your energy partner
OPPD
Omaha Public Power District

444 South 16th Street Mall
Omaha NE 68102-2247

August 8, 2003
LIC-03-0097

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

References:
1. Docket No. 50-285
2. Letter from OPPD (W. G. Gates) to NRC (Document Control Desk), Response to Generic Letter 96-05, dated November 15, 1996 (LIC-96-0172)
3. Letter from NRC (L. Raynard Wharton) to OPPD (S. K. Gambir) dated December 13, 2000 Fort Calhoun Station, Unit No. 1 – Request For Additional Information Related to Generic Letter 96-05, "Periodic Verification of Design-Basis Capability of Safety-Related Motor-Operated Values" (TAC No. M97049) (NRC-01-000)
4. Letter from OPPD (R. L. Phelps) to NRC (Document Control Desk) dated January 25, 2001, Response to Request for Additional Information Related to Generic Letter 96-05 (LIC-01-0007)

SUBJECT: **Omaha Public Power District (OPPD) Revised Response to NRC Generic Letter 96-05: Periodic Verification of Design Basis Capability Of Safety Related Motor Operated Valves**

Generic Letter 96-05 required each licensee to provide a written response within 60 days of letter receipt indicating whether or not the letter actions will be implemented. In addition, within 180 days, the letter required submittal of a written summary of the licensees' description of its Motor Operated Valve (MOV) periodic verification program.

OPPD has implemented and intends to continue a MOV periodic verification program. This existing program is being revised from the original response to GL 96-05. This letter is being submitted since Reference 2 stated, "OPPD would notify the NRC by written submittal at the time of implementation," of any program revisions.

OPPD will perform periodic verification (static) testing of Program valves to verify MOV capability every five years or three refueling outages, whichever is longer or Motor Control Center (MC2) testing on an eighteen month cycle on valves which are quarterly stroke tested and MC2 testing on a refueling frequency for the remaining valves. Dynamic testing will no longer be performed unless major maintenance activities have been performed or if routine static or motor control center testing

A073

indicates degradation. The program goal is to perform monitoring of all program valves utilizing MC2 testing on an 18 month cycle which will be phased in over the next three refueling cycles. Performance of MC2 testing will increase the monitoring frequency and will provide early indication of potential degradation. Degrading trends will result in valve static testing verification, the results of which direct required maintenance. In the event of any major valve maintenance or operating margins decreasing, valves capable of being dynamically tested will have dynamic testing performed.

The program changes will increase the monitoring frequency of program valves which will provide better overall operational data. The increased monitoring will provide early identification of potential problems.

There will be no change in the stem lubrication or operator inspection frequencies at this time.

Attached is a summary of this revised periodic verification program and supporting documentation for the revision.

I declare under penalty of perjury that the foregoing is true and correct. (Executed on August 8, 2003).

No commitments are made to the NRC in this letter. If you have any questions or require additional information, please contact Dr. R. L. Jaworski at (402) 533-6833.

Sincerely,

Richard P. Clemens
Division Manager
Nuclear Assessments

RPC/TRB/trb

Attachment

c: Thomas P. Gwynn, Acting NRC Regional Administrator, Region IV
A. B. Wang, NRC Project Manager
J. G. Kramer, NRC Senior Resident Inspector

Attachment 1

The Omaha Public Power District(OPPD) provides the following information for all Fort Calhoun Station GL-89-10 program valves: valve type, valve **Risk Reduction Worth (RRW) and Risk Achievement Worth (RAW),** number of static and dynamic tests performed, assumed valve factors, calculated valve factors (where available), operating margins, and the description of the revised periodic verification plan.

OPPD will perform periodic verification (static) testing of Program valves to verify MOV capability every five years or three refueling outages, whichever is longer or MC2 testing on an eighteen month cycle on valves which are quarterly stroke tested and MC2 testing on a refueling frequency for the remaining valves. Dynamic testing will no longer be performed unless major maintenance activities have been performed or if routine static or motor control center testing indicates degradation.

OPPD did not use grouping to complete the initial testing and design basis reviews required to establish our GL 89-10 Program. Grouping has been used as discussed in GL 89-10, Supplement 6, for dynamic test verifications of switch settings on high and low pressure safety injection valves.

The groups formed consisted of the eight High Pressure Safety Injection (HPSI) globe valves, and the other being the four Low Pressure Safety Injection (LPSI) globe valves. For the purposes of periodic verification these valves will no longer be grouped. All of these valves will be statically tested every five years or three refueling outages, whichever is longer or MC2 tested on an eighteen month cycle during a quarterly stroke test to ensure proper switch setting and to monitor for MOV degradations. The eight HPSI valves have RAW and RRW values of 1.000 and the four LPSI valves have RAW values of 1.114 and RRW values of 1.000.

