

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8811030061 DOC.DATE: 88/10/21 NOTARIZED: NO DOCKET #
 FACIL:50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light C 05000261
 AUTH.NAME AUTHOR AFFILIATION
 SAYRE,D. Carolina Power & Light Co.
 MORGAN,R.E. Carolina Power & Light Co.
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-007-01:on 880513, environ qualification documentation
 deficiencies due to inadequate program mgt.W/81021 ltr.
 W/8 1ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED:LTR/ ENCL / SIZE: 8
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD2-1 LA	1 1	PD2-1 PD	1 1
	LO,R	1 1		
INTERNAL:	ACRS MICHELSON	1 1	ACRS MOELLER	2 2
	ACRS WYLIE	1 1	AEOD/DOA	1 1
	AEOD/DSP/TPAB	1 1	ARM/DCTS/DAB	1 1
	DEDRO	1 1	NRR/DEST/ADS 7E	1 0
	NRR/DEST/CEB 8H	1 1	NRR/DEST/ESB 8D	1 1
	NRR/DEST/ICSB 7	1 1	NRR/DEST/MEB 9H	1 1
	NRR/DEST/MTB 9H	1 1	NRR/DEST/PSB 8D	1 1
	NRR/DEST/RSB 8E	1 1	NRR/DEST/SGB 8D	1 1
	NRR/DLPQ/HFB 10	1 1	NRR/DLPQ/QAB 10	1 1
	NRR/DOEA/EAB 11	1 1	NRR/DREP/RAB 10	1 1
	NRR/DREP/RPB 10	2 2	NRR/DRIS/SIB 9A	1 1
	NUDOCS-ABSTRACT	1 1	REG FILE 02	1 1
	RES/DSIR/EIB	1 1	RES/DSR/PRAB	1 1
	RGN2 FILE 01	1 1		
EXTERNAL:	EG&G WILLIAMS,S	4 4	FORD BLDG HOY,A	1 1
	H ST LOBBY WARD	1 1	LPDR	1 1
	NRC PDR	1 1	NSIC HARRIS,J	1 1
	NSIC MAYS,G	1 1		

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK,
 ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION
 LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 42 ENCL 41

AGH

R
I
D
S
/
A
D
D
S
/
A
D
D
S

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) H. B. Robinson Steam Electric Plant, Unit No. 2										DOCKET NUMBER (2) 0 5 0 0 0 2 6 1 1				PAGE (3) 1 OF 0 7											
TITLE (4) Environmental Qualification Documentation Deficiencies Due To Inadequate Program Management																									
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 NAMES			DOCKET NUMBER(S)													
0	5	1	3	8	7	8	7	0	0	7	0	1	1	0	2	1	8	8	0	5	0	0	0		
OPERATING MODE (9) N		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																							
POWER LEVEL (10) 0 0 0		20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)											
		20.405(a)(1)(i)				50.38(c)(1)				50.73(a)(2)(v)				73.71(c)											
		20.405(a)(1)(ii)				50.38(c)(2)				50.73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)											
		20.405(a)(1)(iii)				50.73(a)(2)(i)				50.73(a)(2)(vii)(A)															
		20.405(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)															
		20.405(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(x)															
LICENSEE CONTACT FOR THIS LER (12)																									
NAME Don Sayre, Senior Specialist - Regulatory Compliance										TELEPHONE NUMBER 8 1 0 3 3 1 8 3 1 - 1 2 1 4 1 2															
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									
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)												<input checked="" type="checkbox"/> NO													

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

On May 4-8, 1987, the NRC Staff conducted an inspection of the Unit 2 Environmental Qualification (EQ) program. The inspectors questioned the EQ documentation of certain components. Their questions prompted the licensee to notify the NRC of certain potential EQ deficiencies, pursuant to 10CFR50.72. On May 13, the licensee determined that documentation on file was insufficient to establish full qualification of lubricating grease in the limit switch compartments of four valve motor operators, in the lower motor bearings of two pumps, and in the motors of the four Containment fan coolers. On May 14, other apparent documentation deficiencies were also identified: cable identification, electrical connector and pigtail splice testing, as-installed versus as-tested valve motor operator configurations, tubing cable splice and cable entrance seal installation. The NRC has since issued an Inspection Report and a Notice of Violation on the Unit 2 EQ program. While the licensee has responded to both and the NRC concerns have been resolved, this supplemental LER is submitted for completeness and to report on items not addressed in the Notice of Violation.

