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BYRAM,R.G. Pennsylvania Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
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SUBJECT: Informs of rev to GL 89-10 program w/respect to dynamically testing of eight valves in RCIC & HPIC sys,in accordnace w/ NRC guidance on GL 89-10,Suppl 3.

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NOTES: 05000387

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JAN 1 9 1995

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SUSQUEHANNA STEAM ELECTRIC STATION
UPDATE TO THE GENERIC LETTER 89-10
COMPLETION PLAN (SUPERSEDES PLA-4243)
PLA-4251 FILE R41-2

Docket Nos. 50-387
and 50-388

References: *Letter, PLA-4124, "Revision to Generic Letter 89-10 Completion Plan," dated April 29, 1994, from R. G. Byram (PP&L) to C.L. Miller (NRC)*

Letter, PLA-4163, "Update to the Generic Letter 89-10 Completion Plan," dated July 11, 1994, from R. G. Byram (PP&L) to C.L. Miller (NRC)

NOTE: This letter supersedes PLA-4243, dated January 16, 1995, in its entirety.

Dear Sir:

In accordance with NRC's guidance on Generic Letter 89-10 Supplement 3 valves, we are informing you that we have revised our Generic Letter 89-10 program with respect to dynamically testing of eight (8) of these valves (HV-149 (249)-007 and HV-149 (249)-008 in the RCIC System and HV-155 (255)-002 and HV-155 (255)-003 in the HPCI System). These valves have been deemed non-practicable for dynamic testing. Valves at Susquehanna SES are deemed non-practicable to test 1) if a meaningful percentage of the design basis ΔP and/or flow for the valve cannot be achieved or 2) if diagnostic equipment cannot be used during dynamic testing and the valve is unable to be tested at the design basis ΔP and flow of that valve.

The valves in the HPCI Systems in both Units were deemed non-practicable to test based upon comparisons of dynamic tests performed at another plant and dynamic testing performed on the Unit I valves. The test results showed that the ΔP that could be obtained across these valves was not high enough to draw meaningful conclusions.

The valves in the RCIC Systems in both Units were deemed non-practicable to test based upon comparisons of dynamic tests performed at another plant. This comparison showed that the ΔP that could be obtained across these valves was not high enough to draw meaningful conclusions. The comparison methodology used for the RCIC System valve comparison was the same as used for HPCI System valves.

In addition to the above changes our letter (PLA-4163) identified a revision to the dynamic testing schedule of the RCIC pump minimum flow bypass valve (FV149F019) pursuant to Generic Letter 89-10. This PLA stated that the RCIC valve testing was scheduled to be completed prior to the end of the 4th quarter of 1994. This testing was not achieved as originally scheduled.

Mr. M. J. Buckley (NRC - Region I) was contacted by PP&L on December 29, 1994, and informed that the testing of this valve would not be performed by the scheduled date. At that time Mr. Buckley was told that the dynamic testing would be completed prior to the Program completion dated of December 31, 1995.

The RCIC minimum flow bypass valve in Unit 1 and its counterpart on Unit 2 were statically tested during their respective refueling outages. As these are rising-rotating valves, both thrust and torque data were taken to fully characterize the valve response. The difficulty in obtaining and analyzing test data in the static condition requires further refinement of the techniques prior to attempting to perform a dynamic test. The rising-rotating design coupled with being a globe valve presents additional challenges. Since this is a local leak rate tested valve on a safety system that can only be tested with the unit at 100% power while in an LCO, it is required that the evolution be well planed and executed to minimize out of service time and not jeopardize the operation of the unit. The static test results have indicated an acceptable margin to indicate the valve is operable under all defined design basis conditions. Deferral of this testing also defers the analysis for the Unit 2 valve.

The following is a summary of the status as of December 20, 1994, of the activities that are necessary to complete our Generic Letter 89-10 Program:

- The design basis for the operation of each MOV has been completed and includes flows, pressures, and degraded voltages for normal and abnormal events in the safety directions (open and/or closed) and weak link analysis or seismic qualification calculations.

