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ACCESSION NBR: 9212290221      DOC. DATE: 92/12/18      NOTARIZED: NO      DOCKET #  
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       50-439 Bellefonte Nuclear Plant, Unit 2, Tennessee Valley Au      05000439  
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SUBJECT: Interim deficiency rept re potential failure to meet min  
           recirculation flow for DHR sys pumps. Current min flow  
           requirement of 125 gpm based on pump vendor (Sulzer Bingham)  
           tests. Final evaluation expected to be completed by 930601.

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Gentlemen:

In the Matter of the Application of )  
Tennessee Valley Authority )

Docket Nos. 50-438  
50-439

**BELLEFONTE NUCLEAR PLANT (BLN) - POTENTIAL FAILURE TO MEET  
MINIMUM RECIRCULATION FLOW FOR THE DECAY HEAT REMOVAL PUMPS  
- PROBLEM EVALUATION REPORT BLPER920070 - INTERIM REPORT**

In accordance with 10 CFR 50.55(e)(1)(ii), this interim report is being provided to notify the NRC of a condition involving the potential for failure to meet minimum recirculation flow requirements for the Decay Heat Removal (DHR) system pumps.

During the design review of the DHR system, it was determined that the "as-built" configuration of the recirculation lines for the DHR pumps does not adequately allow for the design specification (based on vendor test results) of a 125 gpm minimum flow through the pump at approximate dead-head conditions. The recirculation line function is to provide a required minimum flow through the pump to prevent overheating and pump damage during operation at a dead-head condition. In the investigation of the problem it was also discovered that no calculation existed for this configuration. Calculation ME-6ND-00046, DHR Pump Minimum Recirculation Flowrate, was performed to determine the actual flow rate for the "as-built" recirculation line configuration. The calculation confirmed the line would only allow approximately 81 gpm at a dead-head condition.

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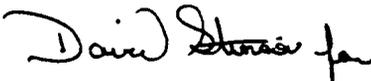
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The primary safety function of the DHR system is to supply low pressure injection to the reactor vessel following a loss-of-coolant accident (LOCA). The amount of time the pump would operate in a low flow condition would vary based on the size of the LOCA. The recirculation line for a pump should be designed to allow the required pump minimum flow to pass through the pump to prevent overheating and pump damage for extended operation. A flow rate below the allowable pump minimum flow could cause pump overheating and damage. The time it takes for this to occur will vary based on the reduced flow rate, temperature of the water, and net positive suction head available. Pump damage would cause a reduction in design flow and possible failure to perform the system design function.

The current minimum flow requirement of 125 gpm is based on the pump vendor's, Sulzer Bingham, tests and may not be an actual minimum flow-rate requirement. Contact has been made with Sulzer Bingham which will determine the actual minimum flow requirement of the pump.

The final evaluation of this deficiency is expected to be completed by June 1, 1993 after the final response from the pump vendor is received on this issue. Appropriate NRC notifications required by 10 CFR 50.55(e) will be made at that time, if necessary.

Should there be any questions regarding this information, please call Bruce Schofield, BLN Site Licensing Manager, at (205) 574-8058.



H. Fred McCluskey

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