CATEGORY 1

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ACCESSION NBR:9804130513 DOC.DATE: 98/04/10 NOTARIZED: NO DOCKET #
FACIL:50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light C 05000261
AUTH.NAME AUTHOR AFFILIATION
CHERNOFF,H.K. Carolina Power & Light Co.
MOYER,J.W. Carolina Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 98-002-00:on 980313,failure to meet operability requirements of improved TS for supporting equipment was noted.Caused by failure to understand new procedure.Changed procedure to clarify requirements.W/980410 ltr.

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CATEGORY 1 DOCUMENT

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Carolina Power & Light Company
Robinson Nuclear Plant
3581 West Entrance Road
Hartsville SC 29550

Robinson File No: 13510C
Serial: RNP-RA/98-0067

APR 1 0 1998

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
LICENSEE EVENT REPORT NO. 1998-02-00

Gentlemen:

The attached Licensee Event Report is submitted in accordance with 10 CFR 50.73. Should you have any questions regarding this matter, please contact Mr. H. K. Chernoff of my staff.

Very truly yours,

J. W. Moyer
Plant General Manager

Attachment
c: Mr. L. A. Reyes, USNRC, Region II
Ms. J. W. Shea, USNRC
USNRC Resident Inspector, HBRSEP

IE22

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION
(04-1998)

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2	05000261	1 OF 6

TITLE (4)
FAILURE TO MEET OPERABILITY REQUIREMENTS OF IMPROVED TECHNICAL SPECIFICATIONS FOR SUPPORTING EQUIPMENT

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
03	13	1998	1998	- 02	-- 00	04	10	1998		05000
									FACILITY NAME	DOCKET NUMBER
										05000

		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)					
OPERATING	6		20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)
POWER LEVEL (10)	000		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)		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
			20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		or in NRC Form 366A

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
H. K. Chernoff, Supervisor, Licensing/Regulatory Programs	(843) 857-1544

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED	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 March 13, 1998, at approximately 2030 hours, during Refueling Outage (RO)-18, the plant was in MODE 6 with the refueling cavity water at low level. A licensed operator questioned the OPERABILITY of Residual Heat Removal (RHR) System Train "A" because the corresponding Train "A" support system, the Service Water (SW) System Train "A," was inoperable. The OPERABILITY requirements were not met because both SW Pumps associated electrically with the "A" train RHR pump were out of service. The TS Section 3.9.5 Required Action for this condition was being met. However, a review of the clearance information prior to the event discovery found that the plant was in TS Section 3.9.5 Condition A for periods totaling approximately 53 hours and 42 minutes previously without the plant taking any action to meet the associated Required Actions. Therefore, this report is submitted in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by the plant's TSs. A Night Order was issued to the operating staff that clarified the electrical train requirement for supporting systems for RHR. This was followed by a change to procedures to clarify requirements. This event will be reviewed with outage planning and operations personnel. A review of the next refueling outage schedule will be performed.

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

I. DESCRIPTION OF EVENT

On March 13, 1998, at approximately 2030 hours, during a refueling outage, H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2 was in MODE 6 with the refueling cavity (EIIS System Code: DF) level below 23 feet above the reactor vessel flange. The refueling cavity level was being flooded in preparation to begin removal of fuel assemblies from the core. A licensed operator questioned the OPERABILITY of Residual Heat Removal (RHR) System (EIIS System Code: BP) Train "A" because the corresponding Train "A" support system, the Service Water (SW) System (EIIS System Code: BI) Train "A," was inoperable. Both the "A" and "B" SW Pumps (EIIS Component Function: BIM) which receive power from the same emergency bus as the "A" RHR Pump (EIIS Component Function: BPM), were out of service.

