Constellation Energy®
Nine Mile Point Nuclear Station

P.O. Box 63
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November 13, 2008

U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

ATTENTION: Document Control Desk

SUBJECT: Nine Mile Point Nuclear Station
Unit Nos. 1 and 2; Docket Nos. 50-220 and 50-410

Inservice Testing (IST) Program Update and Associated 10 CFR 50.55a Requests – Response to NRC Request for Additional Information (TAC Nos. MD9202 and MD9203)

REFERENCES: (a) Letter from G. J. Laughlin (NMPNS) to Document Control Desk (NRC), dated June 30, 2008, Inservice Testing (IST) Program Update and Associated 10 CFR 50.55a Requests for the Next Ten-Year IST Intervals

(b) Letter from R. V. Guzman (NRC) to K. J. Polson (NMPNS), dated October 14, 2008, Request for Additional Information Regarding Nine Mile Point Nuclear Station, Unit Nos. 1 and 2 (NMP 1 and 2), Pump and Valve Inservice Testing (IST) Program for 10-Year IST Interval (TAC Nos. MD9202 and MD9203)

Nine Mile Point Nuclear Station, LLC (NMPNS) hereby transmits supplemental information requested by the NRC in support of several previously submitted 10 CFR 50.55a requests associated with the Nine Mile Point Units 1 and 2 Inservice Testing Plan update that was submitted by letter dated June 30, 2008 (Reference a). The supplemental information, provided in the Attachment to this letter, responds to the request for additional information (RAI) documented in the NRC's letter dated October 14, 2008 (Reference b). This letter contains no new regulatory commitments.

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Should you have any questions regarding the information in this submittal, please contact T. F. Syrell, Licensing Director, at (315) 349-5219.

Very truly yours,

Gary Jay Laughlin
Manager Engineering Services

GJL/DEV

Attachment: Nine Mile Point Units 1 and 2 – Response to NRC Request for Additional Information Regarding 10 CFR 50.55a Requests Associated with the Ten-Year Inservice Testing Program Update

cc: S. J. Collins, NRC
R. V. Guzman, NRC
Resident Inspector, NRC

ATTACHMENT

NINE MILE POINT UNITS 1 AND 2

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION

REGARDING 10 CFR 50.55a REQUESTS ASSOCIATED WITH THE

TEN-YEAR INSERVICE TESTING PROGRAM UPDATE

ATTACHMENT

NINE MILE POINT UNITS 1 AND 2
RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION
REGARDING 10 CFR 50.55a REQUESTS ASSOCIATED WITH THE
TEN-YEAR INSERVICE TESTING PROGRAM UPDATE

By letter dated June 30, 2008, Nine Mile Point Nuclear Station, LLC (NMPNS) submitted the Nine Mile Point Units 1 and 2 Inservice Testing (IST) Program update and associated 10 CFR 50.55a requests. This attachment provides supplemental information in response to the request for additional information documented in the NRC's letter dated October 14, 2008, concerning several of the 10 CFR 50.55a requests. Each NRC request is repeated (in italics), followed by the NMPNS response.

Question 1 - Relief Request CRD-VR-01 (Unit 1)

1.a The relief request discusses various flow paths associated with the air supply to the scram discharge volume vent and drain valves. Please provide a simplified schematic of the referenced flow paths.

Response

The enclosed drawing C-18016-C, Sheets 1 and 2, illustrates the flow paths associated with the air supply to the scram discharge volume vent and drain valves that are discussed in Nine Mile Point Unit 1 (NMP1) request CRD-VR-01.

1.b The relief request states that the test solenoid flow path is not a fixed resistance system and can result in inaccurate stroke-time measurements. Please provide valve stroke-time data indicating the variation in quarterly stroke time measurements observed as a result of using the test solenoid flow path and discuss the corrective action consequences that resulted from the inaccurate stroke-time measurements.