- The correct switch settings have been established for valve opening and/or closing.

- The MOV configuration has been verified in the field; including actuator, spring pack, gearing, stem and motors.

- The proper limit switch settings have been verified by physical inspection.

- The stem lubrication has been insured to be adequate by application of grease or by inspection.

- The torque switch settings have been set in the field to meet Generic Letter 89-10 acceptance criteria with the exception of the following valves:

  HV-151F009
  HV-151F023

  These valves will be set-up by December 31, 1995.

  See Attachments A and C for the valves' physical description and safety function respectively.

- All butterfly valves have been differential pressure tested.

- One butterfly valve out of each group of similar valves (except HV-21144A and HV-21144B) has been dynamically tested with diagnostics (a total of 5). HV-21144A and HV-21144B have been dynamically tested without diagnostics.

- Those rising stem valves that remain to be tested (both statically and dynamically) are shown in Attachment A. These valves will be tested by December 31, 1995.

The following table shows the current status of the valve groupings (excluding butterfly valves and the valves in the MSIV-LCS) in our Generic Letter 89-10 program:

GROUP	OPERABILITY ASSESSMENT	TOTAL	REMAINING TO BE TESTED
In-Situ Dynamic Tests w/Diags. w/o Diags.	Test Test	33 4	3 (Notes 3 & 5)
Diff. Press. = 0	Note 1	20	
Excessive Margins	Note 1	12	
Globes - Flow under Seat and Open Only Safety Function	Note 1	2	
Similarity to In-Situ Tested Valve	Similarity Analysis	7 (Note 5)	
NON-TESTABLES	Note 2	92 (Notes 4 & 5)	
TOTAL		170	

Note 1: Static test sufficient to determine operability.
Note 2: Non-Testables rely on either EPRI tests, other utility tests, EPRI methodology, or engineering analysis to assess operability.
Note 3: Physical description contained in Attachment A.
Note 4: Physical description contained in Attachment B.
Note 5: Safety function description provided in Attachment C.

The ESW butterfly valves associated with Diesel Generator E remain in the program.

As discussed during our NRC Region I Phase 2 inspection, the valves in the MSIV-LCS are being removed from service from Unit 2 during the refueling outage scheduled for the fall of 1995 and from Unit 1 during the refueling outage scheduled for the fall of 1996. If these valves are not removed from service during these refueling outages, they will be tested per our Generic Letter 89-10 Program.

This letter supersedes the above referenced correspondence on the status of our Generic Letter 89-10 Program.

If you have any questions or comments, please contact Mr. C.T. Coddington at (610) 774-7915.

Very truly yours,

R. G. Byram

Attachments

cc: NRC Region I
Ms. M. Banerjee, NRC Sr. Resident Inspector-SSES
Mr. C. Poslusny, Jr., NRC Sr. Project Manager-OWFN

ATTACHMENT A

RISING STEM VALVES WITH STATIC RETEST REMAINING

VALVE TAG #	SYSTEM	TYPE	SIZE	SAFETY FUNCTION	RISK PRIORITY	MAXIMUM DP (PSID) O	MAXIMUM DP (PSID) C	MAXIMUM FLOW (GPM)*
HV-151F007A	RHR	GT	6	O/C	3	498	485	2000
HV-151F009	RHR	GT	20	C	3	126	126	25721
HV-151F023	RHR	GB	6	C	3	404	306	500

RISING STEM VALVES WITH DYNAMIC TEST REMAINING

VALVE TAG #	SYSTEM	TYPE	SIZE	SAFETY FUNCTION	RISK PRIORITY	MAXIMUM DP (PSID) O	MAXIMUM DP (PSID) C	MAXIMUM FLOW (GPM)*
FV-149F019	RCIC	GB-RR	2	O/C	3	1335	1335	75
HV-152F005A	CS	GT	12	O/C	3	468	342	7900
HV-155F001	HPCI	GT	10	O	1	1187	0	220000**

RISK PRIORITY SCHEME

PRIORITY	DEFINITION
1	Causes the loss of a safety function
2	Causes loss of 1 of 2 systems used for a safety function.
3	Not 1 or 2, but within Generic Letter 89-10 scope.

