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10CFR 50.73

November 2, 2012

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

Peach Bottom Atomic Power Station (PBAPS) Units 2
Renewed Facility Operating License No. DPR-44
NRC Docket Nos. 50-277

Subject: Licensee Event Report (LER) 2-12-001

Enclosed is a Licensee Event Report concerning a condition prohibited by Technical Specifications involving Safety Relief Valves (SRVs) and one Safety Valve (SV) that did not meet their Technical Specification ± 1% set point tolerance when tested in the laboratory. In accordance with NEI 99-04, the regulatory commitment contained in this correspondence is to restore compliance with the regulations. The specific methods that are planned to restore and maintain compliance are discussed in the LER. If you have any questions or require additional information, please do not hesitate to contact us.

Sincerely,

Patrick D. Navin
Plant Manager
Peach Bottom Atomic Power Station

PDN/djf/IR 1418320 / 1417767 / R1181769

Attachment

cc: US NRC, Administrator, Region I
US NRC, Senior Resident Inspector
R. R. Janati, Commonwealth of Pennsylvania
S. Grey, State of Maryland
P. Steinhauer, PSE&G, Financial Controls and Co-owner Affairs
INPO Records Center

CCN: 12-70

IE22
NRR

NRC FORM 366 (10-2010) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2013

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

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4. TITLE

Laboratory Analysis Identifies Safety Relief Valves and Safety Valve Set Point Deficiencies

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
09	25	2012	12	- 001 -	00	11	02	2012	FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE

N

10. POWER LEVEL

0%

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☒ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER *(Include Area Code)*
PBAPS Unit 2, James M. Armstrong, Regulatory Assurance Manager	717-456-3351

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
X	SB	RV	T020	Y	X	SB	RV	D345	Y

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

Based on information received from a laboratory performing Safety Relief Valve (SRV) / Safety Valve (SV) as-found testing, Site Engineering personnel determined on 9/25/12 that SRV / SV setpoint deficiencies existed with six SRVs and one SV that were in place during the Unit 2 19th operating cycle. The SRVs / SV were determined to have their as-found setpoints outside of the Technical Specification allowable ± 1% tolerance. The six SRVs outside of their Technical Specification (TS) allowable setpoint range were within the ASME Code allowable ± 3% tolerance. The one SV outside of its TS allowable setpoint range also exceeded the ASME Code allowable ± 3% tolerance. The cause of the SRVs / SV being outside of their allowable as-found setpoints is due to setpoint drift. The SRVs / SV were replaced with refurbished SRVs / SV for the 20th Unit 2 operating cycle. There were previous LERs identified involving SRVs / SVs exceeding their Technical Specification ± 1% setpoint requirement.

There were no actual safety consequences associated with this event.

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NARRATIVE

Unit Conditions Prior to the Event

Unit 2 was defueled to support its 19th Refueling Outage (P2R19) when the event was discovered on 9/25/12 based on as-found testing data from a testing laboratory. The condition was discovered during routine laboratory as-found testing for Safety Relief Valves (SRVs) and a Safety Valve (SV) removed during the 19th Unit 2 Refueling Outage. There were no other structures, systems or components out of service that contributed to this event.

Description of the Event

On 9/25/12, Site Engineering personnel determined that SRV / SV setpoint deficiencies existed with six SRVs and one SV that were in place during the 19th Unit 2 operating cycle. This was based on information received from a laboratory performing SRV (EIIS: RV) and SV (EIIS: RV) as-found testing, The seven SRVs / SV were removed during the 19th Unit 2 Refueling Outage and were sent to an off-site laboratory for as-found testing and routine refurbishment. Six SRVs and one SV were determined to have their as-found setpoints outside of the Technical Specification (TS) allowable ± 1% tolerance. All six SRVs were within the ASME Code allowable ± 3% tolerance. The one SV outside of its TS allowable setpoint range also exceeded the ASME Code allowable ± 3% tolerance. The seven valves' as-found setpoints were as follows:

Type	ID	S/N	Required TS Setpoint (psig)	As-Found Setpoint (psig)	% Outside of TS Nominal Setpoint
SRV	71A	24	1143 - 1167	1121	-2.94%
SRV	71D	16	1124 - 1146	1118	-1.50%
SRV	71E	81	1124 - 1146	1103	-2.82%
SRV	71F	19	1124 - 1146	1116	-1.67%
SRV	71G	82	1134 - 1156	1127	-1.57%
SRV	71H	17	1134 - 1156	1111	-2.97%
SV	70B	BL-1095	1247 - 1273	1303	+3.41%

The six SRVs and the one SV were replaced with refurbished SRVs / SV for the 20th Unit 2 operating cycle.

Two of the six SRVs (SRV S/N 24 and S/N 82) were also Automatic Depressurization System (ADS) valves. The setpoint drift had no impact on the ADS or manual function of the valves.

Cause of the Event

The cause of the SRVs / SV being outside of their allowable as-found setpoints is due to setpoint drift.

