DAIRYLAND POWER COOPERATIVE

La Crosse, Wisconsin

54601

June 20, 1979

In reply, please refer to LAC-6350

DOCKET NO. 50-409

Mr. James G. Keppler
Regional Director
U. S. Nuclear Regulatory Commission
Directorate of Regulatory Operations
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

SUBJECT: DAIRYLAND POWER COOPERATIVE
LA CROSSE BOILING WATER REACTOR (LACBWR)
PROVISIONAL OPERATING LICENSE NO. DPR-45
REPORTABLE OCCURRENCE NO. 79-10

Reference: (1) LACBWR Technical Specifications, Section 3.9.2.b.(2).
(2) LACBWR Technical Specifications, LCO 4.2.2.22.a.3.
(3) LACBWR Technical Specifications, Section 4.2.2.22.f.

Dear Mr. Keppler:

In accordance with Reference (1), this is to notify you of conditions leading to operation in a degraded mode permitted by a limiting condition for operation.

Reference (2) established the limitations for the gross alpha activity of the reactor coolant system.

Reference (3) established sampling analysis and reporting requirements in the event the gross alpha activity of the reactor coolant system exceeded specified limits.

Analyses of reactor coolant system samples taken at the inlet to the primary purification system cation exchanger at 1831 hours on May 22, 1979 indicated that the coolant gross alpha activity exceeded the limiting condition for operation ($\leq 5.0 \times 10^{-6}$ µCi/gram). The as found gross alpha activity value was 1.24×10^{-5} µCi/gram). Primary purification beta-gamma and alpha decontamination factors were noted to be low and following conduct of a verification sample analysis taken at 2230 hours on May 22, 1979, preparations were made to replace primary purification resins. New resins were charged to the resin

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beds during the 0000-0800 shift on May 23, 1979. An alpha activity sample taken at 0925 hours on May 23, 1979 was found to be 4.07×10^{-6} µCi/gram which is in conformance with the Reference (2) limiting condition for operation activity value.

Since resin replacement, the indicated gross alpha activity in the primary system has continued to decrease with the most recent sample analysis, as collected on June 11, 1979, indicating an activity value of 1.37×10^{-7} µCi/gram.

Attached Table 1 contains additional sampling and analysis results and the additional information required pursuant to Reference (3). It should be noted that the primary coolant was not sampled for gross beta and gamma activity and iodine activity at the eight and twelve hour intervals. The primary purification resin beds were bypassed during this time so as to replace resins and the sample points tap into a section of line that was also bypassed by primary purification flow. It was felt that samples would not be representative of the primary system coolant activity in the bypassed condition and therefore they were not collected.

The observed increase in gross alpha activity in the reactor coolant system was not attributable to fuel failures since the reactor had recently been refueled and reactor startup for beginning of fuel cycle 6 had not yet been initiated. The contribution to the temporary indicated increase in gross alpha activity of the reactor coolant system came from residual irradiated fuel material which entered the system as a result of degraded fuel pin cladding primarily experienced during Cycle 4 and to a much lesser degree during Cycle 5 and subsequent handling of the irradiated fuel assemblies during refueling. Handling of core components during refueling and later operation of the forced circulation pumps resulted in the more general distribution of suspended alpha bearing material in the coolant. Continued operation of the primary purification system will reduce the gross alpha activity of the reactor coolant system by capturing fine particles of irradiated fuel as it is transported in the system. With observed improvements in results of subsequent samples, no further corrective action is deemed necessary.

A Licensee Event Report (Ref. Appendix A, Regulatory Guide 1.16, Revision 4) is enclosed.

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

Very truly yours,

DAIRYLAND POWER COOPERATIVE

Frank Linder, General Manager

FL:LGP:af
Enclosure

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cc: Director, Office of Inspection and Enforcement (30)
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Director, Office of Management Information and (3)
Program Control
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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TABLE 1

Additional Sampling Results and Information

Event Date: May 22, 1979

Initial Gross Alpha Activity Sample Above 5×10^{-6} µCi/gram at 1831 Hours (1.24×10^{-5} µCi/gram).

Subsequent Samples at Intervals not Exceeding 4 Hours:

Time	Gross Alpha Activity (µCi/gram)	I^{131} Conc. (µCi/gram)	I^{133} Conc. (µCi/gram)	I^{135} Conc. (µCi/gram)	Gross Beta-Gamma Activity (µCi/gram)
2230	1.25×10^{-5}	1.59×10^{-5}	2.49×10^{-5}	5.78×10^{-5}	1.24×10^{-2}
0230*					
0630*					

*Samples not taken; sample points bypassed for resin replacement.

Reactor Power Level for 48 Hours Prior to the Sample Exceeding the Limit

Reactor Subcritical for this entire time period.

Fuel Burnup by Core Region.

See Attached Figure 1.

Cleanup Flow History Starting 48 Hours Prior to the Sample.

