

ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2
MAKEUP AND PURIFICATION LETDOWN COOLER SUPPORTS

NCR NEB 80-4
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

There are two letdown coolers in the makeup and purification system. Both are in service under normal operation. Reactor coolant letdown is cooled by these coolers before leaving the containment. While designing the support platforms for the Washington Public Power coolers, the architect engineer expressed a concern about the adequacy of these supports. This concern was examined by B&W, Atlas, and Dynatech (who performs stress analysis for Atlas), and it was agreed by all parties that the combination of the A-E's support platform and the cooler's support bracket would result in an overstressed condition in the lowest of the three cooler supports.

There are three support brackets on each cooler, each of which is attached to a corresponding support platform provided by TVA. When the coolers are installed, two bracket-platform combinations require sliding supports to allow for thermal expansion and the axial load is therefore restrained entirely by the third support. The support platform does not fully contact the cooler support, thereby making the cooler support bracket a cantilevered beam required to sustain moments in excess of the cooler support design.

Safety Implications

The safety implication of this defect is that the coolers could be dislodged from their supports because of the loads imposed from the letdown piping with the potential for rupturing the letdown piping and releasing reactor coolant.

Corrective Action

Corrective action consists of TVA redesigning the support stand for the lowest cooler bracket. The new design eliminates the moment by providing support for the lower bracket that extends further under the bracket and therefore provides full horizontal bearing. The only revision needed to the cooler bracket is the drilling of three additional bolt holes for attachment to the larger support stand. B&W is to supply a field change package for modification of the support and support bracket by

April 21, 1980. TVA expects to complete this corrective action by September 30, 1980.

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