

Docket No. 50-374

Mr. Dennis L. Farrar  
Director of Licensing  
Commonwealth Edison Company  
P.O. Box 767  
Chicago, Illinois 60690

NOV 13 1985

Dear Mr. Farrar:

SUBJECT: ISSUANCE OF AMENDMENT NO. 16 TO FACILITY OPERATING LICENSE  
NO. NPF-18 - LA SALLE COUNTY STATION, UNIT 2

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 16 to Facility Operating License No. NPF-18 for the La Salle County Station, Unit 2. This amendment is in response to your request by letter dated August 28, 1985. The amendment provides relief, during the La Salle Unit 1 refueling outage, by extending the present three-day or seven-day period to thirty days during which only three diesel generators would be required to satisfy the standby AC on-site power requirements for Unit 2. This request was made so that you could perform the modification required by Unit 1 License Condition 2.C.30(1)(b) on the shared diesel generators without having to shut down both Units.

A copy of the related safety evaluation supporting Amendment No. 16 to Facility Operating License NPF-18 is enclosed.

Sincerely,

Original signed by:

Walter R. Butler, Chief  
Licensing Branch No. 2  
Division of Licensing

Enclosures:

1. Amendment No. 16 to NPF-18
2. Safety Evaluation

cc w/enclosure:  
See next page

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See next page

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Mr. Dennis L. Farrar  
Commonwealth Edison Company

La Salle County Nuclear Power Station  
Units 1 & 2

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

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-374

LA SALLE COUNTY STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 16  
License No. NPF-18

1. The Nuclear Regulatory Commission (the Commission or the NRC) having found that:
  - A. The application for amendment filed by the Commonwealth Edison Company, dated August 28, 1985, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's 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 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 set forth in 10 CFR Chapter I;
  - 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. NPF-18 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No.16 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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3. This amendment is effective as of the date Unit 1 initiates its first refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:

Walter R. Butler, Chief  
Licensing Branch No. 2  
Division of Licensing

Enclosure:  
Changes to the Technical  
Specifications

Date of Issuance: NOV 13 1985

\*Previously concurred:

LB#2/DL/LA	LB#2/DL/PM
*EHylton	*ABournia:lb
10/24/85	10/24/85

OELD
*CWoodhead
10/25/85

LB#2/DL/BC
*WRButler
10/24/85

*WRB*  
AD L/DL  
TMVovak  
10/24/85  
11/13/85

ENCLOSURE TO LICENSE AMENDMENT NO. 16  
FACILITY OPERATING LICENSE NO. NPF-18  
DOCKET NO. 50-374

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain a vertical line indicating the area of change.

REMOVE

3/4 8-1

INSERT

3/4 8-1  
3/4 8-1a

## 3/4.8 ELECTRICAL POWER SYSTEMS

### 3/4.8.1 A.C. SOURCES

#### A.C. SOURCES - OPERATING

#### LIMITING CONDITION FOR OPERATION

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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. Separate and independent diesel generators\* 0, 1A, 2A and 2B with:
  1. For diesel generator 0, 1A and 2A:
    - a) A separate day fuel tank containing a minimum of 250 gallons of fuel.
    - b) A separate fuel storage system containing a minimum of 31,000 gallons of fuel.
  2. For diesel generator 2B, a separate fuel storage tank/day tank containing a minimum of 29,750 gallons of fuel.
  3. A separate fuel transfer pump.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

#### ACTION:

- a. With either one offsite circuit or diesel generator 0 or 2A of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1a. within 1 hour, and 4.8.1.1.2a.4., for one diesel generator at a time, within 8 hours, and at least once per 8 hours thereafter; restore at least two offsite circuits and diesel generators 0 and 2A to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- b. With one offsite circuit and diesel generator 0 or 2A of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1a. within 1 hour, and 4.8.1.1.2a.4., for one diesel generator at a time, within 6 hours, and at least once per 8 hours thereafter; restore at least one of the inoperable A.C. sources to OPERABLE status within 12 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. Restore at least two offsite circuits and diesel generators 0 and 2A to OPERABLE status within 72 hours from the time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

\*See page 3/4 8-1(a).

## ELECTRICAL POWER SYSTEMS

### LIMITING CONDITION FOR OPERATION (Continued)

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\*For a 30 day period for each diesel generator 0 and 1A during the Unit 1 first refueling outage, with Unit 1 in operational condition 4 or 5 or defueled, only 3 diesel generators, 2B and 2A, and either 0 or 1A are required to satisfy the standby AC onsite power requirements for Unit 2. Surveillance requirements, 4.8.1.1.1a and 4.8.1.1.2a.4 shall be performed within 48 hours prior to removal of the 0 or 1A diesel generator from service. During each 30 day period the remaining 3 diesel generators will be verified<sup>1</sup> operable at least once per day (in addition to any testing required by Table 4.8.1.1.2-1). The control circuit for the unit cross-tie circuit breakers between buses 142Y and 242Y shall be temporarily modified to allow the breakers to be closed with the diesel generator feeding the bus. In the event these conditions are not met, Unit 2 will be brought to HOT SHUTDOWN within 12 hours and COLD SHUTDOWN within the following 24 hours. The provisions of Technical Specification 3.0.4 do not apply.

