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JUN 14 2010

PSEG
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10CFR50.73

LR-N10-0208

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington DC 20555-001

LER 272/2010-001
Salem Nuclear Generating Station Unit 1
Facility Operating License No. DPR-70
NRC Docket No. 50-272

SUBJECT: Automatic Start of the 1C Emergency Diesel Generator (EDG)

This Licensee Event Report, "Automatic Start of the 1C Emergency Diesel Generator (EDG)," is being submitted pursuant to the requirements of the Code of Federal Regulations 10 CFR 50.73 (a)(2)(iv)(A), "any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B)."

The attached LER contains no commitments. Should you have any questions or comments regarding this submittal, please contact Mr. Brian Thomas at 856-339-2022.

Sincerely,

Carl J. Fricker
Site Vice President – Salem

Attachments (1)

IE22
NRR

JUN 1 4 2010

cc Mr. S. Collins, Administrator, Region I, NRC
Mr. R. Ennis, Licensing Project Manager – Salem, NRC
Mr. D. Schroeder, USNRC Senior Resident Inspector, Salem (X24)
Mr. P. Mulligan, Manager IV, NJBNE
L. Marabella, Corporate Commitment Tracking Coordinator
H. Berrick, Salem Commitment Tracking Coordinator

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2010

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 Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@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)

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4. TITLE Automatic Start of the 1C Emergency Diesel Generator (EDG)

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
04	16	2010	2010	0 0 1	0	06	14	2010		DOCKET NUMBER

9. OPERATING MODE

6

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)
Brian Thomas, Senior Compliance Engineer	(856) 339 -2022

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
D	EB	33	G080	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)*

On April 16, 2010, at 1641 hours, the 1C 4160 volt vital bus lost power. Surveillance testing was being performed to demonstrate the transfer of the 1C 4160 volt vital bus from one offsite power infeed to the second offsite power infeed. The 1C Emergency Diesel Generator (EDG) automatically started but the EDG output breaker did not close per design. Abnormal operating procedure S1.OP-AB.4KV-0003 was entered for loss of power to the 1C 4160 volt vital bus. Fuel movement was in progress at the time of the event and was suspended.

The unexpected start of the 1C EDG was the result of the failure of the 13CSD breaker auxiliary position switch (52STA switch). The failure of the 52STA switch was the result of binding caused by misadjustment of the gap between the breaker and the 52STA switch assembly. The misadjustment was the result of unclear procedural guidance for measuring the breaker plunger gap. Corrective actions consist of replacement of the 13CSD 52STA switch, proper adjustment of the breaker plunger gap, inspection of other 4160 volt infeed breaker plunger gaps, and procedure revisions to improve the guidance for measuring breaker plunger gaps.

This report is made in accordance with 10CFR50.73 (a)(2)(iv)(A), "any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B)."

NARRATIVE

PLANT AND SYSTEM IDENTIFICATION

Westinghouse – Pressurized Water Reactor (PWR/4)

4160 Volt Safety Related Bus {EB/-}
Emergency Diesel Generator (EDG) {EK/-}

* Energy Industry Identification System {EIIS} codes and component function identifier codes appear as {SS/CCC}

IDENTIFICATION OF OCCURRENCE

Event Date: April 16, 2010

Discovery Date: April 16, 2010

CONDITIONS PRIOR TO OCCURRENCE

Salem Unit 1 was in Mode 6 (Refueling) at 0% reactor power with movement of irradiated fuel in progress during the 1R20 refueling outage. The 1B EDG was out of service for planned maintenance.

DESCRIPTION OF OCCURRENCE

On April 16, 2010, at 1641 hours, the 1C 4160 volt vital bus {EB/-} lost power during the performance of surveillance testing. Surveillance testing was being performed to demonstrate the transfer of the 1C 4160 volt vital bus from one offsite power infeed to the second offsite power infeed. The 1C EDG {EK/-} automatically started but the EDG output breaker did not close per design. Abnormal operating procedure S1.OP-AB.4KV-0003 was entered for loss of power to the 1C 4160 volt vital bus. As a result of the loss of power to the 1C vital bus, the following equipment became unavailable: 12 charging pump, 12 Safety Injection pump, 13 Component Cooling Water pump, 11 Service Water (SW) pump, 12 SW pump, 12 Containment Spray pump, 13 Chiller, 13 Switchgear and Penetration Area Ventilation (SPAV) supply fan, No. 1 Emergency Control Air Compressor, 12 Fuel Handling Building exhaust fan, 11 Spent Fuel Cooling pump, 13 Control Area Air Conditioning System fan, 12 Control Room Emergency Air Conditioning System fan, and 12 Electrical Penetration Area exhaust fan.

