

August 20, 1981

Docket No. 50-29  
LS05-81-041

Mr. James A. Kay  
Senior Engineer - Licensing  
Yankee Atomic Electric Company  
1671 Worcester Street  
Framingham, Massachusetts 01701

Dear Mr. Kay:

By letter dated January 2, 1981, the staff requested additional information relative to the compliance of Yankee Rowe with Item II.D.3-1 of NUREG-0737 regarding the one-inch relief valves on each of the four reactor coolant loops at Yankee Rowe. You provided this information by letter dated January 23, 1981.

The staff has completed its review of your response and has concluded that no additional flow indication is necessary for these valves. A copy of the related Safety Evaluation is attached.

Sincerely,

Original signed by  
Dennis M. Crutchfield

Dennis M. Crutchfield, Chief  
Operating Reactors Branch #5  
Division of Licensing

Enclosure:  
Safety Evaluation

cc w/enclosure:  
See next page

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Mr. James A. Kay

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August 20, 1981

cc w/enclosure:  
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## SAFETY EVALUATION REPORT

### YANKEE ROWE

### LOOP RELIEF VALVES

#### DISCUSSION

Yankee Rowe is a four loop pressurized water reactor with loop isolation valves. Each loop has a one-inch relief valve to provide loop overpressure protection while the loop is isolated (when the loop isolation valves are shut) from the reactor. The loop relief valves have a setpoint of 2735 psig and they discharge directly into the vapor container. The condensate from such discharges is ultimately collected by the vapor container drain tank, outside the vapor container. NUREG-0737, Item II.D.3-1 states that reactor coolant system relief and safety valves shall be provided with a positive indication in the control room derived from a reliable valve-position detection device or a reliable indication of flow in the discharge pipe. The positive indication in the control room can be sensed from the valve itself, the discharge line from the valve or from the tank into which it discharges. The basic requirement is to provide the operator with unambiguous indication of valve position (open or closed) so that appropriate operator actions can be taken. An alarm should be provided in conjunction with this indication.

#### EVALUATION

The operation of a loop relief valve, whether spurious or intentional, would cause the primary system to act the same as it would during a small size break of 90 gpm in the reactor coolant system. Failure to reclose the valve would result in a continuing leak. However, the charging system would be capable of maintaining RCS inventory during the event. Opening the loop relief valve would not result in misleading information to the operator (increased level and decreased pressure) as could be the case resulting from the lifting of a valve on the pressurizer. The loop relief valves are not required by the ASME Code, and their setpoint is 735 psi above the normal operating pressure, so that there is a low probability of actuation. The vapor container drain tank, which ultimately receives the discharge from the loop relief valves, has level indication.

#### CONCLUSION

We conclude that monitoring of the loop relief valves is not necessary because (1) the make up capability of the charging system is greater than the relief capacity, (2) the small break size is within the scope of the acceptable procedures which would be used regardless of whether the operator knows the location of the break, (3) the indication provided (pressurizer level) to the operator is non-confusing information and will not be misleading if this valve opened, and (4) the low probability of actuation based on the high setpoint of 2735 psig, 735 psi above the operating system pressure.

Date: August 20, 1981