



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
230 PEACHTREE STREET, N. W. SUITE 1217  
ATLANTA, GEORGIA 30303

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Enclosure 2

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MEMORANDUM FOR: E. L. Jordan, Assistant Director for Technical Programs,  
Division of Reactor Operations, IE:HQ

THRU: *WJ* J. Long, Chief, Reactor Operations and Nuclear Support  
Branch, Region II

FROM: H. C. Dance, Chief, Reactor Projects Section No. 1,  
RONS Branch, Region II

SUBJECT: EXCESSIVE LEAKAGE OF CONTAINMENT PURGE VALVES  
(AITS F24091H2)

Recent inspection findings at the H. B. Robinson 2 facility indicate that the current surveillance requirements for containment purge valves at all facilities may not be adequate.

The 1977 annual report for the H. B. Robinson 2 facility indicated a high frequency of adjustments to the containment purge valves to correct excessive leakage. A discussion with the licensee concerning the apparent problem with proper sealing of containment purge valves revealed the following information:

1. During a one year period, from June 1977, there were 15 documented work packages for maintenance adjustments of containment purge valve seals.
2. The licensee estimated that the excessive leakage condition occurred at a frequency of one time for every five valve cycles. (i.e., open and shut equals one cycle)
3. The licensee assessment of the leakage problem resulted in the conclusion that there are no permanent corrective measures available to reduce the frequency of excessive leakage. This conclusion is based on the fact that these valves are 42 inch butterfly type with resilient seals and a closure time of 2 seconds. Therefore, with a very low leakage limit, periodic "excessive leakage" is inherent with this type of valve.
4. Once properly sealed, purge valves maintain proper sealing while they remain closed. The excessive leakage occurs when valves do not seal properly following valve closure.

CONTACT: T. J. McHenry  
242-5565

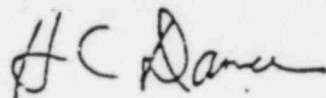
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5. The H. B. Robinson 2 facility has a Penetration Pressurization System which automatically pressurizes the inner space between the inner and outer purge valves. Therefore valve leakage is detected shortly after closure such that adjustments can be made by maintenance personnel to restore the leakage within the allowance by Technical Specifications.
6. Many facilities built after H. B. Robinson 2 do not have a Penetration Pressurization System. Therefore excessive leakage of containment purge valves can only be detected by the local leak rate testing performed at refueling intervals.
7. The H. B. Robinson purge valves are supplied by Allis-Chalmers Mfg. Company, Model 50 FR Stream Seal Valve.

Based upon the above information, periodic excessive leakage of containment purge valves caused by valve cycling may be an inherent problem at any facility with a similar type of valve. In addition, the assumption that excessive leakage through containment purge valves will not occur between refueling interval testing does not appear valid.

The above information indicates that the leak testing required by the Technical Specifications may not be adequate for facilities without a Penetration Pressurization System. Therefore an evaluation should be made to determine if the present frequency of leak rate testing containment purge valves is adequate to assure containment integrity.



H. C. Dance, Chief  
Reactor Projects Section  
No. 1

cc: R. D. Martin  
P. J. Kellogg  
R. C. Lewis  
D. Neighbors, DDPM:HQ