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DEC 10 2009

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station OP1-17
Washington, DC 20555

SUSQUEHANNA STEAM ELECTRIC STATION
PROPOSED ONE TIME RELIEF REQUEST TO EXTEND THE TEST FREQUENCY FOR A MAIN STEAM SAFETY RELIEF VALVE FOR THIRD 10-YEAR INTERVAL IN-SERVICE TESTING PROGRAM PLAN FOR SUSQUEHANNA SES UNIT 1
Docket No. 50-387
PLA-6585

Pursuant to 10CFR50.55a(a)(3)(i) PPL Susquehanna, LLC (PPL) requests NRC approval of Relief Request RR-08 to the Susquehanna SES Unit 1 In-Service Testing Program Plan. This Relief Request is an alternative for already approved Relief Request RR-02. Relief Request RR-08 would extend the test interval for one Main Steam Safety Relief Valves (SRVs) beyond 6 years on a one-time basis to allow the testing to be performed during the next refueling outage, which is scheduled to begin in March 2010. The basis for the request is that this request would result in an acceptable level of quality and safety.

This request is similar to the requested use of Alternative Relief Request RR-07 approved by the Nuclear Regulatory Commission (NRC) on November 20, 2009.

By letter dated November 20, 2009, PPL Susquehanna, LLC requested that the Nuclear Regulatory Commission (NRC) authorize the use of Alternative Request RR-07 for the Susquehanna Steam Electric Station, Unit 1. That request sought authorization to extend the test interval for Susquehanna SES Unit 1 SRVs PSV141F013A and PSV141F013C beyond six years on a one-time basis until the March 2010 refueling outage.

On November 20, 2009, NRC granted verbal approval of Relief Request RR-07. The NRC staff determined that extending the 6-year test interval for Main Steam SRVs PSV141F013A and PSV141F013C for up to six months was acceptable on a one time-basis until the March 2010 refueling outage since all the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(i) were addressed.

PPL requests approval of Relief Request RR-08 as soon as possible.

A047
NRR

Should you have any questions, please contact Michael H. Crowthers at (610) 774-7766.

Sincerely,

T. S. Rausch

Attachment 1 – Revision 0 to Relief Request RR-08

Copy: NRC Region I
Mr. P. W. Finney, NRC Resident Inspector
Mr. R. R. Janati, DEP/BRP
Mr. J. S. Kim, NRC Project Manager
Mr. B. K. Vaidya, NRC Project Manager

ATTACHMENT 1 TO PLA-6585

REVISION 0 TO

RELIEF REQUEST RR-08

RELIEF REQUEST RR-08

Relief in accordance with 10CFR50.55a(a)(3)(i)
Acceptable level of quality and safety

1. ASME Code Component(s) Affected

Serial Number/ Component ID	Class	Category	Label
N63790-00-0024 PSV141F013F	1	C	MAIN STEAM SRV

This valve is a Main Steam Safety/Relief Valve. It provides overpressure protection for the reactor coolant pressure boundary to prevent failure of the reactor vessel pressure boundary that could result in unacceptable radioactive release and exposure to plant personnel. This valve is not associated with the Automatic Depressurization System (ADS).

2. Applicable Code Requirement

PPL Susquehanna, LLC (PPL) Relief Request RR-02, authorized by Reference 1, provides an alternative to ASME OM Code 1998 Edition through OMb-2000 Addenda, paragraph I-1330, "Test Frequencies, Class 1 Pressure Relief Valves." The alternative requires that Class 1 pressure relief valves be tested at least once every three refueling cycles. It also requires a minimum of 20% of the valves from each valve group to be tested within any 24-month interval. This 20% shall consist of valves that have not been tested during the current three-cycle interval, if they exist. The test interval for any individual valve shall not exceed three refueling cycles.

3. Basis for Relief

OM Code-1998, Appendix I, I-1300, "Inservice Testing," states the inservice testing shall commence when the valves are required to be operable to fulfill their required function(s). Paragraph I-1330(a), "Test Frequencies, Class 1 Pressure Relief Valves," states that Class 1 pressure relief valves shall be tested at least once every 5 years, starting with initial electric power generation. The alternative to Paragraph I-1330(a), in PPL's Relief Request RR-02, requires that the test interval for any individual Class 1 pressure relief valve shall not exceed three refueling cycles. The required testing ensures that the Main Steam SRVs will open at the pressures assumed in the safety analysis. These valves are located on the main steam lines between the reactor vessel and the inboard main steam isolation valves within the drywell.

