January 4, 1983

Docket No. 50-409
LS05-83-01-003

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

Dear Mr. Linder:

SUBJECT: SEP TOPICS III-1, CLASSIFICATION OF STRUCTURES, SYSTEMS AND COMPONENTS AND VII-3, SYSTEMS REQUIRED FOR SAFE SHUTDOWN LACROSSE BOILING WATER REACTOR

The staff's revised safety evaluation report (SER) on these topics is enclosed. The SER is based on a contractor's document that was provided by a letter from D. M. Crutchfield (NRC) to F. Linder (DPC), dated November 22, 1982; the resolution of Inspection and Enforcement Bulletin 79-27; and current generic activities in this regard.

The staff has concluded that the present design is an acceptable alternative to current licensing guidelines until Regulatory Guide 1.97, Revision 3 backfit decisions are made. Accordingly, we consider this topic to have been completed acceptably for the LaCrosse Boiling Water Reactor.

This safety evaluation may be revised in the future if your facility design is changed or if NRC criteria relating to these topics are modified before the integrated assessment is completed.

SEO4
DSU USE(38)
ADD:
G. Staley

Sincerely,

Original signed by:
Dennis M. Crutchfield, Chief
Operating Reactors Branch No. 5
Division of Licensing

Enclosure:
As stated

cc w/enclosure:
See next page

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DATE	12/29/82	1/3/83	1/3/83	1/3/83	1/3/83	1/4/83	

Mr. Frank Linder

cc
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SYSTEMATIC EVALUATION PROGRAM

TOPICS III-1 AND VII-3

LACROSSE BOILING WATER REACTOR

TOPIC: III-1, Classification of Structures, Systems and Components
VII-3, Systems Required for Safe Shutdown

I. INTRODUCTION

The systems aspects of the review of Systems Required for Safe Shutdown was conducted as part of Topic V-10.B (RHR Reliability). This safety evaluation is limited to the electrical instrumentation and control systems identified as being required for safe shutdown condition of the plant, including the capability for prompt hot shutdown of the reactor from outside the control room were reviewed. Included also, was a review of the design capability and method of bringing the plant from a high pressure condition to low pressure cooling assuming the use of only safety grade equipment. The objectives of the review were to assure:

A. The design adequacy of the safe shutdown system to (1) initiate automatically the operation of appropriate systems, including the reactivity control systems, such that specified acceptable fuel design limits are not exceeded as a result of anticipated operational occurrences or postulated accidents and (2) initiate the operation of systems and components required to bring the plant to a safe shutdown.

B. That the required systems and equipment, including necessary instrumentation and controls to maintain the unit in a safe condition during hot shutdown, are located at appropriate places outside the control room and have a potential capability for subsequent cold shutdown of the reactor through the use of suitable procedures.

C. That only safety grade equipment is required to bring the reactor coolant system from a high pressure condition to a low pressure cooling condition.

In reviewing the SDCS and systems required for safe shutdown, the major electrical components and systems required for the protection of public health and safety were identified.

REVIEW CRITERIA

The review criteria are presented in Section 2 of EG&G Report EGG-EA-6099, "Electrical, Instrumentation, and Control Features of Systems Required for Safe Shutdown."

III. RELATED SAFETY TOPICS AND INTERFACES

Review areas outside the scope of this topic and safety topics that are dependent on the present topic information for completion are identified in Section 3 of EG&G Report EGG-EA-6099.

IV. REVIEW GUIDELINES

The review guidelines are presented in Section 4 of EG&G Report EGG-EA-6099.

V. EVALUATION

Section 7 of EG&G Report EGG-EA-6099 lists the major electrical components and systems that are required at LaCrosse to protect the public health and safety.

As noted in EG&G Report EGG-EA-6099, the systems required to take LaCrosse from hot shutdown to cold shutdown, assuming only offsite power is available or only onsite power is available and a single failure, are capable of initiation to bring the plant to safe shutdown and are in compliance with current licensing criteria and the safety objectives of SEP Topic VII-3, except that redundant instrumentation is powered from one Class IE source. In addition, there is only one SDCS level control system.

The licensee has developed procedures that have been used for safe shutdown from outside the control room. The staff's contractor has stated that operating experience with the limited operator action outside of the control room justifies this design. However, the staff is concerned about the need to enter the reactor containment after a reactor trip and a major electrical systems failure in order to shutdown the plant.

However, in the staff's review of the response to Inspection and Enforcement Bulletin 79-27, the existing design was found acceptable. Moreover, this entire design aspect may be re-evaluated should implementation of Regulatory Guide 1.97 be considered necessary for operating reactors.

VI. CONCLUSIONS

The LaCrosse Boiling Water Reactor satisfies all of the requirements for Safe Shutdown except for a lack of redundancy in vital indication and control for primary and secondary processes. Therefore, the staff proposes that the design be modified to provide redundant and independent instruments and controls for those process variables that are required to protect the public health and safety in a manner to be determined by the implementation of Regulatory Guide 1.97, Revision 3.