All the HPSI and LPSI valve assumed valve factors are 1.1. Note the calculated values are low on valves with more than 1 dynamic test indicating the values lowered due to the normal maintenance activities on the valves. The assumed value of 1.1 is considered to be a conservative value for these valves.

The following are the individual thrust and torque values for the HPSI and LPSI valves are as follows:

HCV-311	HPSI To RC Loop 1B ; Isolation Valve, Margin 191% closing thrust, 398% thrust 635% torque opening. Valve factor Calculated 1.05. 1 Dynamic and 3 Static tests.
HCV-312	HPSI To RC Loop 1B ; Isolation Valve, Margin 256% closing thrust, 497% thrust 375% torque opening. Valve factor Calculated .37. 2 Dynamic and 3 Static tests.
HCV-314	HPSI To RC Loop 1A ; Isolation Valve, Margin 252% closing thrust, 659% thrust 1056% torque opening. Valve factor Calculated .72. 1 Dynamic and 3 Static tests.
HCV-315	HPSI To RC Loop 1A ; Isolation Valve, Margin 283% closing thrust, 643% thrust

823% torque opening. Valve factor Calculated .487. 1 Dynamic and 3 Static tests.

HCV-317 HPSI To RC Loop 2A ; Isolation Valve, Margin 245% closing thrust, 474% thrust 417% torque opening. Valve factor Calculated 1.01. 1 Dynamic and 4 Static tests.

HCV-318 HPSI To RC Loop 2A ; Isolation Valve, Margin 254% closing thrust, 745% thrust 773% torque opening. Valve factor Calculated .69. 1 Dynamic and 4 Static tests.

HCV-320 HPSI To RC Loop 2A ; Isolation Valve, Margin 250% closing thrust, 312% thrust 407% torque opening. Valve factor Calculated .811. 4 Dynamic and 4 Static tests.

HCV-321 HPSI To RC Loop 2A ; Isolation Valve, Margin 174% closing thrust, 652% thrust 761% torque opening. Valve factor Calculated .20. 3 Dynamic and 3 Static tests.

HCV-327 LPSI To RC Loop 1B ; Isolation Valve, Margin 260% closing thrust, 1356% thrust 249% torque opening. Valve factor Calculated .352. 3 Dynamic and 6 Static tests.

HCV-329 LPSI To RC Loop 1A ; Isolation Valve, Margin 356% closing thrust, 1189% thrust 230% torque opening. Valve factor Calculated .50. 3 Dynamic and 5 Static tests.

HCV-331 LPSI To RC Loop 2A ; Isolation Valve, Margin 586% closing thrust, 897% thrust 680% torque opening. Valve factor Calculated .598. 4 Dynamic and 4 Static tests.

HCV-333 LPSI To RC Loop 2B ; Isolation Valve, Margin 493% closing thrust, 2977% thrust 259% torque opening. Valve factor Calculated .51. 1 Dynamic and 3 Static tests.

HCV-383-3 and HCV-383-4 - These butterfly valves, the Containment Sump Isolation Valves, are two stage valves, as defined in GL 89-10, due to the inability to practically perform a full flow dynamic test in-situ. An analytical approach has been applied to these valves to verify the ability to operate during a design basis event. This approach, performed by Kalsi Engineering, Incorporated, included using the EPRI Butterfly MOV Guide and the Manufacturer's Data. These valves have a RAW and RRW values of 1.000

HCV-383-3 Containment Sump; Recirc Isolation Valve. Margin Torque 391% open. 3 Dynamic and 3 Static tests.
HCV-383-4 Containment Sump; Recirc Isolation Valve. Margin Torque 70% open. 3 Dynamic and 3 Static tests.

Future verification testing will consist of either static testing every five years or three refueling outages, whichever is longer or MC2 testing on an eighteen month cycle performed during stroke time testing to ensure proper switch setting and to monitor for MOV degradation. Verification will include dynamic testing following any major operator or valve maintenance.

