CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9705270290 DOC.DATE: 97/05/19 NOTARIZED: NO DOCKET #
FACIL:50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina 05000400
AUTH.NAME AUTHOR AFFILIATION
VERRILLI,M. Carolina Power & Light Co.
DONAHUE,J.W. Carolina Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 97-010-00:on 970418,design deficiency determined re reactor coolant pump motor oil collection sys.Caused by RCP OCS design detail.RCP OCS enclosures for each of three installed RCP motors have been modified.W/970519 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 4
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:Application for permit renewal filed. 05000400

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CATEGORY 1 DOCUMENT

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Carolina Power & Light Company
Harris Nuclear Plant
PO Box 165
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MAY 1 9 1997

U.S. Nuclear Regulatory Commission
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Serial: HNP-97-111
10CFR50.73

SHEARON HARRIS NUCLEAR POWER PLANT UNIT 1
DOCKET NO. 50-400
LICENSE NO. NPF-63
LICENSEE EVENT REPORT 97-010-00

Sir or Madam:

In accordance with Title 10 to the Code of Federal Regulations, the enclosed Licensee Event Report is submitted. This report describes a design deficiency in the Oil Spill Protection System for the Reactor Coolant Pump motors.

Sincerely,

J. W. Donahue
Director of Site Operations
Harris Plant

MV

Enclosure 270024

IE22 1/1

c: Mr. J. B. Brady (HNP Senior NRC Resident)
Mr. L. A. Reyes (NRC Regional Administrator, Region II)
Mr. N. B. Le (NRC - NRR Project Manager)

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)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Harris Nuclear Plant Unit-1	50-400	1 OF 3

TITLE (4)

Design Deficiency - Reactor Coolant Pump Motor Oil Collection 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
4	18	97	97	-- 010 --	00	5	19	97	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	6
POWER LEVEL (10)	0%

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)		50.73(a)(2)(ii)		50.73(a)(2)(x)
	20.2203(a)(2)(i)		20.2203(a)(3)(ii)	X	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)
Michael Verrilli Sr. Analyst - Licensing	(919) 362-2303

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 April 18, 1997, with the plant in Mode-6 (Refueling) for refueling outage 7, a walkdown performed by Harris Nuclear Plant (HNP) Engineering and Fire Protection personnel determined that the Reactor Coolant Pump motor Oil Collection System (OCS) did not meet applicable design requirements. Specifically, a six inch wide gap exists in the OCS enclosure at the base of the upper lube oil cooler on each of the three installed Reactor Coolant Pump (RCP) motors, which could allow RCP oil to splash or spray out in the event of a lube oil cooler or lube oil piping leak. During subsequent investigation, additional design discrepancies were also identified and are described in the event description.

HNP Final Safety Analysis Report (FSAR) Section 9.5.1 states that the RCPs are equipped with an oil collection system that is designed and installed such that failure will not lead to a fire during normal and design basis accident conditions. It also states that the system is capable of collecting oil from all potential pressurized and unpressurized leakage sites in the RCP lube oil systems. This design was established to meet the fire protection program requirements of NUREG-0800/NRC Branch Technical Position CMEB 9.5-1. The deficient RCP OCS enclosure does not satisfy these design requirements and is being reported per 10CFR50.73.a.2.iii as operation outside the design basis of the plant.

This condition was caused by inadequate RCP OCS design detail and a lack of knowledge on the part of HNP construction and start-up personnel regarding the design basis for the system, which allowed the OCS enclosures to be incorrectly fabricated during initial plant construction.

Corrective actions will include modifying the RCP OCS enclosures for the installed RCPs to satisfy design requirements. This will be completed prior to plant re-start from the current refueling outage. The spare RCP motor has been placed on hold and will be modified prior to use in the plant.

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

EVENT DESCRIPTION:
On April 18, 1997, with the plant in Mode-6 (Refueling) for refueling outage 7, a walkdown performed by Harris Nuclear Plant (HNP) Engineering and Fire Protection personnel determined that the Reactor Coolant Pump motor Oil Collection System (OCS, EIIS Code:AB-PSX) did not meet applicable design requirements. Specifically, a six inch wide gap exists in the OCS enclosure at the base of the upper lube oil cooler on each of the three installed Reactor Coolant Pump (RCP) motors, which could allow RCP oil to splash or spray out in the event of a lube oil cooler or lube oil piping leak.

