

JUL 15 1981

Docket No. 50-334

Mr. J. J. Carey, Vice President  
Nuclear Division  
Duquesne Light Company  
Post Office Box 4  
Shippingport, Pennsylvania 15077

Dear Mr. Carey:

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Our letter dated April 29, 1981 informed you that the containment purge and vent requirements for Beaver Valley Power Station, Unit No. 1 had been satisfied with the possible exception of changes to Technical Specifications (TS) that might be determined to be necessary as a result of the continuing long-term review by the staff.

The staff has completed their review and concluded that the purge and vent system design and operating practices for Beaver Valley Power Station, Unit 1 are acceptable. However, as a result of the numerous reports on unsatisfactory performance of the resilient seats for butterfly-type isolation valves in containment purge and vent lines, periodic leakage integrity tests of the above 42-inch and 8-inch butterfly isolation valves have been found necessary. We, therefore, require that the licensee propose a technical specification for testing these valves in accordance with the following recommended testing frequency:

"The leakage integrity tests of the isolation valves in the containment purge lines and the steam jet air ejector system lines shall be conducted at intervals not to exceed 6 months."

The purpose of the leakage integrity tests of the isolation valves in the containment purge lines and the steam jet air ejector system lines is to identify excessive degradation of the resilient seats for these valves. Therefore, they need not be conducted with the precision required for the Type C isolation valve tests in 10 CFR Part 50, Appendix J. These tests would be performed in addition to the quantitative Type C tests required by Appendix J and would not relieve the licensee of the responsibility to conform to the requirements of Appendix J. Further clarification of these requirements is given in Enclosure (1).

These changes to your TS, in conjunction with previous actions taken at your facility, will satisfy the staff concerns, with the exception of Positions 5, 6, and 7 of NUREG-0737 Item II.E.4.2, regarding containment purge and vent at Beaver Valley Power Station, Unit No. 1. We request that you propose a TS change incorporating the test requirements together

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Mr. J. J. Carey

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with the details of your proposed test program within 45 days of receipt of this letter.

A copy of our Safety Evaluation Report is enclosed for your information.

If you have any questions or concerns, please feel free to contact us.

Sincerely,

Original signed by:

S. A. Varga

Steven A. Varga, Chief  
Operating Reactors Branch #1  
Division of Licensing

Enclosures:

1. Purge/Vent Valve Leakage Tests
2. Safety Evaluation Report

cc: w/enclosures  
See next page

\*Previous concurrence see next page

OFFICE	ORB#1:DL*	ORB#1:DL*	ORB#1:DL			
SURNAME	DChaney:ds	EReeves	SVarga			
DATE	7/ /81	7/ /81	7/ /81			

Mr. J. J. Carey  
Duquesne Light Company

cc: Mr. R. J. Washabaugh, QA Manager  
Duquesne Light Company  
Quality Assurance Department  
Post Office Box 4  
Shippingport, Pennsylvania 15077

Mr. J. A. Werling  
Station Superintendent  
Duquesne Light Company  
Beaver Valley Power Station  
Post Office Box 4  
Shippingport, Pennsylvania 15077

Mr. T. D. Jones, Manager  
Nuclear Operations  
Duquesne Light Company  
Post Office Box 4  
Shippingport, Pennsylvania 15077

Mr. F. J. Bissert, Manager  
Nuclear Support Services  
Duquesne Light Company  
Nuclear Division  
Post Office Box 4  
Shippingport, Pennsylvania 15077

Mr. R. M. Mafrice, Nuclear Engineer  
Duquesne Light Company  
435 Sixth Avenue  
Pittsburgh, Pennsylvania 15219

Mr. R. E. Martin, Nuclear Engineer  
Duquesne Light Company  
435 Sixth Avenue  
Pittsburgh, Pennsylvania 15219

Mr. N. R. Tonet, Manager  
Nuclear Engineering  
Duquesne Light Company  
Nuclear Division  
Post Office Box 4  
Shippingport, Pennsylvania 15077

Mr. J. D. Sieber, Manager  
Nuclear Safety & Licensing  
Duquesne Light Company  
Nuclear Division  
Post Office Box 4  
Shippingport, Pennsylvania 15077

Gerald Charnoff, Esquire  
Jay E. Silberg, Esquire  
Shaw, Pittman, Potts and Trowbridge  
1800 M Street, N. W.  
Washington, D. C. 20036