Response

The following table provides stroke time data for the scram discharge volume vent valves (IV-44.2-15 and IV-44.2-16) and drain valves (IV-44.2-17 and IV-44.2-18). The "Test Solenoid Vent Path" closure times are from historical quarterly tests, whereas the safety-related exhaust path ("Scram Vent Path") closure times are from recent refueling outage tests.

Valve No.	Valve Closure Time Range (seconds)	
	Using Test Solenoid Vent Path	Using Scram Vent Path
IV-44.2-15	117 to 143	6.3 to 8.1
IV-44.2-16	6.1 to 13.3	5.4 to 9.1
IV-44.2-17	7.8 to 14.5	6.3 to 8.4
IV-44.2-18	126 to 142	5.2 to 6.8

As noted in request CRD-VR-01, the quarterly stroke closure times of the scram discharge volume vent and drain valves obtained utilizing the Test Solenoid Vent Path varied significantly due to the variable resistance that the test solenoid pilot valve represents. Additionally, the associated times were not representative of the times obtained during the refueling outage interval tests when the scram vent path could be used. This disparity in valve closure times resulted in submittal of a relief request (CRD-RR-4

for valves IV-44.2-15 and IV-44.2-18) by Niagara Mohawk Power Corporation in a letter dated June 20, 1989.

NMPNS believes that due to the significant difference in quarterly versus refueling interval stroke times for these valves, as well as the variation experienced within the quarterly stroke time data versus the variation within the refueling interval data, the performance of quarterly stroke time testing of these valves does not provide an effective means of monitoring and detecting valve degradation. The refueling interval stroke time testing using the scram vent path has been shown to be both repeatable and an effective means of detecting valve degradation and demonstrating operational readiness.

Question 2 - Relief Request CTNH202-VR-02 (Unit 1)

2. *The relief request states that the valves stroke in less than 2 seconds and that a limiting value of 2 seconds is assigned to the group. Subsequent to this statement, the relief request states that if the slowest valve exceeds the acceptance criteria (50% of the group reference value or 2 second limiting value) the group is declared inoperable. The American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) states that valves that stroke in less than 2 seconds may be exempted from ISTC 5152(b) and that in such cases the maximum limiting stroke time shall be 2 seconds. Please clarify the acceptance criteria to be utilized during valve stroke-time testing (2 seconds versus 50% of the group reference value).*

Response

NMPNS hereby clarifies NMP1 request CTNH202-VR-02 to state that a fixed limiting stroke time value of 2.0 seconds is assigned for the four valves listed in the request. This limit is assigned in accordance with ISTC 5152(b) as all four of the subject valves stroke in 2.0 seconds or less.

Question 3 - Relief Request RBCLC-PR-01 (Unit 1)

3.a *Please discuss the feasibility of installing permanent or temporary flow instrumentation in the pump discharge lines to allow compliance with the ASME OM Code requirements.*

Response

The current system piping configuration does not meet the ultrasonic flow meter vendor recommendations for having a sufficient length of straight piping to provide the necessary conditions to accurately and repeatedly measure individual pump flow rate with a temporary flow measurement device. Additionally, turbulence caused by piping elbows creates very unfavorable conditions for employing a temporary flow measurement device. A major piping modification would be required to facilitate installation of permanent individual pump flow measuring devices which would be costly and burdensome, and would not provide a compensating increase in the level of quality or safety for the associated components or system.

3.b The use of analytical methods to determine individual pump flow rates has been authorized by the NRC in cases where single pump operation is not attainable during normal operation and individual pump flow instrumentation is not installed. Please discuss the feasibility of utilizing analytical methods to determine individual pump flow rates.

Response

An evaluation was performed to determine the feasibility of implementing analytical methods to determine individual pump flow rates for the three NMP1 Reactor Building Closed Loop Cooling (RBCLC) pumps. The evaluation considered testing of two pumps at a time, in various combinations, to monitor the performance of each pump. The following was determined during this evaluation.