8811030061 881021
PDR ADOCK 05000261
S PNUIE 22
1/1

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1) H. B. Robinson S. E. Plant, Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 2 6 1 8 7 - 0 0 7 - 0 1 0 2 OF 0 7	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		

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

I. DESCRIPTION OF EVENT

On May 13, 1987, at 1315 hours, it was determined that use of a specific manufacture of lubricating grease in certain safety-related components could not be demonstrated environmentally qualified by documentation contained in the Environmental Qualification (EQ) file.¹ The components included the limit switch compartments of the motor operators on two Safety Injection (SI) valves, SI-866A and B, and two Residual Heat Removal (RHR) valves, RHR-744A and B, and the lower motor bearings of RHR pumps A and B.

The NRC was notified of a nonemergency event (four-hour) at 1603 hours on May 13, 1987.

Following the May 13 determination, it was also determined that the lubricating grease in the Containment fan cooler motors, HVH-1 through 4, was also unqualifiable based on the lack of available documentation demonstrating qualification.

On May 14, 1987, at 1145 hours, five other apparent qualification deficiencies were also determined, including: 1) identification of environmentally qualified electrical cable in containment; 2) demonstration of environmental testing of Crouse-Hinds electrical connectors and Containment penetration assembly pigtail splices; 3) verification of installed Limitorque valve motor operators to as-tested configurations; 4) completion of the installation of Raychem heat shrinkable tubing cable splices; and 5) installation of conduit seals at cable entrances to certain ASCO solenoid valves and Rosemount transmitters in Containment. The addition of these qualification documentation discrepancies expanded the scope of the environmental qualification issue reported the previous day concerning grease in six safety-related components, and the licensee decided to group all issues under one LER.

A follow-up notification to the NRC was made at 1520 hours, May 14, 1987, to identify the additional five environmental qualification areas of concern.

On May 15, 1987, review of the electrical cable installed in Containment determined that inspection and evaluation of the cable, cable purchase documents, and cable test records provided adequate assurance of environmental qualification. The issue, therefore, was considered resolved satisfactorily. The remaining four environmental qualification areas of concern were still valid since all resulted from questions raised during a recent NRC inspection of the H. B. Robinson Unit 2 Environmental Qualification Program.²

^{1/} The determination was made by Carolina Power and Light Company (CP&L), the licensee for the H. B. Robinson Steam Electric Plant, Unit No. 2, a Westinghouse Pressurized Water Reactor nuclear power plant, in commercial operation since March 1971.

^{2/} Letter, S. A. Varga, NRC to E. E. Utley, CP&L, NRC INSPECTION REPORT NO. 50-261/87-10, dated July 23, 1987

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

FACILITY NAME (1) H. B. Robinson S. E. Plant, Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 2 6 1 8 7 - 0 0 7 - 0 1 0 3 OF 0 7	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	

TEXT (If more space is required, use additional NRC Form 308A's) (17)

A follow-up notification was made to the NRC at 2018 hours, May 15, to identify the change in scope of the environmental qualification issues.

II. CAUSE OF EVENT

The cause of the event was discussed with the NRC in a September 17, 1987 Region II Enforcement Conference on unresolved items regarding environmental qualification of electrical equipment raised in NRC Inspection Report No. 50/261/87-10.² The licensee has responded to the Inspection Report and has provided extenuating information with regard to the unresolved items.³

On June 16, 1988, the NRC issued a Notice of Violation and Proposed Imposition of Civil Penalty (Notice) which included the deficiencies. In accordance with 10CFR2.201, the licensee submitted a reply on September 1, 1988. In the reply, the licensee provided the reasons for the violations, the corrective actions taken, and the date when full compliance was achieved.⁴

See VI.C. Supplemental Information

III. ANALYSIS OF EVENT

For purposes of simplicity, the following narrative describes the original six categories of environmental qualification issues and the corrective action status of each.

