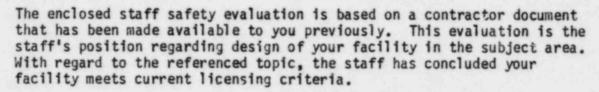
Docket No. 50-409 LS05-81-09-052

> Mr. Frank Linder General Manager Dairyland Power Cooperative 2615 East Avenue South La Crosse, Wisconsin 54601

Dear Mr. Linder:

SUBJECT: SEP TOPIC VII-6, FREQUENCY DECAY SAFETY EVALUATION

FOR LA CROSSE



Sincerely,

Dennis M. Crutchfield, Chief Operating Reactors Branch No. 5 Division of Licensing

Enclosure: As stated

cc w/enclosure: See next page 5504 1/1 DSn use (38)

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# SYSTEMATIC EVALUATION PROGRAM TOPIC VII-6 LA CROSSE

#### TOPIC VII-6 FREQUENCY DECAY

#### I. Introduction

Issue 9 of NOREG-0138 states that the staff should require that a post-ulated rapid decay of the frequency of the offsite power system be included in the accident analysis and that the results be demonstrated to be acceptable. Alternatively, the reactor coolant pump (RCP) circuit breakers should be designed to protection system criteria and tripped to separate the pump motors from the offsite power system because rapid decay of the frequency of offsite power system has the potential for slowing down or braking the RCP thereby reducing the coolant flow rates to levels not considered in previous analyses.

#### II. Review uniteria

The review criteria for reactor trip systems are presented in Table 7-1 of the Standard Review Plan.

### III. Related Safety Topics and Interfaces

Set Points (Topic V!I-1.A) and Degraded Grid (Topic VIII-1.A) are related review areas that are outside the scope of this Topic.

Although Topic VIII-1.A is not dependent on the present topic for completion, the conclusions with regard to frequency decay should be compatable.

## IV. Review Guidelines

Issue 9 of NUREG-0138, "Staff Discussion of Fifteen Technical Issues Listed in Attachment to November 3, 1976 Memorandum from Director, NRR to NRR Staff," provides suitable guidance for this review.

# V. Evaluation

Oak Ridge National Laboratory (ORNL), under a technical assistance program, reviewed the frequency decay rate pheromena and its effects on RCP's. The results of the review are presented in Section 4 of NUREG CR 1464, "Review of Nuclear Power Plant Offsite Power Source Reliability and Related Recommended Changes to the NRC Rules and Regulations." In summary, the report shows that the conditions required for dynamic braking of reactor coolant pumps are a sustained and rapid decrease in frequency while maintaining bus voltage. These conditions are only realized in a highly capacitive system using large amounts of buried transmission cables (such as Long Island). The Dairyland Power system does not use large amounts of buried transmission cable.

#### VI. Conclusion

The conditions necessary for an unacceptable frequency decay rate are not present in the La Crosse offsite electrical distribution system. Accordingly, the staff considers this issue not to be applicable to La Crosse.