** lbs/hr steam flow

ATTACHMENT B

NON-TESTABLE VALVES

VALVE TAG NUMBER	SYSTEM	VALVE TYPE	VALVE SIZE	SAFETY FUNCTION	RISK PRIORITY	MAXIMUM DP (PSIG) O	MAXIMUM DP (PSIG) C	MAXIMUM FLOW (GPM)*
HV 112F075A	RHRSW	GT	6	O	2	33.3	0	0
HV 112F075B	RHRSW	GT	6	O	2	33.3	0	0
HV 11313	RBCCW	GT	4	C	3	42	85	1600
HV 11314	RBCCW	GT	4	C	3	42	85	1600
HV 11345	RBCCW	GT	4	C	3	42	85	1600
HV 11346	RBCCW	GT	4	C	3	42	85	1600
HV 12603	CIG	GB	2	C	3	0	60	40
HV 143F031A	Recirc	GT	28	C	2	36	200	19500
HV 143F031B	Recirc	GT	28	C	2	36	200	19500
HV 143F032A	Recirc	GT	4	C	3	0	1066	591
HV 143F032B	Recirc	GT	4	C	3	0	1066	591
HV 144F001	RWCU	GT	6	C	3	1051	1051	472
HV 144F004	RWCU	GT	6	C	3	1051	1051	472
HV-149F007	RCIC	GT	4	C	3	1038	1175	87900
HV-149F008	RCIC	GT	4	C	3	1038	1175	87900
HV 149F010	RCIC	GT	6	C	3	29	29	0
HV 149F013	RCIC	GT	6	O/C	3	1220	400	600
HV 149F031	RCIC	GT	6	O/C	3	36	36	600
HV 149F059	RCIC	GT	10	C	3	0	16	0
HV 149F060	RCIC	GB-RR	2	C	3	0	16	0
HV 151F004A	RHR	GT	24	O/C	3	6	41	100
HV 151F004B	RHR	GT	24	O/C	3	6	41	100
HV 151F004C	RHR	GT	24	O/C	3	6	41	100
HV 151F004D	RHR	GT	24	O/C	3	6	41	100
HV 151F008	RHR	GT	20	C	3	1068	131	25721
HV 151F009	RHR	GT	20	C	3	126	126	25721
HV 151F015A	RHR	GT	24	O/C	2	491	131	21300
HV 151F015B	RHR	GT	24	O/C	2	491	131	21300
HV 151F016A	RHR	GB	12	O/C	2	312	312	10000
HV 151F016B	RHR	GB	12	O/C	2	312	312	10000
HV 151F017A	RHR	GB-DG	20	O/C	2	347	347	21300
HV 151F017B	RHR	GB-DG	20	O/C	2	347	347	21300
HV 151F021A	RHR	GT	12	O/C	2	45	0	0
HV 151F021B	RHR	GT	12	O/C	2	45	0	0
HV 151F027A	RHR	GB	6	O/C	3	270	329	500
HV 151F027B	RHR	GB	6	O/C	3	270	329	500
HV 152F001A	CS	GT	16	C	3	16	23	100
HV 152F001B	CS	GT	16	C	3	16	23	100
HV-155F002	HPCI	GT	10	C	1	1038	1175	672000**
HV-155F003	HPCI	GT	10	C	1	1038	1175	672000**
HV 155F004	HPCI	GT	16	O/C	3	33	33	0

ATTACHMENT B (continued)

