

WOLF CREEK

NUCLEAR OPERATING CORPORATION

Neil S. "Buzz" Carns
Chairman, President and
Chief Executive Officer

May 19, 1995

WM 95-0087

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-137
Washington, D. C. 20555

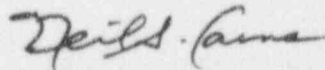
Reference: Inspection Report 50-482/95-04, dated March 22, 1995,
from T. P. Gwynn, NRC, to N. S. Carns, WCNO
Subject: Docket No. 50-482: Reply to Request for Additional
Information Associated with the Completion of
Commitments to Generic Letter 89-10, "Safety-Related
Motor-Operated Valve Testing and Surveillance"

Gentlemen:

The attachment to this letter provides Wolf Creek Nuclear Operating Corporation's reply to a request for additional information and justification for the periodic verification of motor-operated valves and for the differential pressure testing of butterfly valves. This request was documented in the reference.

If you have any questions concerning this matter, please contact me at (316) 364-8831, extension 4100, or Mr. Richard D. Flannigan at extension 4500.

Very truly yours,



Neil S. Carns

NSC/jra

Attachment

cc: L. J. Callan (NRC), w/a
D. F. Kirsch (NRC), w/a
J. F. Ringwald (NRC), w/a
J. C. Stone (NRC), w/a

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Additional Information and Justification for
Periodic Testing of Motor-Operated Valves and
Differential Pressure Testing of Butterfly Valves

Introduction

During the week of February 13-17, 1995, an inspection was conducted to verify the closure of commitments associated with Generic Letter 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance." In addition to inspection findings, Inspection Report 50-482/95-04 documented a request for additional information and justification for periodic verification of motor-operated valves (MOVs) and differential pressure testing of butterfly valves. The paragraphs and table below provide the information requested.

Periodic Testing of Motor-Operated Valves

Initially, as a method of periodic verification, Wolf Creek Nuclear Operating Corporation (WCNOC) developed a program in which all MOVs would receive static diagnostic testing within the recommended frequency of Generic Letter 89-10. During Inspection 95-04, in response to an NRC concern, WCNOC proposed an alternative approach to periodic testing. Motor-operated valves that had been previously dynamically tested would be periodically dynamically tested if a thrust margin of at least 25 percent could not be maintained. This direction was consistent with the approach taken by the Callaway Plant. WCNOC has since decided to change this direction to go beyond this approach. With almost all current margins exceeding 25 percent, near-term periodic testing would narrow the scope of valve families tested. The approach described below will broaden the scope of valve families tested and aid in determining aging effects on MOVs not only for WCNOC, but also for the rest of the industry.

Rather than relying strictly on having sufficient margins, WCNOC has chosen to sample a select number of valves every five years to generally verify that theoretical coefficients remain conservative. Of the 41 valves that were initially dynamically tested, WCNOC intends to test three gate and two globe MOVs. This number was selected to provide a fair assessment of degradation among the range in size and types of valves previously tested. The MOVs were selected based on a combination of high risk significance (a Probabilistic Risk Assessment approach as described in Generic Letter 89-10, Supplement 6) and low current margin for the overall population. The periodicity and scope of future testing will be based on the test results of this population of five valves. However, as a minimum, a representative sample of valves will be dynamically tested every five years. A table of the affected valves, including a schedule and method for determining valves to be tested, has been included on page 3.

Differential Pressure Testing of Butterfly Valves

The decision to not perform differential pressure testing of butterfly valves was identified as a weakness in the WCNOG Motor-Operated Valve Program. WCNOG proposes to test a sample of butterfly valves at Wolf Creek Generating Station to validate that the margin approach methodology used conservatively bounds the actual performance. WCNOG maintains that current margins are sufficient based on testing at the Callaway Plant of identical valves in identical applications with similar time in service and maintenance history. The selection of butterfly valves to be tested was based on selecting at least one sample valve for each of the three safety-related vendor designs installed in the plant. A representative valve per manufacturer population is considered critical to validate the assumptions in seating/unseating and bearing torque coefficients between different vendor designs. For the general application of test results, slight variations in size (less than 6" for large butterfly valves) are considered insignificant for identical design valves; therefore, not all butterfly valve sizes will be tested. This sample of butterfly valves will also be included in the periodic dynamic testing program as discussed above. The table on the following page includes the butterfly valves to be tested.

General Information

Differential pressure testing will continue to be done when maintenance performed on an MOV may affect the thrust required to close or open it against design differential pressure, unless an engineering evaluation shows that it is not required. Differential pressure testing must be re-performed or an engineering evaluation made when a design change affects the previous test results.

In addition to the results obtained from in-plant periodic testing, WCNOG continues to remain cognizant of other industry issues and testing through the Nuclear Network, MOV User Group, and correspondence with other utilities.

Valve Table

Manufacturer (population)	Size/ Total Number	Number previous tested	Test sample number	Suggested test valve ID	Next periodic test
GATE VALVES					
Westinghouse (42 total)	3" / 6	4	-----	Note 1	
	4" / 13	5	1	EMHV8801A	October 1997
	6" / 4	2	1	EMHV8807B	October 1997
	8" / 6	2	-----	Note 1	
	10" / 5	5	-----	Note 1	
	12" / 4	4	1	EJHV8701A	October 1997
	14" / 4	3	-----	Note 1	
Anchor/Darling (22 total)	3" / 2	0	-----	Note 2	
	6" / 3	0	-----	Note 2	
	8" / 2	0	-----	Note 2	
	10" / 3	2	-----	Note 2	
	12" / 12	0	-----	Note 2	
Velan (15 total)	3" / 10	0	-----	Note 3	
	4" / 5	0	-----	Note 3	
GLOBE VALVES					
Velar (12 total)	1.5" / 2	2	-----	Note 1	
	2" / 10	5	1	BGHV8111	October 1997
Masoneilan	4" / 4	4	1	ALHV0007	October 1997
Gimble	4" / 1	1	-----	(Not meaningful to test/spring closed)	
Yarway (8 total)	1.5" / 4	0	-----	Note 2	
	2" / 4	0	-----	Note 2	
Anchor/Darling	1" / 4	2	-----	Note 2	
BUTTERFLY VALVES					
C & S (4 total)	6" / 2	0	-----	Note 1	
	8" / 2	0	1	one of ALHV32,33 family	Note 4
Jamesbury (18 total)	14" / 8	0	1	one of EFHV31-34 family	Note 4
	30" / 10	0	1	one of EFHV38-42 family	Note 4
Fisher (12 total)	12" / 2	0	1	one of ECHV11,12 family	Note 4
	18" / 6	0	-----	Note 1	
	24" / 4	0	1	one of EFHV51-60 family	Note 4
Original Test Population = 41					
Total Periodic Test Sample			= 10		

NOTE 1: Periodic dynamic test data and trends from similar valves of a slightly different size will be applied to these valves.

NOTE 2: Valves in this group have been justified using the high-margin approach and/or have substantial margin.

NOTE 3: Valves in this group are not practicable to dynamically test and have been justified using other plant or industry data.

NOTE 4: Test will be completed prior to completion of the eighth refueling outage.