CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9609170380 DOC.DATE: 96/09/03 NOTARIZED: NO DOCKET #
FACIL:50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina 05000400
AUTH.NAME AUTHOR AFFILIATION
EADS,J. Carolina Power & Light Co.
DONAHUE,J.W. Carolina Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 96-013-00:on 960801,operations personnel identified condition outside plant design basis where RWST had been connected to nonseismically qualified sys.Caused by failure to reconcile operation procedure.W/960830 ltr.

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TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:Application for permit renewal filed. 05000400

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10CFR50.73

SHEARON HARRIS NUCLEAR POWER PLANT UNIT 1
DOCKET NO. 50-400
LICENSE NO. NPF-63
LICENSEE EVENT REPORT 96-013-00

Dear Sir or Madam:

In accordance with Title 10 to the Code of Federal Regulations, the enclosed Licensee Event Report is submitted. This report concerns a condition outside of the design basis where the Refueling Water Storage Tank (RWST) had been connected to a non-seismically qualified system.

Sincerely,

J. W. Donahue
Director of Site Operations
Harris Plant

JHE/jhe

Enclosure

c: Mr. J. B. Brady (NRC - HNP)
Mr. S. D. Ebneter (NRC - RII)
Mr. N. B. Le (NRC - PM/NRR)

NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

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

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Harris Nuclear Plant Unit-1	50-400	1 OF 3

TITLE (4)

Condition outside of design basis where the RWST had been connected to a non-seismically qualified system.

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
08	01	96	96	-- 013 --	00	09	03	96		05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	1
POWER LEVEL (10)	100%

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

	20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)
	20.2203(a)(1)		20.2203(a)(3)(i)	X	50.73(a)(2)(ii)		50.73(a)(2)(x)
	20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71
	20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER
	20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A
	20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Johnny Eads Project Engineer - Licensing	(919) 362-2646

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On August 1, 1996 with the plant operating in Mode-1 at 100% power, Operations personnel identified a condition outside the plant design basis where the Refueling Water Storage Tank (RWST) had been connected to a non-seismically qualified system. Specifically, non-seismic portions of the fuel pool purification system have been aligned to the RWST for cleanup and non-seismic portions of the hydrostatic test pump have been aligned to the RWST to fill the Safety Injection accumulators. If a seismic event were to occur, the non-seismic portions of these systems could fail and drain the RWST.

This condition was caused by a failure to reconcile operating procedure lineups with the plant design basis during original procedure development. Subsequent technical and safety reviews also failed to identify the conditions as outside the plant design basis.

Immediate corrective actions included establishing administrative controls to maintain the seismic boundary isolation valves closed. Additional corrective actions include a review of other seismic/non-seismic interface boundary valves for similar problems. Long term design and/or operational options for RWST cleanup and hydrostatic test pump operation are being evaluated.

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

EVENT DESCRIPTION:

On August 1, 1996 with the plant operating in Mode-1 at 100% power, Operations personnel identified a condition outside the plant design basis where the Refueling Water Storage Tank (RWST) (EIIS Code: BQ - TK) had been connected to a non-seismically qualified system. Specifically, non-seismic portions of the fuel pool purification system (EIIS Code - DA) have been aligned to the RWST for cleanup and non-seismic portions of the hydrostatic test pump (EIIS Code - BP) have been aligned to the RWST to fill the Safety Injection (SI) accumulators. If a seismic event were to occur, the non-seismic portions of these systems could fail and drain the RWST. This condition was identified by the Superintendent - Shift Operations while reviewing a recent similar event at Salem.

Fuel Pool Purification Connection

The original plant design of the fuel pool purification system was non-safety, non-seismic and separated from the RWST by a normally closed safety related boundary valve. The boundary valve (1CT-23) is manually operated and does not receive an automatic isolation signal. The design basis documents describing the RWST (DBD-106) and the fuel pool purification system (DBD-110) do not describe RWST cleanup during operation. FSAR Section 9.1.3.2 states that the fuel pool purification pumps can take suction from and return fluid to the RWST; however, no operational limitations are discussed. Based on the above, extended use of the fuel pool purification system aligned to the RWST during normal operation was not analyzed.