VALVE TAG NUMBER	SYSTEM	VALVE TYPE	VALVE SIZE	SAFETY FUNCTION	RISK PRIORITY	MAXIMUM DP (PSID) O	MAXIMUM DP (PSID) C	MAXIMUM FLOW (GPM)*
HV 155F006	HPCI	GT	14	O/C	1	1223	282	5000
HV 155F042	HPCI	GT	16	O/C	3	30	30	5000
HV 155F066	HPCI	GT	20	C	1	0	16	0
HV 15766	SPCU	GT	6	C	3	15	50	295
HV 15768	SPCU	GT	6	C	3	15	50	295
HV 212F075A	RHRSW	GT	6	O	2	33.3	0	0
HV 212F075B	RHRSW	GT	6	O	2	33.3	0	0
HV 21313	RBCCW	GT	4	C	3	42	85	1600
HV 21314	RBCCW	GT	4	C	3	42	85	1600
HV 21345	RBCCW	GT	4	C	3	42	85	1600
HV 21346	RBCCW	GT	4	C	3	42	85	1600
HV 22603	CIG	GB	2	C	3	0	60	40
HV 243F031A	Recirc	GT	28	C	2	36	200	19500
HV 243F031B	Recirc	GT	28	C	2	36	200	19500
HV 243F032A	Recirc	GT	4	C	3	0	1066	591
HV 243F032B	Recirc	GT	4	C	3	0	1066	591
HV 244F001	RWCU	GT	6	C	3	1051	1051	472
HV 244F004	RWCU	GT	6	C	3	1051	1051	472
HV-249F007	RCIC	GT	4	C	3	1038	1175	87900
HV-249F008	RCIC	GT	4	C	3	1038	1175	87900
HV 249F010	RCIC	GT	6	C	3	29	29	0
HV 249F013	RCIC	GT	6	O/C	3	1220	400	600
HV 249F031	RCIC	GT	6	O/C	3	36	36	600
HV 249F059	RCIC	GT	10	C	3	0	16	0
HV 249F060	RCIC	GB-RR	2	C	3	0	16	0
HV 251F004A	RHR	GT	24	O/C	3	6	41	100
HV 251F004B	RHR	GT	24	O/C	3	6	41	100
HV 251F004C	RHR	GT	24	O/C	3	6	41	100
HV 251F004D	RHR	GT	24	O/C	3	6	41	100
HV 251F008	RHR	GT	20	C	3	1068	131	25700
HV 251F009	RHR	GT	20	C	3	126	126	25700
HV 251F015A	RHR	GT	24	O/C	2	491	131	21300
HV 251F015B	RHR	GT	24	O/C	2	491	131	21300
HV 251F016A	RHR	GB	12	O/C	2	312	312	10000
HV 251F016B	RHR	GB	12	O/C	2	312	312	10000
HV 251F017A	RHR	GB-DG	20	O/C	2	347	347	21300
HV 251F017B	RHR	GB-DG	20	O/C	2	347	347	21300
HV 251F021A	RHR	GT	12	O/C	2	45	0	0
HV 251F021B	RHR	GT	12	O/C	2	45	0	0
HV 251F027A	RHR	GB	6	O/C	3	270	329	500
HV 251F027B	RHR	GB	6	O/C	3	270	329	500
HV 252F001A	CS	GT	16	C	3	16	23	100
HV 252F001B	CS	GT	16	C	3	16	23	100
HV-255F002	HPCI	GT	10	C	1	1038	1175	672000**

ATTACHMENT B (continued)

VALVE TAG NUMBER	SYSTEM	VALVE TYPE	VALVE SIZE	SAFETY FUNCTION	RISK PRIORITY	MAXIMUM DP (PSID) O	MAXIMUM DP (PSID) C	MAXIMUM FLOW (GPM)*
HV-255F003	HPCI	GT	10	C	1	1038	1175	672000**
HV 255F004	HPCI	GT	16	O/C	3	33	33	0
HV 255F006	HPCI	GT	14	O/C	1	1223	287	5000
HV 255F042	HPCI	GT	16	O/C	3	30	30	5000
HV 255F066	HPCI	GT	20	C	1	0	16	0
HV 25766	SPCU	GT	6	C	3	15	50	295
HV 25768	SPCU	GT	6	C	3	15	50	295