<sup>1</sup>The term verify as used in this context means to administratively check by examining logs or other information to determine if certain components 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 components.



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

SAFETY EVALUATION

AMENDMENT NO. 16 TO NPF-18

LA SALLE COUNTY STATION, UNIT 2

DOCKET NO. 50-374

Introduction

By letter dated August 28, 1985, Commonwealth Edison Company (the licensee) requested a one-time technical relief, during the present, first refueling outage for La Salle Unit 1, to allow the two diesel generators required by La Salle Units 1 and 2 Technical Specifications, 0 and 1A, be inoperable for a 30 day period without performing surveillance of the other operable diesel generators every 8 hours as required by the Technical Specifications. This one time change will allow the installation of the diesel generator lube oil modification required by the La Salle Unit 1 License Condition 2.C.(2)(1)(b) to be installed on Unit 1 prior to startup after the first refueling outage.

Because of the fact that Diesel Generator 0 is shared between La Salle Units 1 and 2 and Diesel Generator 1A of Unit 1 is designed to supply power to the Unit 2 equipment (e.g. standby gas treatment, hydrogen recombiner, and emergency filtration for the control room) the present Technical Specifications for Unit 2 require that Diesel Generators 0, 1A, 2A, and 2B be operable. Otherwise, if one of the three diesel generators (0, 2A, or 2B) is inoperable, the action statement permits 72 hours of reactor operation before action must be taken to shut down the unit. For Diesel Generator 1A, the action statement allows a maximum of 10 days of reactor operation before action must be taken to shut down the unit. Furthermore, each action requires the other operable diesel generators to be tested every 8 hours during this interval of inoperable diesel generator. Thus, the proposed relief from the requirements of the Technical Specifications would extend the present three-day limiting condition for operation to a duration of 30 days for Diesel Generator 0 modification, while for Diesel Generator 1A from 10 days to 30 days.

The licensee proposes to modify the Diesel Generators 0, 1A, and 1B during the upcoming Unit 1 refueling outage while the changes for the remaining diesel generators (2A and 2B) will be completed during the Unit 2 refueling outage. Furthermore, the licensee states that no maintenance is to be performed on the other diesel generators required for unit operation while a diesel generator is being modified.

EVALUATION

The Commonwealth Edison Company is currently a member of the Mid-America Interpool Network for the purpose of ensuring that the transmission system is reliable and adequate. La Salle County Station is interconnected to the above electrical grid system through four 345 kV overhead transmission lines which enter the station by way of two separate rights-of-way. These four 345kV

circuits in the switchyard are connected to ten circuit breakers in a ring-bus arrangement. This ring bus configuration provides for quickly locating and isolating any system fault or equipment failure. Therefore, any single failure would only affect one source of offsite power. The staff has reviewed the data base for loss of offsite power (LOOP) events compiled in NUREG/CR-3992, "Loss of Off-site Power at U.S. Nuclear Plants," and found that La Salle County Station has not experienced a LOOP event since its initial criticality in 1982.

The primary supply (an immediate access circuit) to the three onsite Engineered Safety Feature (ESF) buses for Unit 2 is provided by a 345/4.16 kV system auxiliary transformer (SAT), SAT-242. The alternate supply (delayed access circuit) is manually connected to the onsite system (only two of the three ESF buses) from the Unit 1 ESF buses through the unit auxiliary transformers (UAT), UAT-141, or the system auxiliary transformer (SAT-142).

The onsite power system is designed such that five diesel generators (0, 1A, 1B for Unit 1 and 2A, 2B for Unit 2) are used to provide onsite power to six Class 1E ESF buses (three for each unit). Among the five diesel generators, Diesel Generators 1A and 2A are assigned to Division 2, Diesel Generators 1B and 2B to Division 3, and Diesel Generator 0 is shared between Division 1 of two units. With Unit 1 in cold shutdown, only three of the four diesel generators (0, 1A, 2A, and 2B) are required to satisfy the standby AC onsite power requirement for Unit 2; however, the Technical Specifications require four functional diesel generators.

As for the onsite power sources, the licensee states that La Salle's diesel generator reliability exceeds 0.99 while the U.S. average diesel generator reliability is 0.98, according to NUREG-1032, "Evaluation of Station Blackout Accidents at Nuclear Power Plants," Table 1.1, "Summary of Station Blackout Program Technical Results." Further, the licensee states that the station record indicates only seven failures in over 600 diesel generator starts. Within the last three years, only one failure has occurred. Thus, La Salle presently maintains a 30 day test interval for their diesel generators, as required by the Technical Specifications because of this failure rate. The staff has reviewed the licensee's probability assessment that a LOOP occurs concurrently with one or two diesel generators failures during a 30 day period as requested by the licensee. We concur with the licensee's finding that the probability of such an event during that period is sufficiently small. In addition, we corroborated the licensee's conclusion by performing our own assessment and arrived at the same conclusion (see Attachment). Also, the licensee has performed a loop transient analysis with any combination of diesel generators being inoperable and they have determined that the unit can be shut-down with one operable ESF division.

