FPL Energy
Seabrook Station

FPL Energy Seabrook Station
P.O. Box 300
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DEC 23 2004

Docket No. 50-443
SBK-L-04154

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

Seabrook Station
Licensee Event Report (LER) 2004-003-00 for
Fire Scenario Results in Unanalyzed Condition-Potential Loss of Charging

Enclosed is Licensee Event Report (LER) 2004-003-00. This LER reports an event that occurred at Seabrook Station on November 2, 2004. This event is being reported pursuant to the requirements of 10 CFR 50.73(a)(2)(ii)(B).

Should you require further information regarding this matter, please contact Mr. James M. Peschel, Regulatory Programs Manager, at (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

IE22

ENCLOSURE TO SBK-L-04154

NRC FORM 366 (6-2004) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 06/30/2007

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.

LICENSEE EVENT REPORT (LER)

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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Seabrook Station	05000 443	1 OF 3

4. TITLE
Fire Scenario Results in Unanalyzed Condition-Potential Loss of Charging

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
									N/A	05000
11	02	2004	2004	- 003 -	00	12	23	2004	FACILITY NAME: N/A	DOCKET NUMBER: 05000

9. OPERATING MODE
1

10. POWER LEVEL
100

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

- ☐ 20.2201(b)
- ☐ 20.2201(d)
- ☐ 20.2203(a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☐ 50.73(a)(2)(i)(A)
- ☐ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☒ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☐ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☐ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☐ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☐ OTHER

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
James M. Peschel, Regulatory Programs Manager	603-773-7194

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
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

14. SUPPLEMENTAL REPORT EXPECTED

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

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR
NA	NA	NA

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

On November 2, 2004, a review of potential fire scenarios found that fires in four plant areas could disable both charging system trains. A fire could cause a spurious closure of the volume control tank (VCT) outlet valve and cause damage to the operating charging pump. The fire could also damage the cables for the standby charging pump, rendering both charging pumps unavailable. Since the station's design basis is that one train of required systems is free of fire damage, these scenarios result in an unanalyzed condition. The analyses for fire areas, prepared in the mid-1980s, reviewed spurious equipment operation. However, the report failed to consider the unique interaction between the spurious closure of a VCT outlet valve and the operating charging pump in the redundant train. Compensatory actions that were implemented to mitigate the effects of this condition include: establishing an hourly fire patrol in the four fire areas of concern, minimizing combustible materials in the four areas, briefing the operators on this condition, and revising procedures to establish an alternate flow path to the charging pump in response to a fire alarm in any of the four areas. A design change is being planned to correct this condition. The condition resulted in no adverse safety consequences; however, it is of regulatory significance because it represented an unanalyzed condition.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Seabrook Station	0500-0443	2004	- 003	- 00	2 OF 3

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

I. Description of Event

On November 2, 2004 at 1400, an evaluation of potential fire scenarios, based on Catawba operating experience, determined that a fire in any of four plant areas could disable both the train A and train B centrifugal charging pumps (CCP) [CB] [P]. An 8-hour non-emergency report was made pursuant to 10 CFR 50.72(b)(3)(ii)(B) on November 2, 2004 (event # 41167). Each of the four areas contains electrical cables associated with a volume control tank (VCT) outlet valve [20] and the CCP in the same train. (During normal operation, one CCP is in service with its suction aligned to the VCT [TK] through series train A and train B outlet valves). In the event of a fire in one of these areas with the opposite train CCP in service, a circuit failure could produce a spurious closure of the VCT outlet valve, resulting in damage to the operating CCP. The cables for the standby-charging pump could also be damaged because they are located in the same fire area. As a result, neither charging pump would be available to provide reactor coolant system inventory control and reactor coolant pump seal injection.

The plant was operating in mode 1 at 100% power during this event.

II. Cause of Event

The apparent cause of this event is an inadequate original Appendix R report. The report, prepared in the mid-1980s, was developed in accordance with written instructions to review equipment to determine the effects of spurious operation. The analysis evaluated the impact of a fire on equipment located in each fire area. The review concluded that the spurious operation of equipment was acceptable based on the availability of redundant equipment. However, the review failed to identify the unique interaction between a spurious closure of the VCT outlet valve and the impact on the operating charging pump in the redundant train. The reason for this failure is indeterminate since this is a historical condition that dates back to the initial analysis of safe shutdown capability.

The evaluation of the extent of condition for this event analyzed the systems credited to support safe shutdown for similar suction valve and pump interactions. The primary component cooling, service water (ocean and cooling tower), emergency feedwater, and residual heat removal systems were reviewed with consideration of the effect of spurious valve closures and the potential to damage an operating pump. The review identified no similar, detrimental interactions involving spurious closure of a suction valve on an operating pump. Also, a review of previous issues related to Appendix R found no similar occurrences involving deficiencies in the analyses.

III. Analysis of Event

The Appendix R report on safe shutdown capability identifies the CCPs as equipment necessary to support safe shutdown. Further, the design basis is that one train of systems necessary to accomplish safe shutdown from the control room or the remote safe shutdown facility is free of fire damage. The postulated equipment failures that could render both CCPs unavailable were not considered in the safe shutdown analysis and, therefore, represent an unanalyzed condition.

This event resulted in no actual adverse safety consequences, as no actual fire occurred to challenge the CCPs. This event involved postulated scenarios and potential failures; consequently, this condition had no direct impact on the health and safety of the public or plant personnel. Nonetheless, the event does have regulatory significance in that it involved an unanalyzed condition related to safe shutdown capability.

This condition did not result in any safety system unavailability time, and no inoperable structures, systems, or components contributed to this event.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
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17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

IV. Corrective Actions

Following discovery of the condition, the station established the following compensatory actions:

a. An hourly fire watch patrol was established in the four fire areas where cables associated with both the VCT outlet valve and standby-charging pump could be damaged. If fire detection becomes inoperable in these areas, a continuous fire watch will be posted in the affected area.

b. Existing transient combustible material permits were reviewed for the four fire areas to ensure that the quantity of materials is minimized to that necessary to support current work.

c. The operators were briefed on this condition and the compensatory measures

d. The abnormal operating procedure for fire response was revised to establish an alternate suction path to the charging pumps in response to a fire alarm in any of the four fire areas of concern.

The planned corrective action for this condition is to implement a design change, currently under development, that modifies the circuits for the VCT outlet valves. The purpose of the design change will be to eliminate the hot short failure mode in these circuits.

V. Similar Events

None