

Duquesne Light Company

Beaver Valley Power Station
P.O. Box 4
Shippingport, PA 15077-0004

JOHN D. SIEBER
Senior Vice President and
Chief Nuclear Officer
Nuclear Power Division

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(412) 393-5255
Fax (412) 643-8069

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Subject: Beaver Valley Power Station, Unit No. 1 and No. 2
BV-1 Docket No. 50-334, License No. DPR-66
BV-2 Docket No. 50-412, License No. NPF-73
Potential 10 CFR 21 Condition, Limatorque Corporation
Reliance 3-Phase L. C. Actuator Motors, 60-Day Interim
Report

Limatorque Corporation has notified the NRC of a potential 10 CFR 21 condition concerning decreases in motor operated valve (MOV) motor starting torques resulting from increasing motor temperature. It has been determined that the notice applies to both Beaver Valley Units 1 and 2.

Our preliminary review of the Part 21 concern was limited to those valves associated with Generic Letter 89-10, and revealed 67 valves at Unit 1 and 151 valves and dampers at Unit 2 subject to the Limatorque notice.

Recent information has been acquired relative to the subject notice which we believe minimizes the safety significance associated with the notice.

At the MOV Users Group (MUG) meeting in San Francisco, both the NRC (on 7-13-93) and Limatorque (on 7-14-93) agreed that the motor performance degradation begins at 40°C and not 25°C as suggested by the notice. This fact significantly reduces the impact of the calculated reduced torque which would be predicted.

In addition, Limatorque stated that they recognized that motor internal temperature rises would be time-dependent when caused by environmental effects. As such, they are instituting a series of tests in an environmental chamber that should result in predicting a temperature time constant in both dry and simulated steam heated scenarios. Since many valves are called upon to operate early in an accident, these time constants will significantly reduce the temperature used to determine the extent of motor performance degradation.

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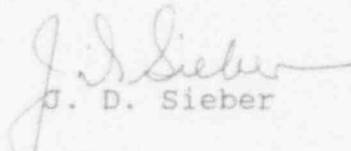
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Limitorque also reported that it is in the process of revising its recommended torque degradation calculation at degraded voltage to eliminate excessive conservatism. In present practice, the motors are assumed to operate at full torque between 90% and 100% of rated voltage with performance degrading as a square function below 90%. This means that at 89% of rated voltage, existing calculational practice would rate the available torque to be $(0.89)^2$ or 79% of the torque available at 90%. The true performance of the motor is baselined at 90% with performance degrading or improving from this point depending on available voltage. This revised procedure is expected to be issued within a month and would predict 98% of rated torque at 89% of rated voltage instead of the previous 79%. The net effect is that throughout the voltage band, the improvement in predicted torque available is about 23% over previous calculations. This should more than offset the anticipated degradation due to temperature effects.

The Beaver Valley Nuclear Engineering Department (NED) is presently developing a methodology to determine the effects on MOVs of motor temperature and the number of valve strokes prior to performing a safety related function. This methodology will then be used to recalculate the motor operator's capability. The revised capability will then be compared against the required torque. NED's goal is to assess the impact on each MOV and, with adequate support from the manufacturer, expects to be able to complete the evaluation by December 31, 1993.

Should you have any questions associated with this subject, please call J. V. Vassello, Director, Licensing, (412) 393-5203.

Sincerely,


J. D. Sieber

cc: Mr. L. W. Rossbach, Sr. Resident Inspector
Mr. T. T. Martin, NRC Region I Administrator
Mr. G. E. Edison, Project Manager
Mr. M. L. Bowling (VEPCO)