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June 26, 1981

BECo. Ltr. #81-137

Mr. Thomas A. Ippolito, Chief
Operating Reactors Branch #2
Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

License No. DPR-35
Docket No. 50-293

Response to Request for Additional Information
Pilgrim Nuclear Power Station Unit 1
Containment Purge Valve Mechanical Operability

Dear Sir:

This document supplies the additional information requested by telephone on April 4, 1981, pursuant to "Containment Vent and Purge Mechanical Operability" (BECo. Ltr. #81-46, March 4, 1981).

1. Provide the basis for the determination that the 5 Diameter (5D) separation, as indicated in your report, results in insignificant effects on the dynamic torque developed.

   Response

   Assuming the valve to be in its most unfavorable orientation in relation to the elbow, calculations indicate approximately a 12% increase in dynamic torque when the valve is 5 diameters downstream from it. The valve in question is 45^{0} to the plane of the elbow. Therefore, our estimate indicates an insignificant torque increase of approximately 6%.

2. Provide justification for the determination that the coefficients developed by other manufacturers for their disc designs apply to the Rockwell valve discs used in the Pilgrim Unit 1 Nuclear Plant.

   Response

   The Rockwell disc is symmetrical about the shaft, as is the Fisher 7600 valve.

   The McNally disc is offset, but the highest coefficient (i.e. seal downstream) was used.

   The Dover-Norris disc is symmetrical about the shaft, but the plane of the disc is approximately 16^{0} to the shaft. This angle should reduce torque a small amount, approximately 4%.

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In the comparison of valves, dynamic torque coefficients were conservatively selected.

3. Do the torques developed by the valve during closure exceed the design rating of the operator at any position in the stroke cycle?

Response

Calculations indicate a maximum dynamic torque on the disc to be less than 5000 inch-pounds. The torque capacity of the operator mechanism is approximately 20,000 inch-pounds. Therefore, torques developed during closure do not exceed the design rating of the operator.

If, after reviewing the above responses, you should require any additional information, please contact us.

Very truly yours,