1. Identification of Environmentally Qualified Electrical Cable in Containment

The electrical cable within the H. B. Robinson Unit 2 Environmental Qualification Program was originally identified by review and evaluation of purchase orders, Plant construction specification, cable and conduit lists, and other pertinent documents. Environmental qualification documentation for this cable is an integral part of the Unit 2 Environmental Qualification Central File (EQCF). As of May 14, 1987, evaluation of walkdown information then recently gathered on cable in Containment provided reasonable assurance that properly qualified cable was in use for environmentally qualified electrical equipment. As further assurance of complete compliance with the requirements of 10CFR50.49, cable was replaced whenever reasonable assurance of qualification could not be demonstrated by available documentation.

³/ Letter, E. E. Utley, CP&L, to J. N. Grace, NRC, Serial: NLS-87-209, dated October 15, 1987.

⁴/ Letter, L. Eury, CP&L, to NRC, Serial: NLS-88-188, dated September 1, 1988.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
H. B. Robinson S. E. Plant, Unit 2	0 5 0 0 0 2 6 1	8 7	- 0 0 7	- 0 1	0 4	OF	0 7

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

Since May 14, discussions with NRC Region II and NRR personnel have resulted in additional corrective action, including submittal of a Justification for Continued Operation pending the collection and evaluation of further environmental qualification data on the cable. Should efforts to obtain sufficient supplemental data prove unsatisfactory, samples of the cable were to be independently tested in an accident environment and the test results incorporated in the EQCF. The collection and evaluation of supplemental environmental qualification documentation was scheduled for completion following return of the unit to full power operation in mid-June 1987. A Justification for Continued Operation (JCO) was submitted to the NRC on June 1, 1987, to support operation during the time needed to provide further information regarding the one cable manufacturer for which additional qualification documentation was desired (Anaconda Continental Wire & Cable Company).

See VI. C.

2. Demonstration of Environmental Testing of Crouse-Hinds Electrical Connectors and Containment Penetration Assembly Pigtail Splices

The environmental qualification of certain Crouse-Hinds connectors and certain Containment penetration assembly pigtail splices was determined to be questionable. The specific connectors and pigtail splices or concern have been replaced with known environmentally qualified Raychem heat shrinkable tubing cable splices.

3. Verification of Installed Limitorque Valve Motor Operators to As-Tested Configurations

The installed configurations of four Limitorque valve motor operators, SI-866A and B and RHR-744A and B, were identified as different than the as-tested configurations. To assure agreement with test configurations, certain components of the four valve motor operators were replaced or otherwise corrected.

4. Completion of the Installation of Raychem Heat Shrinkable Tubing Cable Splices

In April of 1987, a nonemergency four-hour notification and a subsequent follow-up notification were made to the NRC to identify an apparent environmental qualification deficiency with regard to sixteen Raychem cable splices in Containment. LER-87-003-01 discusses this issue.

5/ Letter, R. E. Morgan, CP&L, to NRC, Serial: RNP/87-2111, dated May 12, 1987.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) H. B. Robinson S. E. Plant, Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 2 6 1 8 7 - 0 0 7 - 0 1 0 5 OF 0 7	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			

TEXT (If more space is required, use additional NRC Form 386A's) (17)

5. Installation of Conduit Seals at Cable Entrances to Certain ASCO Solenoid Valves and Rosemount Transmitters in Containment

The lack of environmentally qualified conduit seals at the cable entrances to certain components in Containment was identified. Vendor recommendations for environmentally qualified ASCO solenoid valves and Rosemount transmitters in harsh environments include installation of the seals to prevent intrusion by moisture or condensation during a Design Basis Accident. These seals have been installed.

6. Environmentally Qualified Grease Installation

The lubricating grease in the geared limit switch compartments of valves SI-866A and B and RHR-744A and B and in the lower motor bearings of RHR pumps A and B was identified as having not been demonstrated environmentally qualified. Subsequently, the lubricating grease in the four Containment fan cooler motors, HVH-1 through 4, was also determined to have questionable environmental qualification documentation. The grease has been removed and a known environmentally qualified grease installed.