Pursuant to 10 CFR 50.55a(a)(3)(i), PPL requests a one-time relief from (modification to) the requirements of the approved alternative described in Relief Request RR-02 for one (1) of the sixteen (16) Main Steam SRVs. Relief is requested until completion of the spring 2010 refueling outage scheduled to begin in March 2010.

During a review of the industry operating experience, a discrepancy was identified relative to compliance with the 10 CFR 50.55a Relief Request RR-02 maximum test interval for an individual SRV of three refueling cycles. The ASME OM Code interpretation (01-18) indicated that implementation of the test interval should be based upon a "test-to-test" duration. The historical method has been to use an "installation-to-test" duration and to ensure that all installed Main Steam SRVs would not exceed the three refueling cycle duration (assuming a 24-month period for each of the refueling cycles).

This request provides an acceptable level of quality and safety. Technical Specification (TS) 3.4.3 requires that if one or more required SRVs are inoperable, actions must be taken to shut down the reactor. Susquehanna SES is equipped with sixteen (16) SRVs, of which 14 are required. Without approval of this relief request, and should two additional SRVs become inoperable, a forced shutdown of the unit for testing and replacement of a third inoperable SRVs would be required per the requirements of TS 3.4.3.

The Main Steam SRVs are located inside the drywell in a high radiation area. The additional dose for the removal, testing, and re-installation of an SRV, including scaffolding erection/removal and insulation removal/re-installation, would be incurred. If Susquehanna Unit 1 were shutdown before the spring 2010 refueling outage to perform SRV testing, an additional six SRVs would need to be tested during the refueling outage to meet the requirement of Relief Request RR-02. Thus, additional radiation exposure would be realized if the proposed alternative is not authorized.

Based on the above discussion, and consistent with the guidance in NUREG-1482, Revision 1, Section 2.5, authorization of this one-time request alternative is an acceptable level of quality and safety, and will avoid the additional dose incurred for the replacement and testing of the SRVs.

4. Proposed Alternative and Basis for Use:

For the Main Steam SRV impacted, PPL Susquehanna, LLC (PPL) proposes to extend the maximum test interval by no more than 4 months beyond the specified three refueling cycles (listed in Table 1) to allow testing to be performed during the spring 2010 refueling outage. During the spring 2010 refueling outage, PPL will remove and test this Main Steam SRV. The removed valve will be replaced with recently tested valves.

Additionally, as required by the Code, if the as-found set-pressure of any SRV is found to be > 3% above the nameplate set-pressure, two additional SRVs from the same valve group will be tested. If the as-found set-pressure of any of these additional SRVs is found to be > 3% above the nameplate set-pressure, then all remaining SRVs of that same valve group shall be tested.

The basis for this request is as follows:

A review of the setpoint testing results for the time period from initial operation of both Unit 1 and Unit 2 to the present, which comprises 284 data points, shows that the average setpoint change is -0.79%. This slight deviation is well within the requirement specified in TS SR 3.4.3.1 that the as-left setpoint be within plus or minus 1% of the nameplate, and well within the as-found Code requirement of plus or minus 3%. The number of as-found setpoints greater than 1% above the nameplate set pressure was 34. Ten (10) were greater than 2% above the nameplate. Two (2) were greater than the Code tolerance of +3% for the as-found setpoint test, requiring testing of additional SRVs.

The testing data indicates that setpoint history has been good. Twenty (20) valves experienced as-found test results greater than 3% below the nameplate set pressure. No additional testing, as a result of these as-found tests was required. The time additional testing was required (as-found setpoint greater than +3%) was in 1990 and 1991. The SRV as-found set pressure test data for the last 10 years is summarized in Table 2. Data on the twenty-two (22) Main Steam SRV as-found setpoint test failures identified above is summarized in Attachment 1 to this relief request.

A 24-month fuel cycle has been implemented at Susquehanna SES Unit 1. Each refueling outage, PPL removes and tests six of the sixteen Main Steam SRVs so that all valves are removed and are tested every three refueling outages. Subsequent to completion of as-found testing, each SRV in the removed complement is disassembled to perform an 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.

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.

After recertification testing, the SRVs are stored in controlled areas at the recertification vendor facility and at Susquehanna SES.

