

Docket No. 50-255  
LSo5-81-



Mr. David P. Hoffman  
Nuclear Licensing Administrator  
Consumers Power Company  
1945 W. Parnall Road  
Jackson, Michigan 49201

Dear Mr. Hoffman:

SUBJECT: SEP TOPIC VI-7.F, ACCUMULATOR ISOLATION VALVES POWER AND CONTROL SYSTEM DESIGN, SAFETY EVALUATION FOR PALISADES

The enclosed staff safety evaluation has been revised to reflect the staff's current position with regard to a change in the Technical Specifications for Palisades.

As a result of our new position, the staff considers Topic VI-7.F to be completely satisfactory.

Sincerely,

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	10/23/81	10/26/81	10/26/81	10/26/81	10/29/81	10/27/81

Mr. David P. Hoffman

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SYSTEMATIC EVALUATION PROGRAM

TOPIC VI-7.F

PALISADES

TOPIC: VI-7.F. ACCUMULATOR ISOLATION VALVES POWER AND CONTROL SYSTEM DESIGN

I. Introduction

For many loss-of-coolant accidents, the performance of the ECCS in PWR plants depends upon the proper functioning of the accumulators. The motor-operated isolation valve, provided between the accumulator and the primary system, must be considered to be an "operating bypass" (IEEE 279-1971) because, when closed, it prevents the accumulator from performing the intended protective function. Accordingly, the motor-operated isolation valve should be designed against a single failure that can result in a loss of capability to perform a safety function.

An additional operational requirement for these valves is that they be closed to permit primary system depressurization during reactor shutdown. (See the staff's discussions of Topics V-3 and VII-3).

II. Review Criteria

The review criteria are presented in Section 2 of EG&G Report 1302F.

III. Related Safety Topics and Interfaces

There are no review areas outside the scope of this topic and there are no other safety topics that are dependent on the present topic information for completion.

IV. Review Guidelines

The objective of this SEP Topic is to assure that the accumulator isolation valves: (1) Meet the "operating bypass" requirements of IEEE 279-1971 which states that the bypass of a protective function will be removed automatically whenever permissive conditions are not met to assure that a single failure in the electrical system or single operator error cannot result in the loss of capability of an accumulator to perform its safety function, and (2) Assure that the valves are operable for safe shutdown of the plant.

V. Evaluation

As noted in EG&G Report 1302F, The Palisades accumulator isolation valve power and control system design meets the requirement of ICSB 18, Part 2, with the exception that plant Technical Specifications do not list the isolation valves by number. Report 13 02 F also indicates that the plant

design cannot accommodate the loss of a single accumulator during a large LOCA and, as a consequence, the Technical Specifications allow only one SI Tank to be out of service for no more than one hour during power operation. This situation is a direct consequence of the accident analyses assumption that all of the contents of one SI tank is lost out of the break without following through the core.

The report also notes that the valve breakers are located inside of containment, only a single valve position system is provided, and that the motor control center (MCC9) is not qualified for an accident environment. Additional review by I&E has shown that MCC9 is not powered from an onsite source.

## VI. Conclusions

The staff recommends that the Technical Specifications be modified to include designation of the subject valves by number in some future change to the Technical Specifications. This change is not considered to be of such significance as to require a Technical Specification change in and of itself.

The Palisades accumulator isolation valve power and control system design does not meet current licensing criteria, in that control room valve position indication is neither redundant nor single-failure free. However, the Palisades design is acceptable to the staff, because the single valve position indicator combined with the administrative procedures for removing power from the valve and the verification of valve position meets the intent of redundant valve position indicators.

The use of a non-Class 1E valve motor power circuits is acceptable because procedures for remote venting of the accumulators from outside of the containment during plant cooldown are available.