



**Duquesne Light**

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April 19, 1982

United States Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Attn: R. C. Haynes, Regional Administrator  
Region I  
631 Park Avenue  
King of Prussia, Pennsylvania 19406

Reference: Beaver Valley Power Station, Unit No. 1  
Docket No. 50-334, License No. DPR-66  
RCS Unidentified Leakage Detection Limits [Technical  
Specification 3.4.6.1]

Gentlemen:

During a recent inspection by Region I Inspection and Enforcement personnel at our facility, documented in Inspection Report 82-02, we were requested to revise our leak rate test procedure and correct the unidentified leak rate mass to a temperature corresponding to the nominal cold leg value to comply with the technical specification limit of 1 GPM.

In conference between J. W. Chung of your staff and K. D. Grada of Duquesne Light, an NRC position was quoted which requires that this mass conversion be based on the cold leg density. The basis for this requirement has apparently been extracted from an internal Region II memorandum dated August 14, 1980 from Messers D. C. Kirkpatrick, R. W. Woodruff to E. L. Jordan.

Our procedure currently requires that the mass conversion be corrected for 120F versus operating temperatures. We have taken this approach for the following reasons:

1. Typically, engineering expressions which give a "GPM" equivalent are based on standard temperature and pressure conditions. We believe our 120F density correction is conservative in this respect since this is the nominal temperature of water within the bulk of the charging system and well above our allowable limit for containment temperatures.
2. If we corrected the unidentified leakage mass to operating conditions and the leak was actually within the lower temperature charging system, the allowable limit would be reduced by approximately 37% due to the density correction such that a shutdown would be required at a .63 gpm unidentified leak rate versus the nominal 1 gpm. While we recognize that this correction factor will give

an "apparent" increased limit in the allowable 1 gpm leak rate (if the elevated density correction factor is utilized), it is our position that the technical specification's 1 gpm limit on unidentified leak rate was based on S.T.P conditions to provide for a "detectable mass loss" within the constraints of detection systems' sensitivity and the operator's ability to measure the relative change in inventory and flow rates. We currently require identification of leakage within the containment, if the containment sump flow increases by 50%, or, if the steady state sump flow exceeds 2 gpm.

3. The technical specification basis for the 1 gpm reactor coolant leak rate limit was drawn from Regulatory Guide 1.45 "Reactor Coolant Boundary Leakage Detection System" dated May 1973. The paragraph which describes "Detector Sensitivity" infers that the limits are based on STP conditions since "monitoring changes in sump water level, flow rate or pump operating frequency" for ".5-1 gpm changes" suggests atmospheric conditions. Inaccuracies at this magnitude are implied as being acceptable in paragraph "C", "Regulatory Position" whereby "Leakage to the Primary Reactor Containment from unidentified sources should be collected and flow rate monitored with an accuracy of 1 gpm or better."
4. There is no substantial technical basis to justify the utilization of the elevated temperature density correction factor since the maximum error introduced would only provide for a +.37 gpm error above the 1 gpm limit, if all unidentified leakage was from the high temperature system. We have reviewed test data prepared by different utilities and found our density correction factor to be conservative.

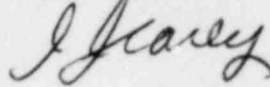
We do not believe that a significant basis exists to justify a revision to the existing procedure since the selected value of 1 gpm has no basis in the safety analysis.

5. The FSAR, Section 4.2.7 clearly identifies the sensitivity of the BVPS Leakage Detection System and addresses this deviation from Regulatory Guide 1.45. WCAP 7503, Revision 1, "Determination of Design Pipe Breaks for Westinghouse Reactor Coolant Systems" clearly shows that our limit is less than that required for purposes of detecting critical through-wall cracks.

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We believe that our existing procedure is adequately conservative  
to meet the intent of the Technical Specifications.

Very truly yours,



J. J. Carey  
Vice President, Nuclear

cc: Mr. D. A. Beckman, Resident Inspector  
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