The SRV as-found set pressure test data in Table 2 demonstrates that the current maintenance practices outlined above have been effective, and that pre-installation SRV storage has had no significant impact on SRV test results. Only one as-found setpoint test failure has been experienced during the time period encompassed by the data in Table 2. Note that testing performed on SRVs removed during these refueling outages utilized nitrogen, with a correlated set pressure. The data in Table 2 also illustrates that SRVs that have exceeded 6 years between tests have still demonstrated acceptable as-found setpoint test results.

Based on the above cited valve performance history, SRV maintenance practices and the controlled storage environment for the stored SRVs, there is continued assurance of valve operational readiness, as required by ASME OM Code-1998, Appendix I, paragraph I-1330(a) and Relief Request RR-02, even given the requested one-time extension of the test interval as outlined in this request. Therefore, PPL has concluded that authorization of this one-time request is an alternate of an acceptable level of quality and safety, and will avoid the additional dose incurred for the replacement and testing of the SRVs.

5. Duration of Proposed Alternative:

This proposed alternative is requested until the completion of Susquehanna SES Unit 1 spring 2010 refueling outage, which is currently scheduled to begin in March 2010.

6. Precedents:

A similar relief request was verbally approved by the NRC on November 20, 2009 for SSES based on the below listed request (Reference 2).

Similar relief requests have been approved for other plants as listed below:

- Letter from H. Chemoff (USNRC) to C. Pardee (Exelon), "Peach Bottom Atomic Power Station, Units 2 and 3 – Requests for Relief Associated with the Fourth Inservice Testing Interval (TAC Nos. MD7461 and MD7462)," dated September 3, 2008 (Relief Request Number 01A-VRR-1).

- Letter from R. Gibbs (USNRC) to C. Crane (Exelon), "Dresden Nuclear Power Station, Unit 2 - Request for Relief from ASME OM Code 5-Year Test Interval Requirements (TAC No. MD5959)," dated September 20, 2007 (Relief Request Number RV-02B).

- Letter from N. Salgado (USNRC) to S. Belcher (NMPNS), "Nine Mile Point Nuclear Station, Unit 2 – Request for Alternative No. MSS-VR-02 Main Steam Safety Relief Valve Test Interval Extension (TAC No. ME2130)," dated September 23, 2009.

7. References:

1. Letter from R. Laufer (USNRC) to B. L. Shriver (PPL), "Susquehanna Steam Electric Station, Unit 1 and 2 – Third 10-Year Internal In-Service Testing (IST) Program Plans (TAC Nos. MC3382, MC3383, MC 3384, MC3385, MC3386, MC3387, MC3388, MC3389, MC4421, MC4422)," dated March 10, 2005.

2. Letter (PLA-6584) from T. S. Rausch (PPL) to the Nuclear Regulatory Commission, "Susquehanna Steam Electric Station, Proposed One-Time Relief Request to Extend the Test Frequency for Main Steam Safety Relief Valves for Third 10-Year Interval In-Service Testing Program Plan for Unit 1," dated November 20, 2009.

Table 1: Currently Installed Main Steam SRVs in Susquehanna SES Unit 1

MSRV Installation Position	Installed Valve Serial Number	Design Safety Actuation Setpoint (psig)	"As Left" Safety Actuation Setpoint (psig)	Date MSRV "As Left" Safety Actuation Setpoint Last Tested
A	N63790-00-0083	1175	1181	11/21/03
B	N63790-00-0032	1205	1204	8/27/04
C	N63790-00-0026	1195	1198	11/22/03
D	N63790-00-0128	1175	1183	9/13/07
E	N63790-00-0033	1195	1197	11/17/03
F	**N63790-00-0024**	**1205**	**1199**	**11/19/03**
G	N63790-00-0129	1205	1200	9/17/07
H	N63790-00-0029	1195	1200	8/24/04
J	N63790-00-0133	1195	1196	9/21/07
K	N63790-00-0093	1205	1210	9/10/05
L	N63790-00-0034	1195	1195	9/9/05
M	N63790-00-0096	1205	1206	9/11/05
N	N63790-00-0132	1195	1191	1/19/06
P	N63790-00-0130	1205	1213	9/20/07
R	N63790-00-0095	1205	1202	9/7/05
S	N63790-00-0112	1205	1208	9/14/07