HCV-347 and HCV-348 - These gate valves, the Shutdown Cooling Isolation Valves, are two stage approach valves, as defined in GL 89-10, due to the inability to achieve greater than 50% full design basis flow during testing. An analytical approach has been applied to these valves to

verify the ability to operate during a design basis event. This approach was performed by Kalsi Engineering using their KEIGATE Program. This Program is based on the many differential pressure tests of gate valves performed by and summarized by Kalsi Engineering. The results of this analytical approach have validated the current switch settings for these valves. These valves have a RAW of 1.165 for HCV-347 and 4.970 for HCV-348 and RRW values of 1.000 for HCV-347 and 1.019 for HCV-348

HCV-347 LPSI Loop 2 ; Shutdown Cooling Isolation Valve, Assumed valve factor .5 Calculated .1023 Margin- 197% closing thrust, 234% thrust 740% torque opening. 3 Dynamic (one partial) and 4 Static tests.

HCV-348 Loop 2 to Shutdown Cooling ; Isolation Valve. Assumed valve factor .5 Margin- 50% closing thrust, 106% thrust opening, no torque values. 2 Dynamic and 4 Static tests.

Future verification testing will consist of either static testing every five years or three refueling outages, whichever is longer or MC2 testing on an eighteen month cycle performed during quarterly stroke time testing to ensure proper switch setting and to monitor for MOV degradation. Verification will include dynamic testing following any major operator or valve maintenance.

LCV-218-2 - This gate valve, the Volume Control Tank Outlet Valve, was originally scheduled to be tested as a full flow and differential pressure valve. However, the initial testing was only able to produce 18.5% of design basis differential pressure. As a result, this valve was designated a two stage approach valve as defined by GL 89-10. An analytical approach has been applied to this valve to verify the ability to operate during a design basis event. This approach was performed by Kalsi Engineering using their KEIGATE Program. The results of this analytical approach have validated the current switch settings for this valve. This valve has a RAW and RRW value of 1.000

Volume Control Tank CH-14; Outlet Valve 141% Thrust closed, 166% thrust 136% torque open. 1 Dynamic and 3 Static tests. Assumed valve factor is .3.

Future verification testing of this valve will use the results of the analytical approach and static testing every five years or three refueling outages, whichever is longer or MC2 testing on an eighteen month cycle performed during stroke time testing to ensure proper switch setting and to monitor for MOV degradation

HCV-150 and HCV-151 Pressurizer RC-4; Relief Isolation Valve (PORV Block Valve).

These gate valves are two stage approach valves, as defined in GL 89-10, due to the inability to practically test in-situ. A prototype valve was tested under full design basis conditions. The test data from this testing was used to establish switch settings for the in-situ valves and subsequent static testing was performed to set the in-situ valves to these switch settings. From 1993 on, four static tests have been performed on these valves. The current operating thrust margins on these valves in the close direction are HCV-150 26% and HCV-151 18.9%. The assumed valve factor for these valves is .3. The RAW for HCV-150 is 1.021 and for HCV-151 is 1.020. The RRW for both valves is 1.000

Future verification testing will consist of static tests every five years or three refueling outages, whichever is longer or MC2 testing on an eighteen month cycle during a quarterly stroke test to ensure proper switch setting and to monitor for MOV degradations. At the valve static testing will be performed following any major operator or valve maintenance.

HCV-258 Boric Acid Storage Tank CH-11B ; Outlet Isolation Valve
HCV-265 Boric Acid Storage Tank CH-11A ; Outlet Isolation Valve

These gate valves have each been dynamically tested three times from 1993 to present. The following are the individual static tests for each valve - HCV-258 five times and HCV-265 four times. The operating margins in the open direction for these valves are HCV-258 torque 1172% and thrust 488%, HCV-265 torque 404% and thrust 113%. The assumed valve factor for these valves is .3. The RRW and RAW values are 1.000 for these valves.

Future verification testing will consist of either static tests every five years or three refueling outages, whichever is longer or MC2 testing on an eighteen month cycle during a quarterly stroke test to ensure proper switch setting and to monitor for MOV degradations. Verification will include dynamic testing following any major operator or valve maintenance.

HCV-268 Boric Acid Pump to Charging Suction Isolation Valve.

This gate valve has been dynamically tested three times and statically tested four times from 1993 to present. The operating margin in the open direction for this valve is torque 514% and thrust 254%. The RRW and RAW values are 1.000 for this valve. The assumed valve factor is .3.

Future verification testing will consist of either static testing every five years or three refueling outages, whichever is longer or MC2 testing on a refueling cycle during stroke time testing to ensure proper switch setting and to monitor for MOV degradation. Verification will include dynamic testing following any major operator or valve maintenance.

HCV-308 HPSI Header, Charging Header Crosstie Valve.

This globe valve has been dynamically tested three times and statically tested four times from 1993 to present. The operating thrust margin in the open direction is 110% and 174% in the close direction. The RRW and RAW values are 1.000 for this valve. The assumed valve factor is .3.

