June 5, 1985

Docket No. 50-255
LS05-85-06-006

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Mr. David J. VandeWalle
Director, Nuclear Licensing
Consumers Power Company
1945 West Parnall Road
Jackson, Michigan 49201

Dear Mr. VandeWalle:

SUBJECT: EMERGENCY DIESEL GENERATOR - LIMITING CONDITION FOR OPERATION

Re: Palisades Plant

The Commission has issued the enclosed Amendment No. 88 to Provisional Operating License No. DPR-20 for the Palisades Plant. This amendment is in response to your application dated May 24, 1985.

This amendment modifies Technical Specification 3.5.2i. to extend by 3 days the time that one of the emergency diesel generators may be inoperable during the month of May 1985. The amendment was approved by a telephone call from the Assistant Director for Safety Assessment on May 24, 1985. We understand that both diesel generators were tested and declared operable at 6:15 p.m. on May 26, 1985, thereby terminating operation under this emergency allowance.

A copy of the Safety Evaluation is also enclosed. A Notice of Issuance of Amendment to License and Final Determination of No Significant Hazards Consideration and Opportunity for Hearing will be included in the Commission's next biweekly notice in the Federal Register.

Sincerely,

Original signed by:

John A. Zwolinski, Chief
Operating Reactors Branch #5
Division of Licensing

Enclosures:
1. Amendment No. 88 to License No. DPR-20
2. Safety Evaluation

cc w/enclosures:
See next page

DL: ORB #5	DL: ORB #5	OELD	DL: ORB #5	DL: ORB #5
CJamerson:jb	TWambach		JZwolinski	DCrutchfield
5/30/85	5/30/85	5/31/85	6/4/85	6/4/85

SEQ1 EX/04
1/1

Mr. David J. VandeWalle
Consumers Power Company

Palisades Plant

cc
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Palisades Plant
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

CONSUMERS POWER COMPANY

PALISADES PLANT

DOCKET NO. 50-255

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 88
License No. DPR-20

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

   A. The application for amendment by Consumers Power Company (the licensee) dated May 24, 1985 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 on a one time only basis by changes to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 3.B of Provisional Operating License No. DPR-20 is hereby amended to read as follows:

   B. Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 88, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment became effective on May 24, 1985.

FOR THE NUCLEAR REGULATORY COMMISSION

John A. Zwolinski, Chief
Operating Reactors Branch #5
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 5, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 88

PROVISIONAL OPERATING LICENSE NO. DPR-20

DOCKET NO. 50-255

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

REMOVE	INSERT
3-42	3-42

3.7 ELECTRICAL SYSTEMS (Cont'd)

a. Station power transformer 1-2 (2400 V) may be inoperable for up to 24 hours provided the operability of both diesel generators is demonstrated immediately.

b. Start-up transformer 1-2 (2400 V) may be inoperable for up to 24 hours provided the operability of both diesel generators is demonstrated immediately. Continued operation beyond 24 hours is permissible provided that a report is sent to the NRC immediately with an outline of the plans for prompt restoration of the start-up transformer and the additional precautions to be taken while the transformer is out of service, and continue operating until notified differently by the NRC.

c. 2400 V engineered safeguards bus 1C or 1D may be inoperable for up to 8 hours provided the operability of the diesel generator associated with the operable bus is demonstrated immediately and there are no inoperable engineered safety feature components associated with the operable bus.

d. 480 V distribution bus 11 or 12 may be inoperable for up to 8 hours provided there are no inoperable safety feature components associated with the operable bus.

e. MCC No. 1 and 7 or 2 and 8 may be inoperable for up to 8 hours provided there are no inoperable safety feature components associated with the operable pair of MCC.

f. 125 V d-c bus No. 1 or 2 may be inoperable for up to 8 hours provided there are no inoperable safety feature components associated with the operable bus and adequate portable emergency lighting is available during the inoperability of the No. 2 bus.

g. One of the four preferred a-c buses may be inoperable for 8 hours provided the reactor protection and engineered safety feature systems supplied by the remaining three buses are all operable.

h. One of the station batteries may be inoperable for 24 hours, provided both battery chargers on the affected bus are in operation.

i. One of the diesel generators may be inoperable for up to 7 days* (total for both) during any month, provided the other diesel is started to verify operability, shutdown and the controls are left in the automatic mode, and there are no inoperable engineered safety feature components associated with the operable diesel generator.