Table 2: Main Steam SRV As-Found Test results for the Last 10 Years					
Serial Number	Date Tested	Set Pressure (psig)	Test (psig)	Deviation (psig)	% Deviation
N63790-00-0019	3/30/1999	1195	1202	7	0.59
	3/24/2002	1195	1185	-10	-0.84
	4/22/2009	1195	1155	-40	-3.35
N63790-00-0020	3/25/2002	1205	1178	-27	-2.24
	4/22/2009	1205	1165	-40	-3.32
N63790-00-0021	4/6/2001	1195	1200	5	0.42
	3/21/2008	1195	1177	-18	-1.51
N63790-00-0022	4/1/1999	1205	1197	-8	-0.66
	3/24/2002	1205	1199	-6	-0.50
	4/29/2009	1205	1215	10	0.83
N63790-00-0023	3/30/2003	1205	1185	-20	-1.66
	3/22/2008	1205	1207	2	0.17
N63790-00-0024	**3/28/2003**	**1205**	**1196**	**-9**	**-0.75**
N63790-00-0025	3/30/2003	1205	1169	-36	-2.99
	3/21/2008	1205	1137	-68	-5.64
N63790-00-0026	3/31/2003	1195	1174	-21	-1.76
N63790-00-0027	3/24/2002	1195	1162	-33	-2.76
	4/22/2009	1195	1204	9	0.75
N63790-00-0028	4/6/2001	1195	1169	-26	-2.18
	3/16/2006	1195	1190	-5	-0.42
N63790-00-0029	4/1/1999	1205	1232	27	2.24
	3/26/2004	1195	1188	-7	-0.59
N63790-00-0030	4/13/2000	1195	1186	-9	-0.75
	3/16/2007	1195	1190	-5	-0.42

Table 2: Main Steam SRV As-Found Test results for the Last 10 Years					
Serial Number	Date Tested	Set Pressure (psig)	Test (psig)	Deviation (psig)	% Deviation
N63790-00-0031	3/31/2003	1195	1180	-15	-1.26
	3/17/2006	1195	1166	-29	-2.43
N63790-00-0032	4/6/1999	1205	1184	-21	-1.74
	3/25/2004	1205	1176	-29	-2.41
N63790-00-0033	3/31/2003	1195	1190	-5	-0.42
N63790-00-0034	3/11/2005	1195	1188	-7	-0.59
N63790-00-0081	4/6/2001	1205	1190	-15	-1.24
	3/15/2006	1195	1154	-41	-3.43
N63790-00-0082	3/31/2003	1205	1200	-5	-0.41
	3/21/2008	1205	1159	-46	-3.82
N63790-00-0083	3/28/2003	1175	1161	-14	-1.19
N63790-00-0084	3/28/2004	1195	1184	-11	-0.92
N63790-00-0085	4/14/2000	1175	1143	-32	-2.72
	3/9/2005	1175	1195	20	1.70
	4/23/2009	1175	1123	-52	-4.42
N63790-00-0086	3/29/1999	1195	1166	-29	-2.43
	3/28/2004	1175	1191	16	1.36
N63790-00-0087	4/5/2001	1195	1202	7	0.59
	3/17/2006	1205	1191	-14	-1.16
N63790-00-0088	4/7/2001	1205	1185	-20	-1.66
	3/22/2008	1205	1205	0	0.00
N63790-00-0089	4/7/2001	1205	1185	-20	-1.66
	3/16/2006	1205	1210	5	0.41
N63790-00-0090	3/27/2004	1205	1195	-10	-0.83

Table 2: Main Steam SRV As-Found Test results for the Last 10 Years					
Serial Number	Date Tested	Set Pressure (psig)	Test (psig)	Deviation (psig)	% Deviation
N63790-00-0091	3/29/2004	1205	1193	-12	-1.00
	4/23/2009	1205	1187	-18	-1.49
N63790-00-0092	3/31/1999	1195	1179	-16	-1.34
	3/30/2004	1195	1200	5	0.42
N63790-00-0093	4/14/2000	1205	1191	-14	-1.16
	3/10/2005	1205	1154	-51	-4.23
N63790-00-0094	3/30/1999	1205	1224	19	1.58
	3/26/2004	1205	1174	-31	-2.57
N63790-00-0095	4/12/2000	1205	1230	25	2.07
	3/11/2005	1205	1199	-6	-0.50
N63790-00-0096	4/13/2000	1205	1204	-1	-0.08
	3/9/2005	1205	1194	-11	-0.91
N63790-00-0112	3/26/2002	1205	1220	15	1.24
	3/15/2007	1205	1209	4	0.33
N63790-00-0113	4/6/2001	1175	1193	18	1.53
	3/21/2008	1175	1164	-11	-0.94
N63790-00-0128	3/23/2002	1175	1193	18	1.53
	3/15/2007	1175	1184	9	0.77
N63790-00-0129	4/12/2000	1205	1192	-13	-1.08
	3/16/2007	1205	1199	-6	-0.50
N63790-00-0130	3/29/1999	1205	1208	3	0.25
	3/24/2002	1205	1184	-21	-1.74
	3/15/2007	1205	1145	-60	-4.98
N63790-00-0131	4/4/2001	1205	1219	14	1.16
	3/15/2006	1205	1215	10	0.83
N63790-00-0132	4/12/2000	1195	1154	-41	-3.43

