



**Consumers
Power**

**POWERING
MICHIGAN'S PROGRESS**

Palisades Nuclear Plant: 27780 Blue Star Memorial Highway, Covert, MI 49043

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U.S. Nuclear Regulatory Commission
Document Control Desk
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**DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT - ELECTRICAL
TECHNICAL SPECIFICATION CHANGE REQUEST - RESPONSE TO REQUEST
FOR ADDITIONAL INFORMATION**

On December 27, 1995 Consumers Power Company submitted a Technical Specifications (TS) change request which would re-write the Electrical Power Systems sections of the Palisades TS. On September 4, 1996, that change request was supplemented, providing answers to NRC reviewers' comments and making associated changes to the proposed TS. On November 4, 1996, the NRC requested additional information regarding our September 4, 1996 submittal. The attachment to this letter provides answers to that Request for Additional Information (RAI).

The RAI deals primarily with the Palisades fuel oil storage and transfer system. Modifications to that system are scheduled to be completed prior to the end of the refueling outage which is currently in progress. The answers to the NRC questions reflect the plant configuration as it will be at the end of the current outage.

Early in 1994 it was discovered that the fuel oil transfer system did not meet all of its initial design requirements. Palisades LER 94-007 (April 7, 1994) and its supplement 94-007-01 (July 25, 1994) reported that the Fuel Oil Transfer System was outside its design basis. A justification for continued operation in that condition was submitted to the NRC on May 23, 1994 and accepted by their June 7, 1994 response. From that time until the shutdown for the current refueling outage, portable equipment was maintained, along with procedures for its use, as a backup to the permanently installed fuel oil transfer equipment.

The original 30,000 gallon Fuel Oil Storage Tank, T-10, is being replaced with a 50,000 gallon tank, T-10A, during the current refueling outage. Installation of the new Fuel Oil Storage Tank completes the efforts to restore the Fuel Oil Transfer system to

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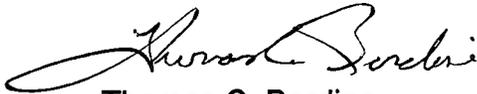
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compliance with its initial design requirements. Therefore, reliance on portable equipment will no longer be necessary.

SUMMARY OF COMMITMENTS

This letter contains no new commitments and no revisions to existing commitments.



**Thomas C. Bordine
Manager, Licensing**

**CC Administrator, Region III, USNRC
Project Manager, NRR, USNRC
NRC Resident Inspector - Palisades**

Attachment

ATTACHMENT

**CONSUMERS POWER COMPANY
PALISADES PLANT
DOCKET 50-255**

**ELECTRICAL TECHNICAL SPECIFICATION CHANGE REQUEST
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

4 pages

ELECTRICAL TECHNICAL SPECIFICATION CHANGE REQUEST
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

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NRC Request:

- 1.0 *The Bases associated with the TS Surveillance Requirement Section 4.7.3.1 indicate that the fuel oil storage tank (T-10) is also used as fuel oil for the diesel fire pumps, heating boilers and waste evaporators, and as lube oil for the Emergency Diesel Generators (EDGs). Provide the following information:*
- a. *The provision in the emergency operating procedures for isolating these components/systems following Loss-Of-Coolant Accident (LOCA), or*
 - b. *Detailed calculations to demonstrate that the fuel oil stored in T-10 and the day tank will be sufficient to support the operation of these components and EDGs for 7 days following a LOCA. Information to be provided should include:*
 - *Fuel oil consumption rate for each of the above cited components.*
 - *Methodology/assumptions used to calculate the fuel oil consumption rates.*
 - *Since the calculated EDG fuel oil consumption rate is based on the time dependence of EDG loads, has a minimum margin of 10% been added to the calculated storage requirement?*

CPCo Response:

- 1.0 Palisades procedures provide for isolating non-essential fuel oil loads. Therefore, the response addresses part "a" of the NRC question.

The procedural requirements for isolating the non-diesel generator (DG) components and systems from Fuel Oil Storage Tank are located in the normal operating procedures, rather than in the emergency operating procedures. These normal procedures are designed to assure that the stored fuel oil level remains well above the TS limit at all times. Therefore, action would be initiated to maintain the T-10A inventory well above the TS limit whether emergency conditions existed or not.

A Fuel Oil Storage Tank low level alarm is provided which actuates at approximately 30,000 gallons, well before the tank volume drops to the proposed TS limit of 23,700 gallons. The alarm response procedure requires the operator to transfer oil from T-926 to T-10A in accordance with the Diesel Generator operating procedure, SOP-22, as necessary to clear the alarm, and to order fuel oil and request delivery in time to prevent T-10A level from falling below the required level.

In addition, if a diesel generator is running, the operator is directed to calculate expected diesel generator fuel consumption, using a graph of fuel oil consumption vs DG load contained in an attachment to SOP-22, and to consider isolating nonessential fuel oil loads as necessary for continued diesel generator operation.