* 10 days one time only, for the month of May 1985.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 88 TO PROVISIONAL OPERATING LICENSE NO. DPR-20

CONSUMERS POWER COMPANY

DOCKET NO. 50-255

1.0 INTRODUCTION

By letter dated Friday, May 24, 1985, the licensee for the Palisades Plant requested an emergency change to the Technical Specifications regarding the maximum allowable time for continued plant operation with one of the two redundant emergency diesel generators (EDGs) out-of-service. The plant has experienced an unexpected significant failure of an EDG that will require slightly longer than the prescribed routine allowance to complete the repair action. If the NRC does not act promptly, the plant will be required by the Technical Specifications to shut down at 2:00 p.m. Sunday, May 26, 1985. The licensee has requested a one-time extension from 7 days to 10 days for May 1985.

2.0 BACKGROUND

The plant Technical Specifications allow that one of the two redundant EDGs may be out-of-service (OOS) for a maximum of 7 days, total for both EDGs, in any one month. Each month each EDG is checked and tested. During the checking, the EDG is technically inoperable. These and other preventative maintenance (PM) actions amount to about 8 hours per EDG per month against the 7 day allowance. Following the PM checks, the EDGs are fast started and loaded to full load for 1/2 hour, and half load for the next 5 1/2 hours. Prior to this particular occurrence, 16 hours of the 7 days had been used.

During the required monthly test for May 1985, the EDG 1-1 tripped shortly before the completion of the 6 hour load run. Due to unexpected substantial repairs and the need to acquire certain parts, the repair of EDG 1-1 is not expected to be completed prior to the expiration of the total cumulative 7 days. Further, the other EDG (1-2) must be tested which involves additional OOS time.

3.0 EVALUATION

On May 20, 1985, the licensee proceeded with the monthly surveillance of EDG 1-1 as described above. No abnormal indications were observed prior to the start; particularly, no water was found in the cylinders. Shortly before the 6 hour load run was completed, the EDG tripped. It is believed the trip was on "overcranking" as well as low pressure on water jacket coolant.

Investigation with the onsite assistance of the EDG manufacturer has found a coolant water leak, originally believed to be in the aftercooler, but now confirmed to be in the head for the #9 cylinder. Given the advice of the manufacturer's representative, the licensee has pursued an aggressive course of action to identify the leak and correct the problem.

The NRC staff has had lengthy discussions with the licensee's technical staff and is thereby convinced of the reasonableness of the licensee's actions in response to this failure. The time involved was extended by two factors: first, the most probable source of the leak was thought to be the aftercooler, which was removed and tested thoroughly before it was determined not to be the source of the leak. Hydro-tests of the engine itself showed that there was a single leak and that this leak was in the #9 cylinder head.

The licensee maintains a stock of spare parts for the EDGs. However, a concern arose regarding shelf-life consideration of some of the various parts that would be involved. Replacement parts were located in the manufacturer's shop in Albany, New York. The licensee sent a private aircraft to acquire these accessory items. Receipt is expected about 8:00 p.m. Friday, May 24, 1985. Given the receipt of acceptable parts on the expected schedule, the licensee expected to complete rebuilding the EDG as early as Saturday, May 25, 1985. Testing of the EDG could be completed late Sunday evening, May 26, 1985, as the "best estimate."

The Technical Specification allowance would have expired at 2:00 p.m. Sunday, May 26, 1985.

Further, the testing of the other EDG (1-2) will require additional time if done properly. Also, the staff and the licensee believe that this repair and testing action should not be done hastily or under avoidable pressure.

Moreover, there needs to be a reasonable allowance for the contingencies that inevitably are involved. If, for example, a part received is unacceptable, and another plane trip could be required to acquire another part, an additional day could easily be necessary. With contingency, the EDG was expected to be repaired, tested, declared operable and returned to service by 2:00 a.m., Tuesday, May 28, 1985.

Another consideration was the pressure on the mechanics actually performing the repairs and subsequent EDG testing. Therefore, the staff was convinced on the basis of the technical details for this particular situation, that the licensee's actions were not only reasonable but duly cautious in view of both the safety significance of the EDGs and the personnel management considerations. Therefore, the licensee's request for an extension represented a reasonable time period for this situation.

In assessing the safety significance of an extension of the EDG OOS allowance time, the staff considered the probability of the loss-of-offsite power, the probability that the remaining EDG will function properly, and capability of the station to maintain safe shutdown in the event of a complete loss of all a.c. power. In assessing these three areas, the staff reviewed the NRC Loss of Offsite Power Survey, had ORNL run a computer search of related events, discussed the situation with the NRC technical staff member who did the electric power systems review under the Systematic Evaluation Program (SEP), and discussed the matter of safe shutdown capabilities with the Integrated Assessment Project Manager for SEP.

The station has several transmission lines from the electric power grid into the switchyard. The switchyard, however, is about half a mile from the plant; a single immediate access circuit is provided to provide offsite power to the plant. A second circuit can be provided by removing the disconnect links downstream of the main generator and backfeeding through the main transformer to the auxiliary transformer.