Table 2: Main Steam SRV As-Found Test results for the Last 10 Years					
Serial Number	Date Tested	Set Pressure (psig)	Test (psig)	Deviation (psig)	% Deviation
	3/10/2005	1195	1134	-61	-5.10
N63790-00-0133	3/24/2002	1195	1208	13	1.09
	3/14/2007	1195	1190	-5	-0.42

Attachment 1: Summary of As-Found Setpoint Failures Since Initial Operation

The data for the twenty-two (22) failed Main Steam SRV as-found setpoint tests (i.e., the Code tolerance of plus or minus 3% was exceeded) is summarized below:

- Twenty (20) SRV as-found setpoint tests failed on the low side (setpoint less than the -3% tolerance). The following summarizes the test data for these SRVs.

Serial Number	Date Tested	Set Pressure (psig)	Test (psig)	Deviation (psig)	% Deviation
N63790-00-0019	8/21/1985	1195	1158	-37	-3.10
	4/22/2009	1195	1155	-40	-3.35
N63790-00-0020	4/22/2009	1205	1165	-40	-3.32
N63790-00-0021	9/21/1996	1195	1159	-36	-3.01
N63790-00-0022	10/13/1987	1175	1136	-39	-3.32
N63790-00-0024	4/5/1995	1175	1133	-42	-3.57
N63790-00-0025	3/21/2008	1205	1137	-68	-5.64
N63790-00-0030	10/12/1987	1175	1139	-36	-3.06
N63790-00-0081	3/15/2006	1195	1154	-41	-3.43
N63790-00-0082	3/21/2008	1205	1159	-46	-3.82
N63790-00-0085	3/31/1992	1175	1109	-66	-5.62
	4/23/2009	1175	1123	-52	-4.42
N63790-00-0089	1/22/1993	1185	1147	-38	-3.21
N63790-00-0090	3/31/1992	1185	1143	-42	-3.54
N63790-00-0091	9/10/1986	1195	1155	-40	-3.35
N63790-00-0093	3/10/2005	1205	1154	-51	-4.23
N63790-00-0113	9/10/1987	1146	1094	-52	-4.54

Serial Number	Date Tested	Set Pressure (psig)	Test (psig)	Deviation (psig)	% Deviation
N63790-00-0130	3/15/2007	1205	1145	-60	-4.98
N63790-00-0132	4/12/2000	1195	1154	-41	-3.43
	3/10/2005	1195	1134	-61	-5.10

The cause of these failures was determined to be setpoint drift.

- Two (2) SRV as-found setpoint tests failed on the high side (setpoint greater than the +3% tolerance). The following summarizes the test data for these SRVs.

Serial Number	Date Tested	Set Pressure (psig)	Test (psig)	Deviation (psig)	% Deviation
N63790-00-0094	6/18/1991	1205	1244	39	3.24
N63790-00-0130	12/14/1990	1185	1235	50	4.22

No high side as-found setpoint test failures have occurred since flexi discs have been installed in the SRVs at Susquehanna SES.

NOTE: This SRV failed the Code as-found test low once (1995). The as-found test results for this SRV is shown in the table below.

Serial Number	Date Tested	Set Pressure (psig)	Test (psig)	Deviation (psig)	% Deviation
N63790-00-0024	4/28/1985	1175	1146	-29	-2.47
	2/26/1988	1175	1185	10	0.85
	10/5/1989	1175	1169	-6	-0.51
	6/14/1991	1175	1146	-29	-2.47
	4/5/1995	1175	1133	-42	-3.57
	4/30/1998	1175	1196	21	1.79
	3/28/2003	1205	1196	-9	-0.75