



FPL Energy
Seabrook Station

FPL Energy Seabrook Station
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APR 19 2005

Docket No. 50-443
SBK-L-05079

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

Seabrook Station
Licensee Event Report (LER) 2005-002-00 for
Momentary Loss of Power to Emergency Bus While Transferring Power Supplies

Enclosed is Licensee Event Report (LER) 2005-002-00. This LER reports an event that occurred at Seabrook Station on February 22, 2005. This event is being reported pursuant to the requirements of 10 CFR 50.73(a)(2)(iv)(A).

Should you require further information regarding this matter, please contact Mr. James M. Peschel, Regulatory Programs Manager (603) 773-7194.

Very truly yours,

FPL ENERGY SEABROOK, LLC

Mark E. Warner
Site Vice President

cc: S. J. Collins, NRC Region I Administrator
V. Nerses, NRC Project Manager, Project Directorate I-2
G. T. Dentel, NRC Senior Resident Inspector

JE 22

ENCLOSURE TO SBK-L-05079

LICENSEE EVENT REPORT (LER)

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

Estimated burden per response to comply with this mandatory collection request: 50 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.

1. FACILITY NAME Seabrook Station	2. DOCKET NUMBER 05000 443	3. PAGE 1 OF 3
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4. TITLE
Momentary Loss of Power to Emergency Bus While Transferring Power Supplies

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
02	22	2005	2005	- 002 -	00	04	19	2005		05000
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check all that apply)									
10. POWER LEVEL 100	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)						
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)						
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)						
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)						
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)						
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)						
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)						
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER							
<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A							

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME James M. Peschel, Manager Regulatory Programs	TELEPHONE NUMBER (Include Area Code) 603-773-7194
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
X	EB	52	N/A	Y					

14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR

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

While operating at 100% power on February 22, 2005, a momentary deenergization of the 4,160 volt, train A emergency bus resulted in an automatic start and loading of the train A emergency diesel generator and actuation of the emergency feedwater system. The loss of power occurred while transferring the emergency bus power supply from the unit auxiliary transformer (UAT) to the reserve auxiliary transformer (RAT) to support planned maintenance on the UAT circuit breaker. During the transfer, the circuit breaker from the RAT attempted but failed to close and initiated opening of the UAT supply to the emergency bus as designed. This condition initiated a loss of power signal for the emergency bus, and the emergency diesel generator (EDG) automatically started and re-energized the bus. The RAT breaker failed to close because the mechanical interlock associated with the breaker racking mechanism was not properly engaged due to inadequate cleaning and lubrication. Approximately nine hours later, power was restored to the emergency bus via the UAT. The actuated safety systems performed as expected and no adverse consequences resulted from this event.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
Seabrook Station	0500-0443	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 3
		2005	002	00	

17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

I. Description of Event

On February 22, 2005 at 0308 while operating at 100% power, a momentary deenergization of the 4,160 volt, train A emergency bus [EB, BU] resulted in an automatic start and loading of the train A emergency diesel generator [EK, DG] and actuation of the emergency feedwater system [BA]. The loss of power occurred while transferring the emergency bus power supply from the unit auxiliary transformer (UAT) [EA, XFMR] to the reserve auxiliary transformer (RAT) to support planned maintenance on the UAT circuit breaker. During the transfer, the circuit breaker [EB, 52] from the RAT attempted but failed to close and initiated opening of the UAT supply to the emergency bus as designed. This condition initiated a loss of power signal for the emergency bus, and the emergency diesel generator (EDG) automatically started and re-energized the bus. In addition, the loss of power signal automatically started the turbine-driven emergency feedwater (EFW) pump [BA, P]. At 0337, the operators shut down the EFW pump.

Approximately nine hours following initiation of the event, power was restored to the emergency bus via the UAT, and the EDG was returned to a standby condition. At 1720 on February 24, following maintenance on the RAT supply breaker that consisted of cleaning and lubricating the racking mechanism, the emergency bus was transferred to the RAT supply.

II. Cause of Event

The cause of this event was a failure of the mechanical interlock in the racking mechanism for the RAT breaker (ABB Brown Boveri model # 5HK350) to properly engage due to inadequate cleaning and lubrication and the accumulation of dirt and hardened grease in the mechanism. The mechanical interlock is a safety feature that prevents closing of the breaker when it is in an intermediate position during a racking evolution. Additionally, the condition went undetected because of inadequate operating procedure guidance and a lack of individual knowledge related to positive latch engagement during racking operations. During the transfer of the emergency bus power supply, the RAT breaker attempted to close and initiated an opening signal to the UAT breaker; however, improper engagement of the interlock prevented the RAT breaker from closing.

III. Analysis of Event

On February 14, 2005, the RAT supply breaker to the train A emergency bus was racked out to support work in the breaker cubicle for an on going design change. The RAT supply breaker was returned to standby service as the alternate supply for the emergency bus on February 15, 2005. Consistent with station procedures, the work required no post-maintenance testing of the circuit breaker because the maintenance activity involved only the cubicle and not the breaker. At 0308 on February 22, 2005, the RAT supply breaker failed to close, causing a brief loss of power on the emergency bus. The breaker malfunction was classified as a Maintenance Rule Functional Failure. However, the condition did not result in a Safety System Functional Failure because off-site power remained available to the redundant safety related electrical train.

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This event, which resulted in a valid actuation of the EDG and the EFW system, met the reporting criteria of 10 CFR 50.72(b)(3)(iv)(A) and 50.73(a)(2)(iv)(A). An eight-hour report (event #41428) was made at 0620 on February 22, 2005. This event is of regulatory significance because it resulted in the actuation of standby systems provided to mitigate the consequences of an accident.

This event had no adverse impact on the plant or on the health and safety of the public. The plant systems responded to the loss of power condition as designed, and no consequences resulted from this event. No inoperable structures, systems, or components contributed to the event. Following the event, however, TS 3.8.1.1, AC Sources, action a, with a 72-hour allowed outage time, was in effect for a loss of one of the two required AC sources until 1239 on February 22, 2005, when offsite power was restored to the emergency bus. Also, the shutdown of the turbine-driven EFW pump at 0337 rendered the pump inoperable due to the inability to align the pump for standby operation in the presence of a loss of power signal. This is an expected condition since the loss of power signal, which initiates EFW, remains active until offsite power is restored to the emergency bus. Nonetheless, the pump remained functional and available for use until it was restored to operable status at 1235 on February 22, 2005.

IV. Corrective Action

Following the event, station personnel inspected the breakers that were racked to the connect position and open on the six 4,160 volt and 13,800 volt buses. The inspection concluded that the mechanical interlock mechanisms were properly engaged and would not prevent any additional breakers from closing.

The planned corrective actions for this condition include (1) revising the maintenance procedures for the 4,160 volt and 13,800 volt circuit breakers to specifically clean and lubricate the locking lever portion of the racking mechanism, (2) revising the operating procedures that direct breaker racking operations to confirm proper engagement of the mechanical interlock, (3) evaluating the scope and frequency of training on breaker racking operations, and (4) cleaning and inspecting the mechanical interlock mechanism on other breakers susceptible to the same malfunction to address the extent of condition.

Similar Events

This event was the first occurrence of a breaker failing to close on demand due to a malfunction of the breaker racking mechanism.