Additional evaluations of the cause(s) of the SRVs / SV setpoint deficiencies are being performed in accordance with the site Corrective Action Program.

Analysis of the Event

There were no actual safety consequences associated with this event.

This report is being submitted pursuant to:

10CFR 50.73(a)(2)(i)(B) – Condition Prohibited by Technical Specifications – Technical Specification Limiting Condition for Operation (LCO) 3.4.3 requires that 11 of the 13 SRVs / SVs be operable during operational Modes 1, 2, and 3. Contrary to this requirement, six SRVs and one SV were found with setpoints outside of the Technical Specification setpoint requirements.

10CFR 50.73(a)(2)(vii) – Common Cause Failure of Multiple Trains being Inoperable – Six SRVs and one SV were considered inoperable as a result of exceeding their allowable setpoint range based on laboratory testing. Therefore, this occurrence is considered as a common cause failure of multiple independent trains being inoperable.

The ASME Boiler and Pressure Vessel Code requires that the Reactor Pressure Vessel (EIIS: RCT) be protected from overpressure during upset conditions by self-actuated relief valves. As part of the nuclear pressure relief system, the size and number of SRVs and SVs are selected such that the peak pressure in the nuclear system will not exceed the ASME Code limits for the Reactor Coolant Pressure Boundary. There exists a total of 13 SRVs / SVs installed on the four Main Steam (EIIS: SB) Lines. The eleven installed SRVs exhaust steam through discharge lines to a point below the minimum water level in the Suppression Pool. The two installed SVs discharge steam directly to the Drywell. The SRVs and SVs are located on the four main steam lines (EIIS: SB) within Primary Containment. The SRVs are 'three-stage' valves consisting of a main valve disc and piston (third stage) operated by a second stage disc and piston displaced by either a first stage pressure-sensing pilot (for overpressure protection) or a pneumatically-operated mechanical push rod (for the ADS function or for remote-manual operation). The SVs are direct-acting, spring loaded relief valves.

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Analysis of the Event, continued

There were a total of seven SRVs and one SV initially removed for testing and replacement during the 19th Refueling Outage. Technical Specification Limiting Condition for Operation 3.4.3 requires 11 of the 13 total SRVs / SVs to be operable to provide the reactor coolant system overpressure safety function. The safety function of any combination of 11 SRVs and SVs are required to satisfy the assumptions of the safety analyses. During the Unit 2 Cycle 19 operations, there were no plant transients that required automatic or manual SRV / SV operation. The as-found setpoints for the six SRVs that tested outside of their Technical Specification allowable range were low. However, all six SRVs outside of their Technical Specification allowable setpoint range were within the ASME Code allowable ± 3% tolerance. Because the SRV as-found set points were on the low side, there was no loss of the TS 3.4.3 overpressure safety function for these valves. The one SV outside of its TS allowable range also exceeded the ASME Code allowable ± 3% tolerance. Since only 11 of the 13 SRVs / SVs are required to be operable, the 70B SV did not impact the TS 3.4.3 safety function. Two of the six SRVs (SRV S/N 82 and S/N 24) were also Automatic Depressurization System (ADS) valves. The setpoint drift had no impact on the ADS or manual function of the valves.

The event is not considered to be risk significant.

Corrective Actions

The six SRVs and the one SV were replaced with refurbished SRVs / SV for the 20th Unit 2 operating cycle. Since the 70B SV exceeded the ± 3% SV tolerance, the other SV (70A) was removed and sent for laboratory testing in accordance with the ASME code. The 70A SV was replaced with a refurbished SV for the 20th Unit 2 operating cycle.

A licensing change to revise the SRV / SV set point tolerance to ± 3% is planned to be submitted to the NRC in 2013.

Other actions will be pursued, as necessary, to address causes determined in accordance with the site Corrective Action Program.

Previous Similar Occurrences

There were four previous LERs identified involving SRVs / SVs exceeding their Technical Specification ± 1% setpoint requirement. LER 2-10-03 reported two SRVs and one SV having their as-found setpoints in excess of the TS allowable ± 1% tolerance. LER 3-07-01 reported two SRVs and one SV having their as-found setpoints in excess of the TS allowable ± 1% tolerance. LER 2-06-02 reported one SV having its as-found setpoints in excess of the TS allowable ± 1% tolerance. LER 3-05-04 reported a situation involving four SRVs having their as-found setpoints in excess of the TS allowable ± 1% tolerance.

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NARRATIVE

Previous Similar Occurrences, continued

The previous SRV / SV as-found setpoints were all within the ± 3% ASME code allowable setpoint tolerance. Completed corrective actions addressing setpoint drift for these previous events involved replacement of the previous SRVs with different SRVs and therefore, would not have been expected to prevent this event. The corrective action discussed in LER 2-10-03 to revise the TS to change the SRV/SV tolerance from ± 1% to ± 3% is not yet complete. The TS change request is expected to be submitted in 2013.