* Worst case
** lbs steam flow

ATTACHMENT C

SAFETY FUNCTION DESCRIPTIONS

HV-112F075A HV-112F075B HV-212F075A HV-212F075B	These valves are the RHR/RHRSW cross-tie valves. These valves are normally closed and their safety function is to open to provide a flowpath from the RHRSW system to the RPV or containment, via the RHR system, for RPV/containment flooding or suppression pool make-up.
HV-11313 HV-11314 HV-11345 HV-11346 HV-21313 HV-21314 HV-21345 HV-21346	These valves are containment isolation valves for the RBCCW to the reactor recirculation pump seal and motor oil coolers. These valves' safety function is to close for containment isolation on a high drywell pressure or low reactor level 1 signal.
HV-12603 HV-22603	These valves are the Containment Instrument Gas compressor suction inboard containment isolation valves. These valves are normally open to provide a suction path for the containment instrument gas compressors. The valves' safety function is to close on a containment isolation signal.
HV-143F031A HV-143F031B HV-243F031A HV-243F031B	These valves are the reactor recirculation pump discharge valves. These valves are normally open to provide a discharge path for the recirculation system. The safety function of these valves is to close on a LOCA plus low reactor pressure signal, to assure the proper alignment for LPCI injection.

HV-143F032A HV-143F032B HV-243F032A HV-243F032B	These valves are the reactor recirculation pump discharge bypass valves. These valves are normally open and provide a discharge path for the recirculation system during pump start-up. The safety function of these valves is to close on a LOCA plus low reactor pressure signal, to assure the proper alignment for LPCI injection.
HV-144F001 HV-244F001	These valves are the RWCU inboard containment isolation valves. These valves are normally open and their safety function is to close on a reactor low level signal or on indication of a RWCU system break from the steam leak detection system.
HV-144F004 HV-244F004	These valves are the RWCU outboard containment isolation valves. These valves are normally open and their safety function is to close on a reactor low level signal, on indication of a RWCU system break from the steam leak detection system, on initiation of Standby Liquid Control system, and on RWCU nonregenerative heat exchanger high outlet temperature.
HV-149F007 HV-149F008 HV-249F007 HV-249F008	These valves are the RCIC steam supply line to the RCIC turbine containment isolation valves. These valves are normally open for RCIC operation and their safety function is to close for containment isolation when RCIC is not operating.
HV-149F010 HV-249F010	These valves are the RCIC suction valves from the condensate storage tank and are normally open. These valves' safety function is to close on suction transfer from the CST to the suppression pool.

HV-149F013 HV-249F013	These valves are the RCIC injection shutoff containment isolation valves. These valves are normally closed and their safety function is to open on RCIC initiation, and to close for containment isolation when RCIC is not operating.
FV-149F019 FV-249F019	These valves are the RCIC minimum flow bypass valves. These valves are normally closed. The safety function is to open to provide minimum flow to the RCIC pump, to close to ensure that sufficient RCIC flow is sent to the reactor pressure vessel, and to provide containment isolation.
HV-149F031 HV-249F031	These valves are the RCIC suppression pool suction containment isolation valves. These valves are normally closed and will open on low level conditions in the CST. The valves' safety function is to open on automatic RCIC suction transfer from CST to suppression pool, and to remote manually close for containment isolation.
HV-149F059 HV-249F059	These valves are the containment isolation valves on the RCIC turbine exhaust to the suppression pool. These valves are normally open and their safety function is to remote manually close if required to provide long term containment isolation.
HV-149F060 HV-249F060	These valves are the RCIC barometric condenser vacuum pump discharge to the suppression pool containment isolation valves. These valves are normally open and their safety function is to perform a manual containment isolation function.

