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January 5, 1982

In reply, please refer to LAC-8006

DOCKET NO. 50-409

MAR 8

U. S. Nuclear Regulatory Commission ATTN: Mr. Darrell G. Eisenhut, Director Division of Licensing Office of Nuclear Reactor Regulation Division of Operating Reactors Washington, D. C. 20555

SUBJECT: DAIRYLAND POWER COOPERATIVE LA CROSSE BOILING WATER REACTOR (LACBWR) PROVISIONAL OPERATING LICENSE NO. DPR-45 SEP TOPIC II.2.C - ATMOSPHERIC TRANSPORT AND DIFFUSION CHARACTERISTICS FOR ACCIDENT ANALYSIS

Reference: (1) DPC Letter, LAC-7387, Linder to Eisenhut, dated February 27, 1981.

Gentlemen:

Enclosed find Safety Evaluation Report (SER) for SEP Topic II.2.C, Atmospheric Transport and Diffusion Characteristics for Accident Analysis, which we have prepared for the La Crosse Boiling Water Reactor.

Our letter, Reference 1, identified topics for DPC to submit for NRC evaluation. The subject topics were listed in the schedule submitted with Reference 1.

If there are any questions regarding this letter, please contact us.

Very truly yours,

DAIRYLAND POWER COOPERATIVE

Frank Funder /4

Frank Linder, General Manager

FL:TAS:JDP:af

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

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LA CROSSE BOILING WATER REACTOR

SYSTEMATIC EVALUATION PROGRAM

SAFETY EVALUATION REPORT

TOPIC II.2.C

ATMOSPHERIC TRANSPORT AND DIFFUSION CHARACTERISTICS FOR ACCIDENT ANALYSES

This analysis is pursuant to Section 50.24 of 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities". It follows Regulatory Guide 1.3, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Loss-of-Coolant Accident for Boiling Water Reactors".

LACBWR SITE

LACBWR is located on the east shore of the Mississippi River, within the Mississippi River Valley. Five hundred foot bluffs rise rather abruptly about 1000' from the plant. The plant stack is 350 feet tall. For this reason, terrain plays a major factor in ψ/Q calculation, the full stack height (100m) was used. However, for the low population zone* (4828m) calculations, the ground level case is assumed.

#/Q CALCULATIONS AT EXCLUSION AREA BOUNDARY AND LOW POPULATION ZONE

Reference is made to NRC Regulatory Guide 1.3. The following ψ/Q data is submitted, interpolated using the data in Regulatory Guide 1.3, and consistent with the previous mentioned terrain limitations:

Time Period		Distance		ψ/Q Sec./m ³
0-2	Hrs.	E.A.B.	(338 m)	1.5×10 ⁻⁵
0-8	Hrs.	L.P.Z.	(4828 m)	6.3x10 ⁵
8-24	Hrs.	L.P.Z.	(4828 m)	1.3x10 ⁵
1-4	Days	L.P.Z.	(4828 m)	4.3x10 ⁻⁶
4-10	Days	L.P.Z.	(4828 m)	9.2x10 ⁻⁷

This is a preliminary submission. By May 15, 1982, we will compute the site dependent ψ/Q values following the method outlined in Regulatory Guide 1.145. Site meteorology from 1978 and 1979 will be utilized for this analysis.

*From LACBWR Safeguards Report, August 1967, ACNP-65544.