The Palisades station has had a relatively poor record regarding loss of offsite power. For the data base period of 1959-1983, the national average for complete losses was about 0.08/year, for a recurrence frequency of one complete loss every 12 years. In contrast the Palisades station experienced 98 partial losses and 4 complete losses in the 13 years since it was licensed. The primary cause of these losses seems to be thunderstorms, which are most prevalent in the present season.

The licensee proposed the following compensatory measure regarding loss of offsite power. The 1C bus would be powered from the startup transformer. Thus, in the event of a plant trip, the bus would continue to be fed offsite power without the need for a fast transfer. To address staff concerns, the licensee agreed to the following additional measures. The electric system dispatcher would be advised of the station situation and requested to take all appropriate actions to maintain stable system conditions in the Palisades vicinity and, in the event of a loss, to restore power to the Palisades station on a top priority basis. Secondly, the licensee would have a crew on active standby at the site to remove the generator disconnect links on an expedited basis for the period of the extension. The crew would refresh themselves on the procedures and assure that all necessary tools are available.

If complete loss of offsite power were to occur, the EDG would become important. The information the staff was able to retrieve on such a rapid basis indicates that the ALCO EDGs at Palisades are considered highly reliable. Between 1976-1978, a 3 year period, there were 156 tests with no failures. For 1972-1983, there were only three failures total, given in one source. The remaining operable EDG (1-2) appears to have had only 2 failures to start in the last 100 tests.

The licensee proposed the following compensatory measures regarding reliability of the remaining EDG. The 1-2 EDG would be test started prior to the end of the 7 day OOS allowance and daily thereafter until EDG 1-1 is declared operable and returned to service. The staff agrees with this measure.

If complete loss of offsite power and failure of the remaining EDG were to occur, capability to maintain safe shutdown would become important. In this arena, three factors are significant: efforts to restore offsite power, core cooling via auxiliary feedwater system, and life of d.c. power. The power restoration efforts have been expedited, as discussed above. The plant design includes a steam driven auxiliary feedwater train which can operate without a.c. power. As part of the SEP, the station has upgraded the batteries to provide an operating time of at least 8 hours and, with emergency load stripping, up to 14 hours.

The licensee proposed the following compensatory measure regarding safe shutdown capability. The plant staff would not allow the operable steam driven auxiliary feedwater train to be taken out-of-service before EDG 1-1 is declared operable and returned to service. The staff agrees with this measure.

In addition to the considerations discussed above, the staff has discussed this situation with the NRC Region III staff. They agree with the adequacy of the compensatory measures agreed upon. Region III suggested that, if at any time the licensee became aware that the return to service of EDG 1-1 would not be completed by the expected schedule plus the contingency allowance (i.e., by 2:00 a.m. Tuesday, May 28, 1985), the licensee should immediately advise NRR so the situation could be reassessed. The staff informed the licensee of the desire for prompt information under those circumstances and the licensee has agreed to such a notification.

4.0 SUMMARY

The licensee has experienced an unexpected failure of EDG 1-1 which has required extraordinary time to repair, test, and return to service. The licensee proposed certain compensatory measures to be taken during an extension of the allowable out-of-service specification. To address staff concerns, the licensee has agreed to certain additional compensatory measures. In view of these considerations, the staff concludes that the total compensatory measures to be taken are sufficient to offset the incremental increase in the safety risk of an extension of the EDG out-of-service allowance on a one-time basis. Therefore, an extension from 7 days to 10 days for May 1985 is acceptable.

4.1 Final No Significant Hazards Consideration Determination

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that a license amendment involves no significant hazards consideration if operation of the facility in accordance with the amendment would not:

(1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or

(2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or

(3) Involve a significant reduction in a margin of safety.

The requested change is a minor change that essentially provides a 3 day contingency to finish repairs to the diesel in the event of unforeseen delay. As noted above in this Safety Evaluation, the staff has concluded that this change is acceptable. The change does not affect the manner in which the plant is operated or the design bases for the plant.

Accordingly, the staff concludes that the amendment to Provisional Operating License DPR-20 extending the out of service time allowance for 3 days on a one-time basis involves no significant hazards considerations.

4.2 State Consultation

The State of Michigan was consulted on this matter and had no comments on the determination.

4.3 Environmental Considerations

The amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has 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 made a final no significant hazards consideration finding with respect to this amendment. Accordingly, the 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 the amendment.

5.0 CONCLUSION

The staff has concluded, based on the licensee's proposal and the compensatory measures agreed to, that: (1) because the amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated, does not create the possibility of an accident of a type different from any evaluated previously, and does not involve a significant reduction in a margin of safety, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ACKNWOLEDGEMENT

This Safety Evaluation was prepared by J. T. Beard, T. Wambach and J. Shea

Dated: June 5, 1985.