DAIRYLAND POWER COOPERATIVE

La Crosse, Wisconsin

54601 May 23, 1979

> In reply, please refer to LAC-6312

DOCKET NO. 50-409

Director of Nuclear Reactor Regulation ATTN: Mr. Dennis L. Ziemann, Chief Operating Reactors Branch #2 Division of Operating Reactors U. S. Nuclear Regulatory Commission Washington, D. C. 20555

SUBJECT: DAIRYLAND POWER COOPERATIVE LA CROSSE BOILING WATER REACTOR (LACBWR) PROVISIONAL OPERATING LICENSE NO. DPR-45 APPLICATION FOR AMENDMENT TO LICENSE

- Reference: (1) NRC Letter, Wetmore to DPC (Licensee), dated April 30, 1979.
 - DPC Letter, LAC-6130, Linder to Ziemann, (2) dated February 26, 1979.
 - DPC Letter, LAC-6274, Linder to Ziemann, (3) dated May 9, 1979.
 - (4) NRC Letter, Reid to Madgett, dated March 3, 1978.

Gentlemen:

Your letter (Reference 1) summarized points discussed during our meeting on April 26, 1979 regarding Fuel Cycle 5 fuel performance. In response to your request to consider the need to modify the current Technical Specification off-gas activity limits to account for the removal of fissionable material from the primary coolant system as Cycle 6 progresses. We are submitting an application to amend Provisional Operating License No. DPR-45 by proposing changes to Technical Specifications for the La Crosse Boiling Water Reactor (LACBWR) which deal with off-gas activity.

Our letter (Reference 2) forwarded the refueling plan for LACBWR Fuel Cycle 6 (LAC-TR-067) and included proposed changes to the Technical Specifications necessary to include Type I fuel for the proposed operation during LACBWR Fuel Cycle 6. In addition, our letter (Reference 3) responded to NRC questions concerning the submittal of Reference 2 and included report LAC-TR-068, "LACBWR Cycle 5 Fuel Performance - Finalized Refueling Plan for Cycle 6".

The proposed changes to Technical Specifications are as follows:

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Referring to Reference 4 (Amendment 11 to Provisional Operating License No. DPR-45) page 32, Section 4.2.2.22 ACTIVITY, Limiting Condition for Operation, paragraph b - change to read:

"REACTOR COOLANT SYSTEM

4.2.2.22 ACTIVITY

LIMITING CONDITION FOR OPERATION

4.2.2.22 The activity of the:

- a. Reactor coolant shall be limited to:
 - 1. < 0.2 µCi/gram DOSE EQUIVALENT I-131,
 - 2. < 100/E µCi/gram, and
 - < 5.0 x 10⁻⁶ µCi/gram gross alpha activity.
- b. Off-gas emission, measured at the 150 cu. ft. off-gas holdup tank effluent monitor, shall be limited to $\leq 750 \text{ Ci/day (P/P_F)} + A_T(1-.018t)(P/P_F)$, where:
 - (P/PF) = fraction of RATED THERMAL POWER between 33 MWt and 165 MWt,
 - A_T = tramp activity, Ci/day, not to exceed 1500, at THERMAL POWER (PF) as determined upon initial power escalation after each refueling.
 - 3. t = days after the determination of A_T with the limitation that t < 50,
 - Activity values shall be normalized for correlation with previous cycles due to changes in monitoring, sampling and/or analysis methods.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3 and 4."

Referring to Reference 4, page 32b, as corrected by NRC Letter, Ziemann to Madgett, dated April 18, 1978, Section 4.2.2.22 ACTIVITY -Action paragraphs b and f - change to read:

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"b. In OPERATIONAL CONDITION 1, with off-gas activity:

- 1. > 750 Ci/day (P/P_F) + A_T (1-.018t) (P/P_F) but ≤ 1000 Ci/day, POWER OPERATION may continue for up to 48 hours provided that operation under these conditions shall not exceed 800 hours in any consecutive 12month period. Should the total operating time at an off-gas activity > 750 Ci/day (P/P_F) + A_T (1-.018t) (P/P_F) exceed 500 hours in any consecutive six-month period, the licensee shall report the number of hours of operation above this limit to the NRC within 30 days.
- 2. > 750 Ci/day (P/PF) + AT(1-.018t) (P/PF) for more than 48 hours during one continuous time interval or > 1000 Ci/day, be in at least HOT SHUTDOWN with the main steam line isolation valve closed within 12 hours and in COLD SHUTDOWN within the next 24 hours."
- "f. In OPERATIONAL CONDITION 1, 2, 3 or 4 with the activity of the primary coolant > 0.2 µCi/gram DOSE EQUIVALENT I-131, or > 100/E µCi/gram, or > 5.0 x 10⁻⁶ µCi/gram gross alpha activity, or with the off-gas activity > 750 Ci/day (P/PF) + AT(1-.018t) (P/PF), perform the sampling and analysis requirements of Items 1b, 4b and 6b of Table 4.2.2.22-1."

