September 21, 1981

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

The enclosed staff safety evaluation is based on a contractor document that has been made available to you previously. This evaluation is the staff's position regarding design of your facility in the subject area. With regard to the referenced topic, the staff has concluded your facility meets current licensing criteria.

Sincerely,

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

Enclosure:
As stated

cc w/enclosure:
See next page

SE04
5
1/1
DSN use (38)

ADD!
G. Staley
G. Cwalina

OFFICE	SEPB	SEPB	SEPB	ORB#5	ORB#5	AD:SA:DL	
SURNAME	RCaruso:bl	RHermann	WRussell	RCaruso	DCrutchfield	GLainas	
DATE	9/15/81	9/17/81	9/17/81	9/15/81	9/21/81	9/22/81	

Mr. Frank Linder

cc
Fritz Schubert, Esquire
Staff Attorney
Dairyland Power Cooperative
2615 East Avenue South
La Crosse, Wisconsin 54601

O. S. Heistand, Jr., Esquire
Morgan, Lewis & Bockius
1800 M Street, N. W.
Washington, D. C. 20036

Mr. R. E. Shimshak
La Crosse Boiling Water Reactor
Dairyland Power Cooperative
P. O. Box 135
Genoa, Wisconsin 54632

Ms. Anne K. Morse
Coulee Region Energy Coalition
P. O. Box 1583
La Crosse, Wisconsin 54601

La Crosse Public Library
800 Main Street
La Crosse, Wisconsin 54601

U. S. Nuclear Regulatory Commission
Resident Inspector's Office
Rural Route #1, Box 276
Genoa, Wisconsin 54632

Town Chairman
Town of Genoa
Route 1
Genoa, Wisconsin 54632

Chairman, Public Service Commission
of Wisconsin
Hill Farms State Office Building
Madison, Wisconsin 53702

Alan S. Rosenthal, Esq., Chairman
Atomic Safety and Licensing Appeal Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. Frederick Milton Olsen, III
609 North 11th Street
LaCrosse, Wisconsin 54601

U. S. Environmental Protection
Agency
Federal Activities Branch
Region V Office
ATTN: EIS COORDINATOR
230 South Dearborn Street
Chicago, Illinois 60604

Mr. John H. Buck
Atomic Safety and Licensing Appeal Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. Lawrence P. Quarles
Kendal at Longwood, Apt. 51
Kenneth Square, Pennsylvania 19348

Charles Bechhoefer, Esq., Chairman
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. George C. Anderson
Department of Oceanography
University of Washington
Seattle, Washington 98195

Mr. Ralph S. Decker
Route 4, Box 190D
Cambridge, Maryland 21613

Thomas S. Moore
Atomic Safety and Licensing Appeal Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

SYSTEMATIC EVALUATION PROGRAM
TOPIC VII-6
LA CROSSE

TOPIC VII-6 FREQUENCY DECAY

I. Introduction

Issue 9 of NUREG-0138 states that the staff should require that a postulated 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 Criteria

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 VII-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 fo. 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.