HV-151F004A HV-151F004B HV-151F004C HV-151F004D HV-251F004A HV-251F004B HV-251F004C HV-251F004D	These valves are the RHR suppression pool suction manual containment isolation valves. These valves are normally open to provide a suction path for LPCI and their safety function is to remote manually close to provide long term containment isolation.
HV-151F007A	This valve is the RHR pump minimum flow bypass valve. This valve is normally open and its safety function is to open to prevent damage to the pumps during low flow condition and to close when sufficient flow exists to assure maximum LPCI flow to the vessel.
HV-151F008 HV-251F008	These valves are the shutdown cooling supply outboard containment isolation valves. These valves are normally closed and are opened for shutdown cooling mode of RHR. The safety function of these valves is to close on a shutdown cooling isolation signal.
HV-151F009 HV-251F009	These valves are the shutdown cooling supply inboard containment isolation valves. These valves are normally closed and are opened for shutdown cooling mode of RHR. The safety function of these valves is to close on a shutdown cooling isolation signal.
HV-151F015A HV-151F015B HV-251F015A HV-251F015B	These valves are the RHR injection outboard containment isolation valves. These valves are normally closed and their safety function is to open on LPCI initiation during LOCA, and to close on low level 3 when in shutdown cooling.

HV-151F016A HV-151F016B HV-251F016A HV-251F016B	These valves are the drywell spray header outboard containment isolation valves. These valves are normally closed. The safety function of these valves is to open for containment spray and to close for containment isolation.
HV-151F017A HV-151F017B HV-251F017A HV-251F017B	These valves are the RHR outboard injection control valves. These valves are normally open and their safety function is to open and close as required to control injection flow during LPCI and containment cooling modes of RHR.
HV-151F021A HV-151F021B HV-251F021A HV-251F021B	These valves are the drywell spray header inboard containment isolation valves. These valves are normally closed. The safety function of these valves is to open for containment spray and to subsequently close for containment isolation.
HV-151F023	This valve is the RHR head spray outboard containment isolation valve. This valve is normally closed and its safety function is to close, if open, on a reactor low level 3, RHR isolation, High Drywell pressure, or reactor pressure greater than allowable for shutdown cooling.
HV-151F027A HV-151F027B HV-251F027A HV-251F027B	These valves are the suppression chamber spray header inboard containment isolation valves. These valves are normally closed. The safety function of these valves is to open for suppression chamber spray and to close to provide containment isolation.

HV-152F001A HV-152F001B HV-252F001A HV-252F001B	These valves are the Core Spray suppression pool suction manual containment isolation valves. These valves are normally open to provide a suction path for core spray injection and their safety function is to remote manually close to provide long term containment isolation.
HV-152F005A	This valve is the Core Spray injection inboard containment isolation valve. This valve is normally closed and its safety function is to open on Core Spray initiation and low reactor pressure, and to close to provide containment isolation.
HV-155F001	This valve is the HPCI injection valve. This valve is normally open, and the safety function of this valve is to open on a HPCI injection signal.
HV-155F002 HV-255F002	This valve is the HPCI steam supply line inboard containment isolation valve. This valve is normally open, and the safety function of this valve is to close on a HPCI isolation signal.
HV-155F003 HV-255F003	This valve is the HPCI steam supply line outboard containment isolation valve. This valve is normally open, and the safety function of this valve is to close on a HPCI isolation signal.
HV-155F004 HV-255F004	These valves are the HPCI suction valves from the condensate storage tank and are normally open. These valves' safety function is to automatically close on suction transfer from the CST to the suppression pool.

HV-155F006 HV-255F006	These valves are the HPCI injection shutoff containment isolation valves. These valves are normally closed and their safety function is to open on HPCI initiation, and to close for containment isolation when HPCI is not operating.
HV-155F042 HV-255F042	These valves are the HPCI suppression pool suction containment isolation valves. These valves are normally closed and will open on low level conditions in the CST or high water level in the suppression pool. The valves' safety function is to open on automatic HPCI suction transfer from CST to suppression pool, and to remote manually close for containment isolation or realignment of HPCI suction to the CST.
HV-155F066 HV-255F066	These valves are the containment isolation valves on the HPCI turbine exhaust to the suppression pool. These valves are normally open and their safety function is to remote manually close if required to provide long term containment isolation.
HV-15766 HV-25766	These valves are the suppression pool cleanup system inboard containment isolation valves. These valves are normally closed and their safety function is to close, if open, on a LOCA signal.
HV-15768 HV-25768	These valves are the suppression pool cleanup system outboard containment isolation valves. These valves are normally closed and their safety function is to close, if open, on a LOCA signal.