The deficient OCS enclosure was initially identified on the spare RCP motor located in a site warehouse prior to refueling outage 7 during preparations for replacing the "B" RCP motor. Following identification of the deficient condition on the spare motor, the above mentioned walkdown confirmed that the installed RCP motors also had the gap in the OCS enclosure. Previous identification of this gap was made difficult due to the "B" RCP's physical location and lack of access to the area needed to observe the gap.

Additional RCP OCS design discrepancies were also identified/confirmed during the April 18, 1996 walkdown. These included: (1) the lower oil pot drain valve pipe nipple which extends beyond the motor casing, thereby creating a leak path outside the OCS enclosure if drain valve leakage occurs, (2) the upper oil pot has an oil catcher with a drain line, which drains to the catch tanks. This drain line was found capped on 2 of three RCP motors, (3) The "B" RCP has several overhead fire protection sprinklers. If activated, these sprinklers could spray enough water into the open upper OCS catch pans to fill the catch tanks, thus making them unavailable for containing oil. (This condition only applied to the "B" RCP motor where overhead fire protection sprinklers are provided to protect safety-related cable/conduit for the Pressurizer Power Operated Relief Valves)

HNP Final Safety Analysis Report (FSAR) Section 9.5.1 states that the RCPs are equipped with an oil collection system that is designed and installed such that failure will not lead to a fire during normal and design basis accident conditions. It also states that the system is capable of collecting oil from all potential pressurized and unpressurized leakage sites in the RCP lube oil systems. This design was established to meet the fire protection program requirements of NUREG-0800/NRC Branch Technical Position CMEB 9.5-1. The deficient RCP OCS enclosures do not satisfy these design requirements and are being reported per 10CFR50.73.a.2.iii as operation outside the design basis of the plant.

CAUSE:
This condition was caused by inadequate RCP OCS design detail, which allowed the system to be incorrectly fabricated during initial plant construction. A factor that also contributed to the improperly constructed OCS enclosures was a lack of knowledge on the part of HNP construction and start-up personnel regarding the design basis for the system.

SAFETY SIGNIFICANCE:
The were no actual safety consequences associated with this event. Each of the three RCP motors have operated for approximately 10 years with no major oil leaks. If a large oil leak had occurred in the upper lube oil cooler or the cooler supply piping, the deficient OCS enclosures could have allowed oil to leak or be sprayed on to hot components, potentially causing a fire in the containment building. This is being reported per 10CFR50.73.a.2.iii as operation outside the design basis of the plant.

PREVIOUS SIMILAR EVENTS:
There have been no previous HNP LERs related to a potential fire hazard caused by the RCP Oil Collection System. There have been other industry RCP oil leak / oil fire events documented in NRC Information Notices 84-09, 94-58 and INPO Operating Experience Entry #8123. However, none of these events/conditions involved a gap in the RCP OCS enclosure that would allow RCP oil to create a potential fire hazard.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
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TEXT *(If more space is required, use additional copies of NRC Form 366A)* (17)

CORRECTIVE ACTIONS COMPLETED:

1. The RCP OCS enclosures for the each of the three installed RCP motors have been modified/repaired to resolve the gap at the base of the upper lube oil cooler. This was completed on the "A" and "C" RCP motors during the current refueling outage (RFO 7). The "B" RCP OCS enclosure was corrected on the spare motor prior to RFO 7.

2. The additional deficient conditions identified/confirmed during the April 18. 1997 walkdown have been resolved with the exception of the "B" RCP motor upper catch pans, which could potentially be filled with water from overhead fire protection sprinklers. (reference planned action #1 below) These were completed on April 14, 1997.

3. The old "B" RCP motor removed during RFO 7 has been placed on hold pending completion of modifications on its OCS enclosure.

CORRECTIVE ACTIONS PLANNED:

1. The "B" RCP motor upper catch pans, which could potentially be filled with water from overhead fire protection sprinklers, will be modified to resolve the concern. This will be completed per ESR #97-00297 prior to plant re-start from the current refueling outage.