Referring to Reference 4, page 32f, Section 4.2.2.22 and 5.2.16 ACTIVITY bases - change to read:

"The limitation on off-gas emission and the limitation on gross alpha activity are established to ensure fuel integrity. The numerical limits were selected using extensive data collected during fuel cycles 4 and 5. The off-gas activity limitation formula has been derived to relate off-gas production and power level and conservatively precludes reduced power operation without also reducing the limiting condition for operation off-gas activity. The formula contains a factor $A_T(1-.018t)(P/PF)$ which accounts for base level tramp Uranium activity in the coolant and on the core surfaces at the beginning of the cycle. This tramp activity term is reduced to 0.1 of the BOC value within 50 days to account for clean-up of the system during operation."

We have determined that a fee is not necessary for this license amendment since it changes paragraphs to Technical Specifications as a result of verbal and written Commission requests (Reference 1).

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The information submitted in this pplication for license amendment has been reviewed by LACBWR Committees as prescribed in Technical Specifications.

We are also including with this submittal, as Enclosure 1, DPC's reply to a question from the NRC Staff (May 22, 1979) concerning verification of the LACBWR core configuration for Cycle 6 operation.

If there are any questions concerning this submittal, please contact us.

Very truly yours,

DAIRYLAND POWER COOPERATIVE

Frank Ande

Frank Linder, General Manager

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Enclosure

cc: J. Keppler, Reg. Dir., NRC-DRO III

STATE OF WISCONSIN)

COUNTY OF LA CROSSE)

Personally came before me this 23th day of May, 1979, the above named Frank Linder, to me known to be the person who executed the foregoing instrument and acknowledged the same.

Notary Public, La Crosse County Wisconsin. My Commission Expires March 2, 1980.

ENCLOSURE 1 TO LAC-6312

Reply to Verbal Question from NRC Staff (May 22, 1979) Concerning Verification of the LACBWR Core Configuration for Cycle-6 Operation.

The 26 fresh (unirradiated) Type III fuel assemblies and 2 fresh Type I fuel assemblies included in the design core loading for Fuel Cycle-6 were loaded according to procedures in Addendum No. 1 of Operations Procedure OP-35-02. Prerequisite 2.3 of this procedure required that "Before new fuel is loaded, the Fuel Accountability Representative shall visually examine the existing core load: 3 to verify that an irradiated fuel assembly of the proper type is in each location designated for a previously exposed fuel assembly in the attached Figure 1 and that only locations designated for new fuel are still empty." This examination was done and the required condition verified by Dr. Seymour Raffety, the LACBWR Reactor Engineer and Fuel Accountability Representative, at 0635 hours on May 7, 1979. The visibility during the examination was excellent and there was no problem in identifying the Type II and Type III assemblies by the difference in upper end fittings. There was no fresh fuel in the core and the only empty locations were those designated for fresh fuel in the design loading for Cycle-6. This examination was documented on the "LACBWR Fuel Element Transfer Record" form. The original of this document is filed in the SNM Accounting files and copies with procedure Addendum No. 1 of Operations Procedure OP-35-02.

At 1440 hours on May 7, 1979, the loading of fresh fuel into the LACBWR core commenced with the insertion of assembly 1-8 in core position B-5. Assembly 1-24 was inserted in core position B-6 at 1500 hours on May 7th. These assemblies were identified and their positioning in the core witnessed and documented by a LACBWR Fuel Accountability Delegate (Paul Sampson) acting independently of the fuel handling crew.

After the two fresh Type I assemblies were loaded, the fresh Type III fuel was loaded with the Fuel Accountability Delegate (Paul Sampson) or the Alternate to the Fuel Accountability Representative (Lynn Papworth) witnessing and documenting each move. This documentation is filed in the SNM Accounting files with copies filed with the fuel loading procedure.

After the refueling was completed according to the design LACBWR reload configuration for Cycle-6 as shown in Figure 7 of LAC-TR-068, a new small high resolution TV camera was used to read the serial number on the handle of each fuel assembly in place in the core. (This had not been possible with the equipment available during previous reloads). The numbers were easily distinguished with the new TV equipment and as the number of each assembly was read, its location was checked against the design reload configuration and

documented. (No TV tape record was made). The configuration of the fully loaded core was thus verified to be in agreement with the design loading and the documentation was signed by L. Papworth at 0330 hours on May 8, 1979. This documentation is filed with the fuel loading procedure.

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