cold shutdown or refueling,

operations may continue with one of the two 125 volt battery systems inoperable provided the alternate 125 volt battery is placed into service and is operable per specification 4.9.B.6.

- c. If it is determined that a 125 volt battery need be replaced as a result of maintenance or testing, a specific battery may be inoperable for an additional seven days provided the alternate 125 volt battery is placed into service and is operable per specification 4.9.B.6.

D. Diesel Fuel

There shall be a minimum of 10,000 gallons of diesel fuel supply on site for each diesel generator.

E. Diesel-Generator Operability

1. Whenever the reactor is in the Startup/Hot Standby or Run mode and the unit or shared diesel generators and/or their respective associated buses are inoperable, continued reactor operation is permissible only during the succeeding 7 days provided that all of the low-pressure core cooling and all loops of the containment cooling mode of the RHR system associated with the operable diesel generator shall be operable and two offsite lines as specified in 3.9.A are available. If the diesel generator became inoperable due to any cause other than pre-planned preventive maintenance or testing,

D. Diesel Fuel

Once a month the quantity of diesel fuel available shall be logged.

Once a month a sample of diesel fuel shall be checked for quality.

E. Diesel-Generator Operability

1. Deleted.
2. During each refueling outage, a simulated loss of off-site power in conjunction with an ECCS initiation signal test shall be performed on the 4160 volt emergency bus by:

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demonstrate the operability of the remaining operable diesel generator by performing surveillance requirement 4.9.A.1.a(1) immediately and daily thereafter. If these requirements cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.

2. Deleted.

3. When the reactor is in the Cold Shutdown or Refueling mode, a minimum of one diesel generator (either the Unit diesel generator or the Unit 1/2 diesel generator) shall be operable whenever any work is being done which has the potential for draining the vessel, secondary containment is required, or a core or containment cooling system is required.

F. REACTOR PROTECTION BUS POWER MONITORING SYSTEM

1. Two RPS electric power monitoring channels for each inservice RPS MG set or inservice alternate power source shall be OPERABLE except when the reactor is in the SHUTDOWN mode.

a. Verifying de-energization of the emergency buses, and load shedding from the emergency buses.

b. Verifying the diesel starts from ambient condition on the auto-start signal, energizes the emergency buses with permanently connected loads, energizes the auto-connected emergency loads through the load sequencer, and operates for greater than 5 minutes while its generator is loaded with the emergency loads.

F. REACTOR PROTECTION BUS POWER MONITORING SYSTEM

1. The RPS Bus power monitoring system instrumentation shall be determined OPERABLE:

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3.9 LIMITING CONDITIONS FOR OPERATION BASES

- A. The general objective of this specification is to assure an adequate source of electrical power to operate the auxiliaries during plant operation, to operate facilities to cool and lubricate the plant during shutdown, and to operate the engineered safety features following an accident. There are two sources of electrical energy available, namely, the 345-kV transmission system and the diesel generators.
- B. The d-c supply is required for control and motive power for switchgear and engineered safety features. The electrical power required provides for the maximum availability of power, i.e., one active offsite source and one backup source of offsite power and the maximum numbers of onsite sources.

An alternate 125 volt DC battery has been installed for each unit with the primary purpose of supporting the performance of the rated discharge test on the permanent 125 volt battery. The alternate battery is utilized to avoid a reduction in the single failure capability of the 125-volt system during the performance of the discharge test on the permanent battery.

- C. Auxiliary power for the Unit is supplied from two sources, either the Unit auxiliary transformer or the Unit reserve auxiliary transformer. Both of these transformers are sized to carry 100% of the auxiliary load. If the reserve auxiliary transformer is lost, the unit can continue to run for 7 days, since the Unit auxiliary transformer is available and both diesel generators are operational. A 7-day period is provided if one source of offsite power is lost. This period is based on having two diesels operable which are adequate to handle an accident assuming a single failure. In addition, auxiliary power from the other unit can be obtained through the 4160-volt bus tie. If both offsite lines are lost, power is reduced to 40% of rated so that the turbine bypass system could accept the steam flow without reactor trip should the generator be separated from the system or a turbine trip occur. In this condition, the turbine-generator is capable of supplying house load and ECCS load if necessary through the unit auxiliary transformer. If the unit were shut down on loss of both lines, fewer sources of power would be available than for sustained operation at 40% power. Attention will be given to restoring normal offsite power to minimize the length of time operation is allowed in a condition where both sources are available. In such cases, diesel generator operability demonstrations will be limited to an unloaded start test.