The NMP1 RBCLC system employs an automatic temperature control valve (TCV) that regulates supply or bypass flow to/around the system heat exchangers. To establish stable test conditions, the RBCLC TCV would need to be removed from automatic and taken to manual by Operations. To perform this activity quarterly would be burdensome to Operations and place the plant in a vulnerable condition if fluctuations in system heat loads or lake temperature were to occur. Additionally, the RBCLC heat exchangers are vulnerable to tube damage from flow-induced vibration. Such flow-induced vibration occurs when three RBCLC pumps are running. Currently, three-pump operation occasionally occurs during normal pump rotation, when the third (standby) pump is started prior to securing one of the two previously operating pumps. The RBCLC system operating procedure includes cautions to minimize the time that all three pumps are running. Quarterly two-pump combination testing would result in a significant increase in three-pump operation, which could potentially shorten heat exchanger tube life expectancy. Finally, gate valves would need to be throttled to establish test conditions. Gate valves are not the preferred style valve for throttling. Globe valves are better for flow control and more resistant to wear in a throttled position. Excessive wear and tear to the pump discharge gate valves would likely occur due to throttling each quarter.

NMPNS believes that the risk of RBCLC system equipment damage and the additional burden placed on plant operators outweigh the benefits that might be derived from performing quarterly two-pump combination testing. In addition, review of the monitoring and trending methodology that has been in place for many years indicates that current practice, as described in the "Proposed Alternative and Basis for Use" section of request RBCLC-PR-01, has been and will continue to be an effective means for detecting early degradation in pump performance and demonstrating pump operational readiness.

3.c Please discuss the feasibility of establishing hydraulic performance acceptance criteria based on dual pump operation.

Response

As stated in the response to RAI 3.b above, NMPNS believes that the risk of RBCLC system equipment damage and the additional burden placed on plant operators outweigh the benefits that might be derived from performing quarterly two-pump combination testing. Thus, NMPNS does not consider it feasible to establish hydraulic performance criteria based on two-pump operation.

Question 4 - Relief Request MSS-VR-01 (Unit 2)

4.a The ASME OM Code has developed a code case addressing test frequencies of ASME Class 1 pressure relief/safety valves. The code case provides a 72-month test interval with a 6-month grace period to accommodate extended shutdown periods provided certain requirements are implemented. One of the requirements is that each valve is disassembled and inspected after as-found set pressure testing to verify that parts are free of defects resulting from time related degradation or service induced wear. Based on this inspection, the owner shall determine the need for additional inspections or testing to address any generic concerns. Please discuss the feasibility of implementing the criteria established by the ASME OM Code for extending the safety relief valve (SRV) test interval beyond 5 years.

Response

The SRV testing and maintenance cycle at NMP2 consists of 2 stages: (1) as-found testing; and (2) maintenance activities performed on the valves and subsequent post-maintenance recertification testing.

Subsequent to completion of as-found testing, each SRV in the removed complement is disassembled to perform inspection and maintenance activities, including disc and seat inspection for evidence of degradation such as leakage or misalignment. Any SRV that failed the as-found set pressure test is inspected to determine the cause. In the event the as-found tests or the visual inspections indicate that spring pack degradation may be present, a set pressure load test is performed to determine the amount of friction present and hysteresis characteristics. The results of this test are evaluated by the test supervisor to identify irregularities in operation that might be indicative of subcomponent degradation. Based upon the results of the test review, a determination is made by the test supervisor to perform full or partial valve overhaul.

All adverse conditions are corrected, the disc and seats are lapped, and the valve is reassembled. Each SRV is then recertified for service through inspection and testing consistent with ASME OM Code requirements, including set pressure, seat tightness, stroke time and disc lift verifications, solenoid coil pick up/drop out, and air actuator integrity tests.

The SRV as found set pressure test data for the last five NMP2 refueling outages (see response to RAI 4.c below) demonstrates that the current maintenance practices outlined above have been effective since only one as found setpoint test failure has been experienced during this time.