In summary, all six environmental qualification issues have been resolved.

See VI. C.

V. CORRECTIVE ACTION

The corrective action taken for the environmental qualification issues is discussed above and in VI. C.

VI. ADDITIONAL INFORMATION

A. Failed Component Identification

None.

B. Previous Similar Events

LER-87-003-01 reported an EQ deficiency with regard to heat shrinkable tubing splices.⁶

LER-87-007-00 provided this report originally.⁷

⁶/ Letter, R. E. Morgan, CP&L, to NRC, Serial: RNP/87-2732, dated June 12, 1987.

⁷/ Letter, R. E. Morgan, CP&L, to NRC, Serial: RNP/87-2713, dated June 12, 1987.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
H. B. Robinson S. E. Plant, Unit 2	0 5 0 0 0 2 6 1 8 7	—	0 0 7	—	0 1	0 6	OF 0 7

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

C. Supplemental Information

The Anaconda Continental Wire and Cable Model CC2115 installed inside of the reactor Containment Vessel has been demonstrated qualified by testing. The question of qualification was raised during the NRC inspection of the licensee's Environmental Qualification program because of the apparent lack of documentation to correlate the CC2115 cable to that used for testing, Model CC2195.

On September 17, 1987, the licensee participated in an NRC Staff Region II Enforcement Conference to discuss the unresolved items regarding environmental qualification of electrical equipment raised in NRC Inspection Report No. 50-261/87-10. At this meeting, the licensee concurred that a deficiency existed with regard to certain Polyvinyl Chloride (PVC) cable lacking adequate qualification documentation. In summary, the following actions had been taken by the licensee upon indication by the NRC inspectors that the cable was not adequately qualified:

- The deficiency was promptly reported.
- Prior to reactor startup, undocumented PVC cable was replaced with cable known to be qualified.
- Testing and analyses were conducted to provide evidence the undocumented PVC cable was qualifiable.

The licensee provided the following description of the cause of the PVC environmental qualification deficiencies:

- The Plant was licensed prior to promulgation of 10 CFR 50, Appendix B; hence, certain documentation was not readily available and this required additional engineering.
- Based on prior interactions with the NRC and its Environmental Qualification consultants, the licensee reasonably believed the Unit No. 2 Environmental Qualification Program met applicable regulatory requirements. An inadequate review of procurement/design documents during compilation of the Unit No. 2 Environmental Qualification Master List in 1979-80 resulted in a failure to identify certain PVC cable as requiring qualification.
- Two additional Environmental Qualification concerns were also identified by the NRC: 1) the licensee's files did not adequately address instrument accuracy because the files did not specify required accuracies and compare these with instrument loop errors based on Loss-of-Coolant-Accident type tests, and, 2) the qualification documentation associated with taped electrical splices that had been replaced in 1986 did not have an acceptable similarity analysis. Both

8/ Cause Code: E.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
H. B. Robinson S. E. Plant, Unit 2	0 5 0 0 0 2 6 1	8 7	— 0 0 7	— 0 1	0 7	OF	0 7

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

concerns have been addressed in the licensee's September 1, 1988 reply to the Notice of Violation and Imposition of Civil Penalty.⁴

CP&L
Carolina Power & Light Company

ROBINSON NUCLEAR PROJECT DEPARTMENT
POST OFFICE BOX 790
HARTSVILLE, SOUTH CAROLINA 29550
OCT 21 1988

Robinson File No: 13510C

Serial: RNP/88-4695
(10 CFR 50.73)

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
LICENSEE EVENT REPORT 87-007-01

Gentlemen:

The enclosed Supplemental Licensee Event Report (LER) is submitted in accordance with 10 CFR 50.73 and NUREG-1022 including Supplements No. 1 and 2. This submittal should replace existing copies of the original report of June 12, 1987.

Very truly yours,

R. E. Morgan

R. E. Morgan
General Manager
H. B. Robinson S. E. Plant

DAS:jch

Enclosure

cc: Dr. J. N. Grace
Mr. L. W. Garner
INPO

*2nd Dist
Previously processed
under incorrect docket
#E22
1/6*