Technical Specification (TS) Limiting Condition for Operation (LCO) 3.9.5, "Residual Heat Removal (RHR) and Coolant Circulation Low Water Level," requires that two (2) trains of RHR be OPERABLE in MODE 6 with the refueling cavity water level less than 23 feet above the reactor vessel flange. The definition of OPERABLE in TS Section 1.0 requires that necessary support systems be OPERABLE for a train of equipment to be OPERABLE. The Bases to TS Section 3.7.7 states that the SW System OPERABILITY requirements in MODE 5 or 6 are determined by the systems it supports. At approximately 2030 on March 13, 1998, the LCO requirements for the "A" train of RHR support systems were not met. TS LCO 3.9.5 was not met because both SW Pumps associated electrically with the "A" train RHR pump were out of service. TS LCO 3.9.5 Required Action A.2, "Initiate action to establish ≥ 23 ft of water above the top of reactor vessel flange," with a Completion Time of "Immediately" was being met. However, a review of the clearance information prior to the event discovery found that the plant was in LCO 3.9.5 Condition A, "Less than the required number of RHR trains OPERABLE," without action being takento meet the associated Required Actions.

At approximately 0300 on March 11, 1998, the plant entered MODE 6. At this time, TS LCO 3.9.5 became applicable. Two RHR trains were required to be OPERABLE and one train was required to be operating. At approximately 0443 on March 11, 1998, a clearance was placed on SW Pumps "A" and "B," rendering them inoperable. Both of these pumps share the same power train as the "A" RHR Pump. This clearance was not removed until approximately 1000 on March 13, 1998. Subsequently, at approximately 1112 on March 13, 1998, a clearance was again placed on SW Pumps "A" and "B." This clearance was removed at approximately 0156 on March 14, 1998. Refueling Cavity fill began at approximately 1137 on March 13, 1998.

Therefore, from approximately 0443 on March 11, 1998, until approximately 1000 on March 13, 1998, and again from approximately 1112 on March 13, 1998, until approximately 1137 on March 13, 1998, the plant was in LCO 3.9.5 Condition A, but the immediate

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

I. DESCRIPTION OF EVENT (Continued)

Required Actions A.1 or A.2 were not being taken. Therefore, for a total cumulative period of approximately 53 hours and 42 minutes, the plant was in a condition prohibited by TSs. Therefore, this report is submitted to the NRC in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by the plant's TSs.

II. CAUSE OF EVENT

The cause of this event is a failure on the part of the refueling outage planning organization to fully understand a new procedure requirement as it relates to the requirement for separate electrical trains for supporting systems to the RHR trains. The clearances were placed on SW Pumps "A" and "B" with the refueling cavity level below 23 feet above the reactor vessel flange because the SW Pumps were not considered protected equipment in accordance with Outage Management Procedure (OMP)-003, "Shutdown Safety Function Guidelines." OMP-003 provides the risk management requirements for MODE 5, MODE 6, and defueled conditions. OMP-003 is a replacement procedure for the former Plant Program Procedure (PLP)-055, "Outage Risk Management," which had been in effect since August 19, 1993. OMP-003, Revision 0, was made effective upon implementation of Improved TSs (ITSs) on November 13, 1997. Prior to implementation of ITS, no TS requirements existed for the plant condition of MODE 6, with refueling cavity water level below 23 feet above the reactor vessel flange. Prior to ITS, the only outage risk management restraints under these conditions were procedural requirements. The procedural requirements of PLP-055 were developed and implemented for the first time on August 19, 1993, in preparation for Refueling Outage (RO)-15. PLP-055 was written to address Nuclear Utilities Management and Resources Council (NUMARC) document 91-06, "Guidelines for Industry Action to Assess Shutdown Management." Outage risk management was implemented at HBRSEP, Unit No. 2 in response to industry focus on operating experience and events during outages[1]. The focus on outage risk management was put in place in the absence of any requirements similar to the Standard TS (STS)[2] requirements for MODE 6 operation with low refueling cavity water level. The STS requirements for this plant condition are identical to ITS LCO 3.9.5. The HBRSEP, Unit No. 2, approach to outage risk management was a basic risk management approach. Hence HBRSEP, Unit No. 2 has made the transition from no formalized outage risk management and no outage TSs requirements under these conditions to the requirements of TSs LCO 3.9.5 within the past five years.

1. NUREG-1449, "Shutdown and Low Power Operation at Commercial Nuclear Power Plants in the United States," USNRC, February 1992.

2. NUREG-0452, "Standard Technical Specifications for Westinghouse Pressurized Water Reactors," Revision 4, USNRC, 1981, Section 3.9.8.2, "Low Water Level."