4.b The relief request states that 5 as-found setpoint tests exceeded the Code tolerance of plus or minus 3%. Please provide the as-found setpoint data for the five failed tests, identify the cause of the failure if known, and identify any corrective actions taken to improve valve performance following the failed tests.

Response

The as-found setpoint data for the five (5) failed SRV as-found setpoint tests (i.e., the Code tolerance of ±3% was exceeded) is summarized below.

- One SRV as-found setpoint test failed on the low side (setpoint less than the -3% tolerance). The following summarizes the test data for this SRV:

SRV Tested	Serial No.	Setpoint (psig)	When Tested	As Found Setpoint Test Results (psig)	Test Medium	Correlated Set Pressure (psig)	Correlated Max Set Pressure +3% (psig)	Correlated Min Set Pressure -3% (psig)
2MSS*PSV135[1]	160976	1195	Mar-02	1170	Nitrogen	1214	1247	1180

NOTES: (1) The cause for this failure was determined to be setpoint drift. Minor adjustments were made to restore the set pressure to the acceptance range. No additional causes for the setpoint drift were found during valve maintenance. The valve was refurbished and re-certified.

- Four SRV as-found tests failed on the high side (setpoint greater than the +3% tolerance). The following summarizes the test data for these SRVs:

SRV Tested	Serial No.	Setpoint (psig)	When Tested	As Found Setpoint Test Results (psig)	Test Medium	Max Set pressure +3% (psig)	Min Set pressure -3% (psig)
2MSS*PSV122[1]	160969	1185	Oct-90	1228	Steam	1221	1149
2MSS*PSV121[2]	160966	1195	Apr-92	1234	Steam	1230.8	1159.1
2MSS*PSV123[3]	160960	1175	Oct-96	1219	Steam	1210.2	1139.7
2MSS*PSV125[3]	160953	1185	Oct-96	1228	Steam	1220	1149

NOTES: (1) The cause for this failure was attributed to corrosion-induced frictional forces in the closely toleranced kinematic parts. The valve was refurbished and re-certified.
(2) The cause for this failure was determined to be setpoint drift most likely caused by corrosion of the setpoint spring kinematic part surfaces subject to relative motion. The valve was refurbished and re-certified.
(3) The cause for these failures was attributed to the use of a cleaning agent by the third-party test facility that was applied prior to as-found testing to reduce inlet nozzle contamination levels. The valves were refurbished and re-certified. The SRV test procedure was revised to assure that cleaning agents are not introduced into the SRV inlet during performance of as-found testing.

4.c Please provide a summary of the SRV testing conducted for the last 5 refueling outages (valve, date tested, as-found setpoint, interval between previous test).

Response

A summary of the SRV testing conducted during the last five NMP2 refueling outages is provided in the following table. Note that all SRV testing performed during these refueling outages utilized nitrogen, with a correlated set pressure.