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In the normal mode of operation, the 345-kV system is operable and two diesel generators are operable. One diesel generator may be allowed out of service for a short period of time to conduct pre-planned preventative maintenance or testing provided that power is available from the 345-kV system through a 4160-volt bus tie to supply the emergency buses, and the alternate diesel generator is operable. Offsite power is quite reliable, and in the last 25 years there has been only one instance in which all offsite power was lost at a Commonwealth Edison Generating Station.

When the unit or shared diesel generator is made or found inoperable for reasons other than pre-planned preventative maintenance or testing, the remaining diesel generator and its associated low-pressure core cooling and containment cooling systems, which provide sufficient engineered safety features equipment to cover all breaks, will be operable.

For low-pressure ECCS, the verification of operability, as used in this context, means to administratively check by examining logs or other information to determine if certain components/systems are out-of-service for maintenance or other reasons. It does not mean to perform the surveillance requirements needed to demonstrate the operability of the component/system. For the remaining diesel generator, an operability demonstration to identify any potential common causes for failure will be performed. In such cases, the demonstration will be limited to an unloaded start test.

- D. The diesel fuel supply of 10,000 gallons will supply each diesel generator with a minimum of 2 days of full load operation or about 4 days at 1/2 load. Additional diesel fuel can be obtained and delivered to the site within an 8-hour period; thus a 2-day supply provides for adequate margin.
- E. Diesel generator operability is discussed in Paragraph 3.9.C above.
- F. Specifications are provided to ensure the operability of the RPS Bus electrical protection assemblies (EPA's). Each RPS MG set and the alternate power source has 2 EPA channels wired in series. A trip of either channel from either overvoltage, undervoltage, or underfrequency will trip the associated MG set or alternate power source.

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4.9 SURVEILLANCE REQUIREMENTS BASES

- A. The monthly test of the diesel generator is conducted to check for equipment failures and deterioration. Testing is conducted up to equilibrium operating conditions to demonstrate proper operation at these conditions. The diesel will be manually started, synchronized to the bus, and load picked up. Diesel-generator experience at other Commonwealth Edison generating stations indicates that the testing frequency is adequate and provides a high reliability of operation should the system be required. In addition, during the test, the generator is synchronized to the offsite power sources and thus not completely independent of this source. To maintain the maximum amount of independence, a 30-day testing interval is also desirable.

Each diesel generator has two air compressors and four air tanks. Two air tanks are piped together to form an air receiver. Each air compressor supplies an air receiver. This arrangement provides redundancy in starting capability. It is expected that the air compressors will run only infrequently.

During the monthly check of the diesel, the receivers will be drawn down below the point at which the compressor automatically starts to check operation and the ability of the compressors to recharge the receivers. Pressure indicators are provided on each of the receivers.

Following the monthly test of the diesels, the fuel oil day tank will be approximately half full based on the 2-hour test at full load and 205 gph at full load. At the end of the monthly load test of the diesel generators, the fuel oil transfer pumps will be operated to refill the day tank and to check the operation of these pumps from the emergency source.

The test of the emergency diesel generator during the refueling outage will be more comprehensive in that it will functionally test the system, i.e., it will check diesel starting, closure of diesel breaker, and sequencing of loads on the diesel. The diesel will be started by simulation of a loss-of-coolant accident. In addition, an undervoltage condition will be imposed to simulate a loss of the time required. The only load on the diesel is that due to friction and windage and a small amount of bypass flow on each pump.

Periodic tests between refueling outages verify the ability of the diesel to run at full load and the core and containment cooling pumps to deliver full flow. Periodic testing of the various components plus a functional test at the refueling interval are sufficient to maintain adequate reliability.

- B. Although station batteries will deteriorate with time, utility experience indicates there is almost no possibility of precipitous failure. The type of surveillance described in this specification is that which has been demonstrated over the years to provide an indication of a cell becoming irregular or unserviceable long before it becomes a failure.