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II. CAUSE OF EVENT (continued)

ITS LCO 3.9.5 was included as a new more restrictive specification to TSs and was justified to the NRC by letter dated August 27, 1996. The submittal included a markup of NUREG-1431[3], which was the standard reference from which the ITS was developed. NUREG-1431, LCO 3.9.5 differs slightly from ITS by stating that two RHR Loops be OPERABLE with one RHR Loop in operation. ITS did not state the requirement in terms of loops because of the design of HBRSEP, Unit No. 2, which has only one loop of RHR. Therefore the only meaningful separation of trains is electrical separation.

When OMP-003, Revision 0, was implemented on November 13, 1997, the procedure stated the SW requirements for MODE 6, reactor cavity low water level to be two (2) SW pumps with normal power, one with emergency power, and that the support components (i.e., SW) shall be available and on the same train, if applicable, as supported equipment (i.e., RHR). The intent and meaning of the procedure step is to ensure electrical train identity for each RHR loop.

OMP-003 was used to develop the Shutdown Safety Function Status (SSFS). The SSFS identifies components protected from clearance and work performance to assure that risk significant components are available during a particular segment of the outage schedule. The SSFS is based upon the outage schedule and the progress achieved. The outage schedule is developed prior to entry into the outage. Emphasis is placed on planning the outage schedule prior to the outage and working the outage schedule during the outage. The outage planning organization relied upon OMP-003 to meet TSs to develop the SSFS. In the case of this event, a licensed operator questioned the SSFS, which led to the identification of this event.

III. ANALYSIS OF EVENT

This event was not significant to the public health and safety because there were no equipment failures associated with this event and core cooling to the reactor vessel was not challenged during the event. RHR and SW equipment that was in service functioned normally. The SW pumps that were not in service were available and could have been placed in service with manual action to open valves and provide power to the pumps. The "B" Train of RHR and supporting equipment were OPERABLE. The dedicated shutdown equipment used to provide safe shutdown capability in the event of a fire in certain plant areas or a station blackout was available. Adequate cooling capability was available for removing decay heat from the RHR system from the "B" Train Service Water Pumps.

3. NUREG-1431, "Standard Technical Specifications - Westinghouse Plants," Revision 1, April 1994.

III. ANALYSIS OF EVENT (continued)

The OPERABILITY requirement for two (2) trains of RHR assures cooling capability for the condition of reduced heat sink (i.e., low refueling cavity water level) during refueling operations and to provide redundancy in equipment availability to assure that boiling will not occur in the event of an equipment failure. If the reactor coolant temperature is not maintained below 200 degrees F, boiling of the reactor coolant could result. This could lead to a loss of coolant in the reactor vessel. Additionally, boiling of the reactor coolant could lead to a reduction in boron concentration in the coolant due to the boron plating out on components near the areas of the boiling activity. The loss of reactor coolant and the reduction of boron concentration in the reactor coolant could eventually challenge the integrity of the fuel cladding, which is a fission product barrier. Two trains of the RHR System are required to be OPERABLE, and one train in operation, in order to prevent this challenge. In the configuration that existed, loss of a single emergency bus (i.e., Bus E-2) (EIIS System Code: ED) and a loss of the dedicated shutdown electrical bus (EIIS System Code: EC) could have resulted in loss of cooling capability to the core if no manual action was taken.

IV. CORRECTIVE ACTIONS

A Night Order was issued to the operating staff that clarified the electrical train requirement for supporting systems to RHR during MODE 6 with refueling cavity water level below 23 feet above the reactor vessel flange.

Procedure OMP-003 was revised to specify more clearly the required support equipment for RHR trains in MODE 6 low refueling cavity water level.

This event will be reviewed with outage planning and operations personnel to assure that no misunderstanding of the TSs and OMP-003 requirements exists with regard to operability of supporting systems to the RHR System by May 30, 1998.

A review of the RO-19 schedule will be performed prior to RO-19 with respect to MODE 6 core cooling requirements for TS compliance.

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TEXT CONTINUATION

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V. ADDITIONAL INFORMATION

A. Failed Component Information

None

B. Previous Similar Events

None