ATTACHMENT

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SRV Tested	Serial No.	Setpoint (psig)	As Found Setpoint Test Results (psig)	Correlated Set Pressure (psig)	Correlated Max Set Pressure +3% (psig)	Correlated Min Set Pressure -3% (psig)	Accept/ Reject	Interval Between Previous Test
Refueling Outage 11, April 2008								
2MSS*PSV126	160965	1195	1212	1215	1248	1181	Accept	6 yrs
2MSS*PSV127	160956	1205	1220	1224.9	1258.7	1190.9	Accept	6 yrs
2MSS*PSV128	160972	1165	1162	1184	1217	1151	Accept	6 yrs
2MSS*PSV131	160961	1175	1200	1194	1227	1161	Accept	6 yrs
2MSS*PSV132	160915	1185	1182	1205	1238	1171.4	Accept	6 yrs
2MSS*PSV135	160964	1195	1197	1215	1248	1181	Accept	6 yrs
Refueling Outage 10, April 2006								
2MSS*PSV120	160935	1185	1203	1205	1238	1171	Accept	6 yrs
2MSS*PSV121	160966	1195	1224	1215	1248	1181	Accept	6 yrs
2MSS*PSV122	160951	1185	1222	1204	1238	1171	Accept	6 yrs
2MSS*PSV125	160968	1185	1194	1205	1238	1171	Accept	6 yrs
2MSS*PSV129	160971	1205	1225	1225	1258	1191	Accept	6 yrs
2MSS*PSV133	160958	1165	1176	1184	1217	1151	Accept	6 yrs
Refueling Outage 9, April 2004								
2MSS*PSV123	160960	1175	1191	1195.2	1228	1162	Accept	6 yrs
2MSS*PSV124	160974	1175	1193	1195.2	1228	1162	Accept	6 yrs
2MSS*PSV130	160936	1195	1193	1215.5	1249	1181	Accept	6 yrs
2MSS*PSV134	160954	1205	1225	1225	1259	1191.6	Accept	6 yrs
2MSS*PSV136	160973	1175	1189	1195.2	1228	1162	Accept	6 yrs
2MSS*PSV137	160905	1205	1239	1225.7	1259.7	1191.6	Accept	6 yrs
Refueling Outage 8, March 2002								
2MSS*PSV121	160939	1195	1219	1214	1248	1180	Accept	6 yrs
2MSS*PSV126	160967	1195	1189	1214	1247	1180	Accept	6 yrs
2MSS*PSV127	160955	1205	1201	1224	1258	1190	Accept	6 yrs
2MSS*PSV128	160903	1165	1176	1184	1216	1151	Accept	6 yrs
2MSS*PSV129	160904	1205	1220	1224	1258	1190	Accept	6 yrs
2MSS*PSV132	160953	1185	1181	1204	1237	1171	Accept	6 yrs
2MSS*PSV134	160970	1205	1192	1224	1258	1190	Accept	6 yrs
2MSS*PSV135[(1)]	160976	1195	1170	1214	1247	1180	Reject	6 yrs
2MSS*PSV131[(1)]	160962	1175	1186	1194	1227	1161	Accept	6 yrs
2MSS*PSV133[(1)]	160959	1165	1169	1184	1216	1151	Accept	6 yrs
Refueling Outage 7, March 2000								
2MSS*PSV120	160915	1185	1219	1204	1238	1171	Accept	4 yrs
2MSS*PSV121	160965	1195	1231	1215	1248	1181	Accept	4 yrs
2MSS*PSV122	160950	1185	1222	1204	1238	1171	Accept	4 yrs
2MSS*PSV123	160963	1175	1208	1194	1227	1161	Accept	4 yrs
2MSS*PSV124	160906	1175	1189	1194	1227	1161	Accept	4 yrs
2MSS*PSV125	160952	1185	1220	1204	1238	1171	Accept	4 yrs

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SRV Tested	Serial No.	Setpoint (psig)	As Found Setpoint Test Results (psig)	Correlated Set Pressure (psig)	Correlated Max Set Pressure +3% (psig)	Correlated Min Set Pressure -3% (psig)	Accept/ Reject	Interval Between Previous Test
2MSS*PSV128	160958	1165	1193	1184	1217	1151	Accept	4 yrs
2MSS*PSV129	160956	1205	1214	1225	1258	1191	Accept	4 yrs
2MSS*PSV135	160975	1195	1244	1215	1248	1181	Accept	4 yrs
2MSS*PSV136	160961	1175	1221	1194	1227	1161	Accept	4 yrs
2MSS*PSV137	160954	1205	1222	1225	1259	1191	Accept	4 yrs

NOTES: (1) SRV 2MSS*PSV135 failed the as-found set pressure test (relieved early) during Refueling Outage 8. Two additional valves (2MSS*PSV131 and 2MSS*PSV133) were tested per Code requirements, and both passed.

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