Salem Unit 1 was in Mode 6 with core reload in progress at the time of event and operators suspended fuel movement. The following Technical Specification Action Statements (TSAS) were entered: TSAS 3.8.1.2 action b for 2 inoperable EDGs, TSAS 3.8.2.2 for 2 inoperable vital buses, TSAS 3.7.10 action b for 2 inoperable chillers, and TSAS 3.1.2.1 for boration flow path. At 1940 hours the 1B EDG was declared operable and TSAS 3.8.1.2.b and TSAS 3.8.2.2 were exited.

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NARRATIVE

DESCRIPTION OF OCCURRENCE (cont'd)

Troubleshooting determined that the breaker auxiliary position switch (52STA switch) for the 13CSD breaker, the offsite power infeed from the 13 Station Power Transformer (SPT) to the 1C 4160 volt vital bus, was bound and the contacts associated with the breaker's closed position were still made up when the 13CSD breaker was actually open. In order for the alternate 14CSD infeed breaker from the 14 SPT to close, the 13CSD breaker needs to indicate open. This led to the failure of the bus to transfer and loss of power resulting in the start of the 1C EDG. The failure of the 13CSD breaker 52STA switch to indicate open also prevented the 1C EDG output breaker from closing as designed. Following replacement of the 13CSD breaker 52STA switch, the breaker plunger gap check was performed during breaker rack-in. The gap was determined to be unsatisfactory and was properly adjusted per procedure SC.MD-PR.4KV-0002.

On April 17, 2010, at 0032 hours, the 1C 4160 volt vital bus was energized from the 14SPT through the 14CSD breaker and TSAS 3.1.2.1 was exited. At 0113 hours, the 1C 4160 volt vital bus automatic transfer test was completed satisfactorily and abnormal procedure S1.OP-AB.4KV-0003 was exited. Operators then performed a loaded run of the 1C EDG to verify proper operation following the repairs to the 13CSD breaker. At 0500 hours, the 1C EDG was declared operable. At 0729 hours, TSAS 3.7.10 was exited with 2 chillers restored to operable.

This report is made in accordance with 10CFR50.73 (a)(2)(iv)(A), "any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B)."

CAUSE OF OCCURRENCE

The unexpected start of the 1C EDG was the result of the failure of the 13CSD 52STA switch. The failure of the 52STA switch was the result of binding caused by misadjustment of the gap between the breaker and the 52STA switch assembly. The misadjustment was the result of unclear procedural guidance for measuring the breaker plunger gap.

PREVIOUS OCCURRENCES

A review of LERs for Salem Units 1 and 2 for the past 3 years did not identify any prior similar occurrences of an EDG start as a result of improper breaker switch adjustment.

NARRATIVE

SAFETY CONSEQUENCES AND IMPLICATIONS

There were no safety consequences associated with this event. Salem Unit 1 was in Mode 6 with fuel movement in progress. The loss of the 1C 4160 volt vital bus did not impact shutdown cooling and spent fuel pool cooling was not lost. Movement of irradiated fuel was suspended. The deficient breaker condition was detected during restoration of the equipment to service following maintenance that introduced the deficient condition and did not exist during the operating cycle.

A review of this event determined that a Safety System Functional Failure (SSFF) as defined in NEI 99-02, Regulatory Assessment Performance Indicator Guidelines, did not occur since the ability to remove residual heat and mitigate the consequences of an accident were maintained.

CORRECTIVE ACTIONS

1. The damaged 52STA switch was replaced and the breaker plunger gap was verified in the 13CSD breaker.
2. An inspection was performed on the 14CSD breaker (the alternate infeed for the 1C bus) and verified there was no binding on the 52STA switch.
3. A visual inspection of the 52STA switches and plunger gaps was performed for the 1B, 2A, 2B and 2C 4160 volt vital bus infeed breakers and EDG breakers. The 1A 4160 volt vital bus infeed breakers were determined to be functioning properly following replacement of the 13ASD breaker by successful performance of the vital bus transfer procedure.
4. Operations procedure SC.OP-SO.4KV-0001, "4KV Breaker Operation," was revised to include guidance on verifying the position of the 52STA switch rod.
5. Maintenance procedure SC.MD-PR.4KV-0002 will be revised to validate the 52STA switch rod position.

COMMITMENTS

No commitments are made in this LER.