The Primary Purification System Flow was Recorded as:

5/20/79 @ 1800 to 2200: 40-42.5 gpm
5/20/79 @ 2300 to 5/21/79 @ 0800: 37-38.5 gpm
5/21/79 @ 0900 to 1000: 36-36.5 gpm
5/21/79 @ 1100: System Shut Down
5/21/79 @ 1200: 37 gpm
5/21/79 @ 1300 to 1400: 33-34.5 gpm
5/21/79 @ 1500 to 1900: 29-31.5 gpm
5/21/79 @ 2000 to 2400: System Shut Down
5/22/79 @ 0100: 31 gpm
5/22/79 @ 0200 to 5/22/79 @ 1900: 41-42.5 gpm

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TABLE 1 - (Cont'd)

Additional Sampling Results and Information

Purification System Decontamination Factors:

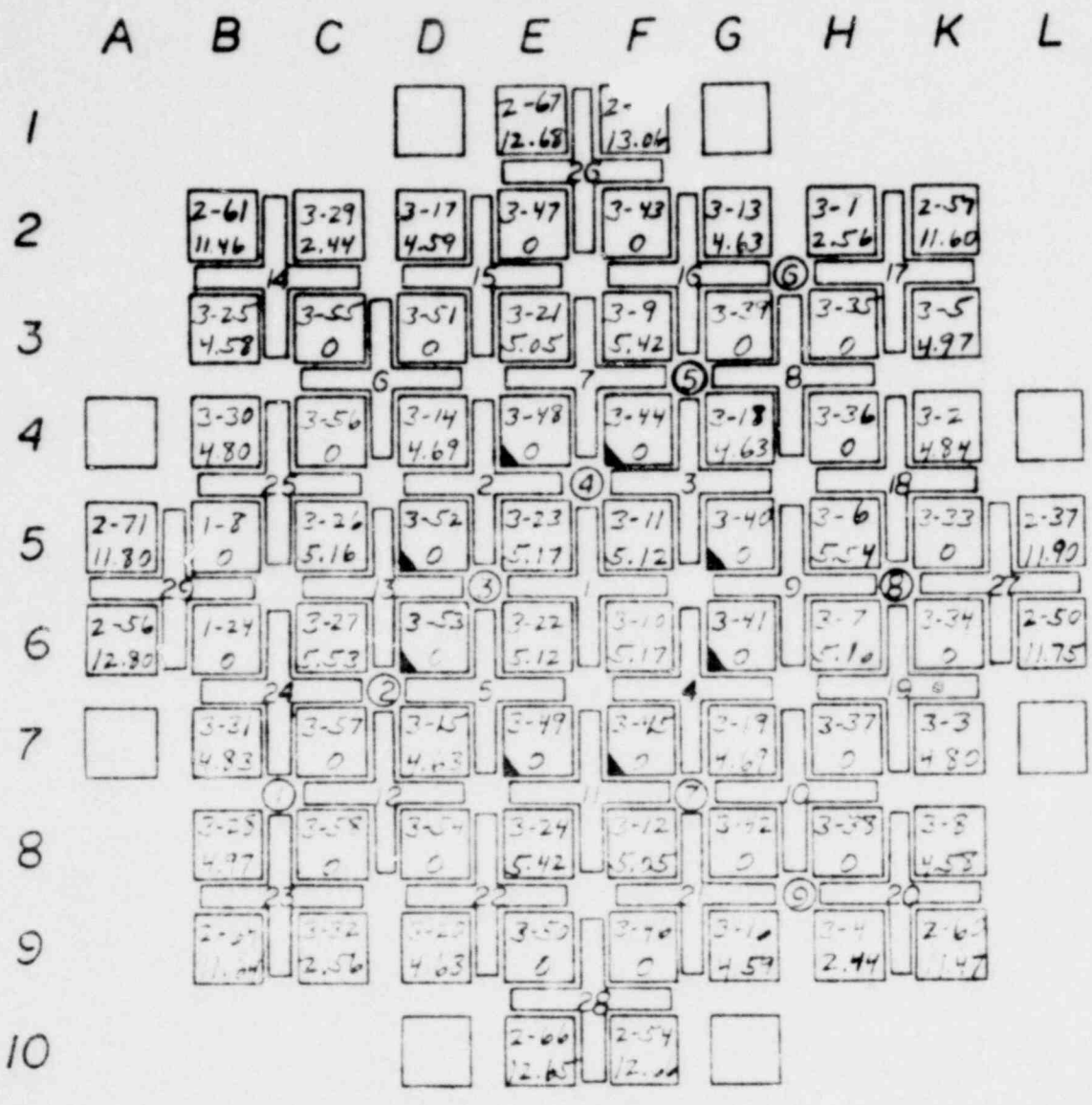
4/16/79 @ 0046	β-γ	3.8:1	α 3.8:1
5/22/79 @ 1831	β-γ	1.62:1	α 1.46:1

Off-Gas Level Starting 48 Hours Prior to the Sample.

No Off-Gas Flow.

Gross Alpha Activity of the Last Sample Taken Prior to the Sample Exceeding the Limit.

May 21, 1979 @ 0110 hours: 1.16×10^{-6} uCi/gram.



IN CORE FLUX MONITORS ○

PLANT NORTH

Fuel Assembly Number

Average Exposure (GWD/MTU)
Denotes Stainless Steel Shroud Can

FIGURE 1 - LACBWR Reload Configuration Per Cycle 6. The BOC Core Average Exposure is 4,203 MWD/MTU (Trial Reload H).

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