Karin Carter, Esquire  
Special Assistant Attorney General  
Bureau of Administrative Enforcement  
5th Floor, Executive House  
Harrisburg, Pennsylvania 17120

Mr. Roger Tappan  
Stone & Webster Engineering Corporation  
P. O. Box 2325  
Boston, Massachusetts 02107

Mr. F. Noon  
R & D Center  
Westinghouse Electric Corporation  
Building 7-303  
Pittsburgh, Pennsylvania 15230

Marvin Fein  
Utility Counsel  
City of Pittsburgh  
313 City-County Building  
Pittsburgh, Pennsylvania 15219

Mr. John A. Levin  
Public Utility Commission  
P. O. Box 3265  
Harrisburg, Pennsylvania 17120

Irwin A. Popowsky, Esquire  
Office of Consumer Advocate  
1425 Strawberry Square  
Harrisburg, Pennsylvania 17120

Charles E. Thomas, Esquire  
Thomas and Thomas  
212 Locust Street  
Box 999  
Harrisburg, Pennsylvania 17108

Resident Inspector  
U. S. Nuclear Regulatory Commission  
Post Office Box 298  
Shippingport, Pennsylvania 15077

PURGE/VENT VALVE LEAKAGE TESTS

The long term resolution of Generic Issue B-24, "Containment Purging During Normal Plant Operation," includes, in part, the implementation of Item B.4 of Branch Technical Position (BTP) CSB 6-4. Item B.4 specifies that provisions should be made for leakage rate testing of the (purge/vent system) isolation valves, individually, during reactor operation. Although Item B.4 does not address the testing frequency, Appendix J to 10 CFR Part 50 specifies a maximum test interval of 2 years.

As a result of the numerous reports on unsatisfactory performance of the resilient seats for the isolation valves in containment purge and vent lines (addressed in OIE Circular 77-11, dated September 6, 1977), Generic Issue B-20, "Containment Leakage Due to Seal Deterioration," was established to evaluate the matter and establish an appropriate testing frequency for the isolation valves. Excessive leakage past the resilient seats of isolation valves in purge/vent lines is typically caused by severe environmental conditions and/or wear due to frequent use. Consequently, the leakage test frequency for these valves should be keyed to the occurrence of severe environmental conditions and the use of the valves, rather than the current requirements of 10 CFR 50, Appendix J.

It is recommended that the following provision be added to the Technical Specifications for the leak testing of purge/vent line isolation valves:

"Leakage integrity tests shall be performed on the containment isolation valves with resilient material seals in (a) active purge/vent systems (i.e., those which may be operated during plant operating Modes 1 through 4) at least once every three months and (b) passive purge systems (i.e., those which must be administratively controlled closed during reactor operating Modes 1 through 4) at least once every six months."

By way of clarification, the above proposed surveillance specification is predicated on our expectation that a plant would have a need to go to cold shutdown several times a year. To cover the possibility that this may not occur, a maximum test interval of 6 months is specified. However, it is not our intent to require a plant to shutdown just to conduct the valve leakage integrity tests. If licensees anticipate long duration power operations with infrequent shutdown, then installation of a leak test connection that is accessible from outside containment may be appropriate. This will permit simultaneous testing of the redundant valves. It will not be possible to satisfy explicitly the guidance of Item B.4 of BTP CSB 6-4 (which states that valves should be tested individually), but at least some testing of the valves during reactor operation will be possible.

It is intended that the above proposed surveillance specification be applied to the active purge/vent lines, as well as passive purge lines: i.e., the purge lines that are administratively controlled closed during reactor operating modes 1-4. The reason for including the passive purge lines is that B-20 is concerned with the potential adverse effect of seasonal weather conditions on the integrity of the isolation valves. Consequently, passive purge lines must also be included in the surveillance program.

The purpose of the leakage integrity tests of the isolation valves in the containment purge and vent lines is to identify excessive degradation of the resilient seats for these valves. Therefore, they need not be conducted with the precision required for the Type C isolation valve tests in 10 CFR Part 50, Appendix J. These tests would be performed in addition to the quantitative Type C tests required by Appendix J and would not relieve the licensee of the responsibility to conform to the requirements of Appendix J. In view of the wide variety of valve types and seating materials, the acceptance criteria for such tests should be developed on a plant-specific basis.