Aside from the required monthly diesel generator surveillances, the licensee will perform the following additional tests:

1. The diesel generators needed for the operation will be demonstrated to be operable by performing the surveillance test required by Specification 4.8.1.1.2a.4 prior to taking the other diesel generator out-of-service. In addition, the licensee, by letter dated October 2, 1985 has committed to perform the above surveillance test (Specification 4.8.1.1.2a.4) again at the 14th day of the 30-day period. If any diesel generator fails to

start properly, the appropriate action called for in the Technical Specifications would be taken.

2. The control circuit for the unit cross-tie breakers between Diesel Generators 1A and 2A will be temporarily modified to allow the unit tie breakers to be manually closed (from the control room) if such a need arises.

Based on: (1) the favorable operating history of the offsite power system and the diesel generators, (2) the number of available paths to the onsite power buses from the offsite sources, (3) the probability assessment, and (4) the fact that one ESF division can safely shutdown the unit for LOOP, the LOOP does not represent a significant threat to the health and safety of the public for the period proposed. For the accident situation, it is our judgement that a large break loss-of-coolant accident concurrent with a LOOP and the loss of an additional diesel generator is a very unlikely event over the 30 day period for Diesel Generators 0 and 1A outages; and, therefore, does not represent a significant danger to the health and safety of the public. We will request that the NRC Resident Inspector, before any action is taken by the licensee, is assured that adequate procedures have been developed for the shedding of nonessential loads from Diesel Generator 1A and the operation of the tie breakers between 142Y and 242Y buses are in place. The staff, therefore, concludes that the proposed one time relief from the requirements of the Technical Specifications is acceptable.

#### ENVIRONMENTAL CONSIDERATION

This amendment changes requirements with respect to use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. We have determined that the amendment involves 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 this amendment involves no significant hazards consideration and the only comments received have been addressed in the safety evaluation. Accordingly, this amendment meets 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.

#### CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: NOV 13 1985

## ATTACHMENT

The staff has conservatively estimated the probability for severe core damage for La Salle Unit 2 from this one-time change in Technical Specifications to be of an order of  $3 \times 10^{-6}$ . This probability was arrived at by the following.

Two cases must be considered: either Diesel Generator 0 is taken out of service for the lube oil modification, or Diesel Generator 1A is taken out of service. Of these two cases, the worst case is that where Diesel Generator 0 is taken out of service; Diesel Generator 0 is the swing diesel. The conservative estimate of severe core damage probability was obtained by assuming that if (1) a loss of offsite power of duration greater than 1/2 hour were to take place during the 30 day period, with Diesel Generator 0 out of service, (2) Diesel Generator 2A fails to start, and (3) there is failure to power bus 242Y (normally powered by Diesel Generator 2A) by Diesel Generator 1A; then severe core damage occurs. In actuality, if the Reactor Core Isolation Cooling System or the High Pressure Core Spray System were operable, severe core damage would not occur for some hours, during which time either offsite or onsite power might be recovered. The amount of time before severe core damage would occur has not been investigated.

The estimate of severe core damage probability associated with the proposed change to the Technical Specifications used the following data:

- (1) Loss of offsite power frequency for periods greater than 1/2 hour - .03/year (from NUREG-1032, "Evaluation of Station Blackout Program Technical Results," Figure A.10. This figure gives the frequency of losses of offsite power exceeding specified durations for Zion (another Commonwealth Edison nuclear station). It was assumed that Zion and La Salle have similar loss of offsite power frequency versus duration curves).
- (2) Probability Diesel Generator 2A fails to start - .01/day (plant specific data given by the licensee in its August 28, 1985 letter).
- (3) Fraction of Diesel Generator 1A or Diesel Generator 0 is inoperable for the lube oil modification - 30/365 (we are assuming in actuality the Diesel Generator 0 is out for thirty days since that is the worst case).
- (4) Probability of failure to power bus 242Y (normally powered by Diesel Generator 1A) - 0.1 (This estimate of the probability of failure to power bus 242Y by Diesel Generator 1A is a conservative estimate which includes the conditional probability of failure of Diesel Generator 1A, given Diesel Generator 2A fails to start; and the probability of human error of failing to properly close the tie breakers between buses 142Y and 242Y, or improperly shedding the nonessential loads on Diesel Generator 1A. Since the tie breakers between buses 142Y and 242Y can be closed from the control room, this is a conservative estimate.)

The product of these four quantities yields our conservative estimate of  $3 \times 10^{-6}$  of probability for a severe core damage at La Salle Unit 2 due to the one-time change in the Technical Specifications. Since the increase in core melt probability from this one-time change in Technical Specifications is estimated to be small, even on a conservative basis, and since the diesel generator lube oil modification to be made will likely improve the long term reliability of the diesel generators, we find the proposed change to be acceptable.