The original issue of operating procedure OP-116, "Fuel Pool Cooling and Cleanup," (9/4/84) provided for RWST purification using the fuel pool purification system. Procedure reviews and safety reviews were performed, however, they did not identify that this mode of operation would place the system outside its design basis. FSAR Figures 6.2.2-1 and 9.1.3-1 show the seismic/non-seismic boundary. Operations, ALARA and Chemistry reviews were completed but did not question the non-seismic interfaces.

Hydrostatic Test Pump Connection

The original design of the hydrostatic test pump was non-safety, non-seismic and separated from the RWST by a normally closed safety related boundary valve. This boundary valve (1CT-22) is manually operated and does not receive an automatic isolation signal. The hydrostatic test pump design basis document includes a statement that the hydrostatic test pump is isolated from the process piping during normal operation.

The original issue of operating procedure OP-110, "Safety Injection," (9/27/84) did not include valve 1CT-22, however, it did include procedural guidance for filling the SI accumulators with the hydrostatic test pump. Revision 1 (12/24/85) to OP-110 added valve 1CT-22 and directs the operator to unlock and open the valve. Operations and Chemistry reviews were completed for both revisions. The safety evaluation performed in accordance with 10CFR50.59 for Revision 1 states that a common mode failure is not introduced by the performance of this procedure. FSAR Figures 6.2.2-1 and 6.3.2-3 show the seismic/non-seismic boundary. OP-110 references a Westinghouse Safety Injection System Description which states that the hydrostatic test pump serves no safety related function but permanent connections are provided for using the hydrostatic test pump in supplying borated water for filling and level adjustment of the accumulators. In addition to OP-110, the hydrostatic test pump connection to the RWST is also used during performance of OST-1506, "Reactor Coolant System Isolation Valve Leak Test - 18 Month Interval - Mode 3." OST-1506 is performed to satisfy Technical Specification surveillance requirements 4.0.5 and 4.4.6.2.2. The procedure reviews and safety reviews for OST-1506 also failed to identify that this mode of operation would place the system outside its design basis.

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

CAUSE:
This condition was caused by a failure to reconcile operating procedure lineups with the plant design basis during original procedure development. Subsequent technical and safety reviews also failed to identify the conditions as outside the plant design basis.

SAFETY SIGNIFICANCE:
The RWST is a safety related water source used by multiple safety systems following a design basis accident including charging/safety injection, residual heat removal, and containment spray. The conditional core damage probability (CCDP), given a seismic event of magnitude greater that the operating basis earthquake, was determined to be 7.32E-2, assuming that a reactor trip occurs and that all non-seismically qualified components and systems are unavailable after the event. If the RWST is also assumed to be unavailable after the seismic event, then the CCDP increases to 7.64E-2, a 4.4% increase. The RWST is not typically assumed to be required to mitigate a seismic event, and the small increase in CCDP is due to scenarios involving random failures of secondary side heat removal systems, which result in a demand for bleed-and-feed cooling using the RWST. Simultaneous design basis accidents and earthquakes are highly unlikely and, in accordance with standard industry PRA practices, not evaluated.

This condition is reportable per 10CFR50.73(a)(2)(ii).

PREVIOUS SIMILAR EVENTS:
Similar plant events where non-seismic piping has been temporarily connected to safety related systems during plant operation have included: (1) Post Accident Sampling system connection to the Emergency Service Water system (1989), (2) chemical addition tank connection to the Component Cooling Water system (1994), and (3) chemical addition tank connection to the Essential Services Chilled Water system (1994). Corrective actions for these similar events were narrowly focussed and did not identify the similar problems with RWST connections.

Similar industry events have been identified which involved non-seismic connections to the RWST. These included events at San Onofre (1989), Diablo Canyon (1990), and Salem (1996). The San Onofre event was documented in an NRC Daily Plant Status Report, however this event did not receive a Harris Plant review. No industry operating experience feedback notification of the Diablo Canyon event could be located. As a result, no Harris Plant review was conducted. The recent similar event at Salem was reviewed by the Harris Plant Superintendent - Shift Operations and resulted in this condition being identified at the Harris Plant.

CORRECTIVE ACTIONS COMPLETED:
1. Established administrative controls to maintain the seismic boundary isolation valves closed.

CORRECTIVE ACTIONS PLANNED:
1. Review other seismic/non-seismic interface boundary valves for similar problems by October 31, 1996.
2. Evaluate long term design and/or operational options for RWST cleanup and hydrostatic test pump operation by December 31, 1996.