ELECTRICAL TECHNICAL SPECIFICATION CHANGE REQUEST
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NRC Request:

2.0 *Section 8.4.1.3 of the FSAR states that the plant modification reported in Facility Change FC-889 provides the capability to transfer fuel oil from the fuel oil storage tank (T-926) to T-10 and enables a backup fuel supply to T-10 from another onsite source. Provide the following information:*

- a. *Discuss the procedure established to transfer fuel oil from T-926 to T-10 following a LOCA.*
- b. *Discuss the equipment (portable or permanent) to be used for fuel oil transfer from T-926 to T-10. If portable equipment is utilized for the fuel oil transfer, discuss the provision for maintaining the readiness of this portable equipment.*
- c. *Discuss the administrative control and amount of fuel oil reserved in T-926 for the operation of EDG following a LOCA.*

CPCo Response:

- 2.0 a. The instructions for performing the transfer from T-926 to T-10A are contained in the diesel generator operating procedure, SOP-22. Transfer of fuel oil from T-926 to T-10A involves checking the level in each tank, performing a lineup check of about five valves, running fuel transfer pump P-965 to transfer the necessary fuel, and restoring the valves to their proper positions. It is normal practice to add newly delivered fuel oil to T-926 and then to transfer it to T-10A using pump P-965, so the operators are familiar with the process. No reliance is placed on T-926 for a post-LOCA fuel oil supply.
- b. The equipment used to transfer fuel oil from T-926 to T-10A is permanently installed, but the electrical portions are not all Class 1E. The transfer pump, pump P-965, is rated at 20 gpm; a diesel generator consumes about 3.0 gpm when loaded to its maximum (2 hour) rating. With the completion of the replacement of the original 30,000 gallon T-10 with the new 50,000 gallon, missile and tornado proof T-10A, the use of portable equipment for backup fuel oil transfer will no longer be necessary.
- c. Administrative controls currently exist to assure that fuel oil is available in T-926. These controls, however, are intended to assure adequate fuel supplies for other plant equipment than the diesel generators. No reliance is placed on T-926 for a post-LOCA fuel oil supply.

NRC Request:

- 3.0 *The response to the staff's comment (Q-4) states that the proposed 24-hour Allowed Outage Time (AOT) for P-18A was not based on the DG run time (15 hours) due to the available fuel oil stored in the day tank. It was based on a judgement of the relative severity of both DGs being inoperable or both offsite sources being inoperable and was intended to allow a reasonable time for repair of P-18A prior to declaring DG-12 to be inoperable. Discuss in detail how the relative severity of both DGs being inoperable or both offsite sources being inoperable is determined.*

Discussion should include the assumptions and the justifications for the assumptions used to make this determination. (We find that the fuel oil stored in day tank is only sufficient to support DG-12 operation for 15 hours, therefore, the AOT for P-18A should be less than 15 hours.)

CPCo Response

- 3.0 The reference to relative severity of both DGs being inoperable or both offsite sources being inoperable was not intended to refer to a calculation done by Consumers Power Company, but to the perceived relative severity inferred from the AOTs stated in the Standard Technical Specifications (STS). STS provide a 2 hour AOT for both DGs being inoperable, and a 24 hour AOT for both offsite circuits being inoperable. It was intended to suggest that the impact of P-18A being inoperable would be far less severe than both DGs being inoperable and less severe than both offsite sources being inoperable.

With P-18A inoperable, there would still be a 7 day fuel oil supply for DG 1-1 (that fuel contained in T-10A and transferred by P-18B) and a 15 hour supply for DG 1-2 (that fuel contained in DG 1-2 Day Tank which is gravity fed);

With both DGs inoperable, no onsite AC source would be available.

With both offsite sources inoperable, there would be the normal 7 day fuel oil supply for either DG (that fuel contained in T-10A and transferred by either P-18A or P-18B) and 15 hour supply for the other (that fuel contained in the associated Day Tank which is gravity fed). If the offsite sources were actually unavailable, there would be an immediate necessity for DG operation to supply plant loads.

The implied comparison was used to choose a proposed AOT which would be consistent with those AOTs provided in the STS based on the perceived impact of P-18A being inoperable.

As stated above, the proposed 24 hour AOT was solely the result of a judgement. It was intended to provide an appropriate limitation on continued plant operation if P-18A became inoperable, yet to provide time to accomplish repairs. Although the proposed 24 hour AOT would be preferred, a reduction in the proposed P-18A AOT from 24 to 15 hours would be acceptable to Consumers Power Company.

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NRC Request:

4.0 *To be consistent with the guidance described in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants," the following should be included in the TS Action Sections:*

- *The minimum inventory of fuel oil required to be maintained in the DG day tank.*
- *The minimum air pressure required to be maintained in the DG starting tank.*

CPCo Response:

The proposed TS are intended to be consistent with Standard Technical Specifications, NUREG 1432 (STS), with the exception of format and plant specific detail. In both STS and the proposed TS, limits such as the minimum inventory of fuel oil and the minimum air pressure are specified in the associated surveillance requirement (SR). Proposed SRs 4.7.1.5 (Day Tank fuel oil inventory verification) and 4.7.1.4 (Starting air pressure verification) provide requirements equivalent to STS SRs 3.8.1.4 and 3.8.3.4, respectively.

- **Minimum Inventory of Fuel Oil:**
Neither the STS nor the proposed TS contain a specific Action for the day tank level being less than that required by the SR. In each case, the associated DG must be declared to be inoperable due to failure to meet an associated SR.
- **Minimum Air Pressure:**
STS LCO 3.8.3 allows a 48 hour AOT when starting air pressure is below the required 5 start capability, but sufficient for at least one start. The Palisades design does not specify the capability for 5 attempted DG starts. The design information states that sufficient air is available for approximately 40 seconds of cranking time. Since no design or test information is available to determine an appropriate reduced pressure which would assure one start, a 48 hour AOT was considered to be inappropriate. With below normal pressure, no specific number of starts can be assured and the DG must be assumed to be inoperable. The associated SR was moved to LCO 3.7.1, so that failure to meet the SR would require the associated DG to be declared inoperable, similar to the failure to meet any other DG SR. This treatment is conservative with respect to that in STS by not allowing 48 hours to restore air pressure prior to declaring the DG to be inoperable. This difference from STS was discussed briefly in Attachment 5 to our December 27, 1995 submittal.