Future verification testing will consist of either static testing every five years or three refueling outages, whichever is longer or MC2 testing on an eighteen month cycle performed during quarterly stroke time testing to ensure proper switch setting and to monitor for MOV degradation. Verification will include dynamic testing following any major operator or valve maintenance.

HCV-1041C Main Steam Isolation HCV-1041A Bypass Valve
HCV-1042C Main Steam Isolation HCV-1042A Bypass Valve

These globe valves have had individual static tests performed as follows- HCV-1041C five times and HCV-1042C four times. The operating margins for these valves are HCV-1041C torque 1432% and thrust 805% open direction, and thrust 50% closed, HCV-1042C torque 569% and thrust 827% open direction and thrust 30% closed. The assumed valve factor for these valves is 1.1. The RRW and RAW values are 1.000 for these valves.

Future verification testing will consist of either static tests every five years or three refueling outages, whichever is longer or MC2 testing on an eighteen month cycle during stroke test to ensure proper switch setting and to monitor for MOV degradations. Verification will include dynamic testing following any major operator or valve maintenance.

HCV-1384 Main and Auxiliary Feedwater ; Crossconnect Valve. The operating margins for these valves are 26% closing thrust, 216% thrust and 384% torque opening. The RRW value is 1 and RAW value is 1.027 for this valve. Assumed valve factor .3 Calculated .29. There have been 2 Dynamic and 3 Static tests performed on this valve.

Future verification testing will consist of either static testing every five years or three refueling outages, whichever is longer or MC2 testing on a refueling cycle during stroke time testing to ensure proper switch setting and to monitor for MOV degradation. Verification will include dynamic testing following any major operator or valve maintenance.

HCV-1385 S/G RC-2B Isolation Valve.

Margin- 40% Thrust closed 44% thrust open. The RRW and RAW values are 1.000 for this valve. Assumed valve factor .5. There have been 4 Dynamic and 4 Static tests performed on

this valve.

Future verification testing will consist of either static testing every five years or three refueling outages, whichever is longer or MC2 testing on a refueling cycle during stroke time testing to ensure proper switch setting and to monitor for MOV degradation. Verification will include dynamic testing following any major operator or valve maintenance.

HCV-1386 S/G RC-2A ; Feedwater Isolation Valve.
Margin- 55% Thrust 54% torque closed, 31% thrust 289% torque open. The RRW and RAW values are 1.000 for this valve. Assumed valve factor .5. There have been 3 Dynamic and 3 Static tests performed on this valve.

Future verification testing will consist of either static testing every five years or three refueling outages, whichever is longer or MC2 testing on a refueling cycle during stroke time testing to ensure proper switch setting and to monitor for MOV degradation. Verification will include dynamic testing following any major operator or valve maintenance.

Note: HCV-1103 and HCV- 1104 are "special category" valves monitored through the GL-89-10 program.

HCV-1103 S/G RC-2A; Feed Reg Valve FCV-1101 Outlet Isolation Valve.
Margin- 65.5% Thrust closed 41.8% thrust 154 torque open. The RRW and RAW values are 1.000 for this valve. Assumed valve factor .5. There have been 3 Static tests performed on this valve.

Future verification testing will consist of either static testing every five years or three refueling outages, whichever is longer or MC2 testing on a refueling cycle during stroke time testing to ensure proper switch setting and to monitor for MOV degradation. Verification will include dynamic testing following any major operator or valve maintenance.

HCV-1104 S/G RC-2B; Feed Reg Valve FCV-1102; outlet Isolation Valve.
Margin-78% Thrust closed, 17.5% thrust 147% torque open. The RRW and RAW values are 1.000 for this valve. Assumed valve factor .5. There have been 3 Static tests performed on this valve.

Future verification testing will consist of either static testing every five years or three refueling outages, whichever is longer or MC2 testing on a refueling cycle during stroke time testing to ensure proper switch setting and to monitor for MOV degradation. Verification

will include dynamic testing following any major operator or valve maintenance.

LCV-218-3 Charging Pumps CH-1A, B&C Suct HDR; Safety Injection & Boric Acid; Supply Valve.

Margin- 267% Thrust closed, 126% thrust open torque is not measured. The RRW and RAW values are 1.000 for this valve. Assumed valve factor .3. There have been 3 Dynamic and 4 Static tests performed on this valve.

Future verification testing will consist of either static testing every five years or three refueling outages, whichever is longer or MC2 testing on a refueling cycle during stroke time testing to ensure proper switch setting and to monitor for MOV degradation. Verification will include dynamic testing following any major operator or valve maintenance.