

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Report: 50-382/83-03

Docket: 50-382

License: CPPR-103

Licensee: Louisiana Power & Light Company (LP&L)  
142 Delaronde Street  
New Orleans, Louisiana 70174

Facility Name: Waterford Steam Electric Station, Unit 3

Inspection At: Taft, Louisiana

Inspection Conducted: January 10-14, and January 24-28, 1983

Inspector: John R. Board 3/9/83  
for L. E. Martin, Reactor Inspector Date  
Reactor Project Section B

Approved: W. A. Crossman 3/9/83  
for W. A. Crossman, Chief Date  
Reactor Project Section B

Inspection Summary

Inspection Conducted January 10-14, and January 24-28, 1983  
(Report 50-382/83-03)

Areas Inspected: Routine, unannounced inspection of follow up on licensee identified items; site tour; and installation of safety-related equipment. The inspection involved 72 inspector-hours by one NRC inspector.

Results: Within the area inspected, no violations or deviations were identified.

Details1. Persons ContactedPrincipal Licensee Employees

- \*G. Rogers, Site Director
- \*T. F. Gerrets, QA Manager
- \*L. L. Bass, PQA Engineer
- \*W. M. Morgan, Operations QA Engineer
- \*R. Bennett, Start Up QA Engineer
- \*R. James, Construction QA Engineer
- \*G. F. Koehler, Construction QA Engineer
- \*W. A. Cross, Onsite Licensing Engineer
- \*M. A. Livesay, Onsite Licensing Engineer
- \*B. M. Touns, Construction QA Engineer
- \*J. Woods, QC Engineer
- \*G. Pittman, Construction QA Engineer
- \*T. Paster, Lead S/U Engineer Staff Assistant

Ebasco Services Inc. (Ebasco)

- \*L. A. Stinson, Manager, Site Quality Programs
- \*R. J. Milhiser, Site Manager
- \*W. A. Yaeger, Senior Resident Engineer
- \*M. Walsh, Resident Engineer, Electrical

Other Personnel

- \*H. Bernard, Quality Control, Fischbach & Moore (F&M)
- \*G. Brown, QC Supervisor, F&M
- R. M. Ronquillo, QA Manager, Gulf Engineering (GULF)

The NRC inspector also interviewed other licensee and contractor personnel during the course of the inspection.

\*Denotes those attending one or both exit meetings.

2. Follow Up on Licensee Identified Problems

(Closed) CDR 20, Inadequate Design/Design Review of Instrumentation Seismic Support Drawings. Ebasco had failed to perform design review on 45 drawings for instrumentation supports prepared by Mercury Company (Mercury). Twenty-one of the 45 typical drawings required revision and approximately 124 supports had to be reworked. This rework was accomplished under nonconformance report (NCR) W3-233C and design change notices (DCN) IC-373, IC-385, IC-389-R1, and IC-418. The NRC inspector reviewed the NCR disposition, the DCN's and the inspection reports

associated with rework of selected supports. This item is considered closed.

(Closed) CDR 23, Defective Fisher Control Valve Actuators. This was a Part 21 reported by G. H. Bettis. The spring guide sleeve on the actuators could become displaced and cause binding and failure of the actuator to move. Six HVAC valves and four component cooling water valves had actuators that were identified by G. H. Bettis as being potentially faulty. All ten of the actuators were replaced. The NRC inspector reviewed G. H. Bettis Corrective Action Report 001 and LP&L Service Forms ESU 81-11-235, ESU 81-11-236, ESU 82-4-29, and ESU 82-12-122. The work was performed under CIWA 82H007 and FCR MP-2211. This item is considered closed.

(Closed) CDR 25, Defective GE Circuit Breakers (AKR-30 and AKR-50). General Electric Service (GE) Letter 175-9.6 dated February 12, 1981, advised Ebasco of a potential deformation of the lead teflon bearing sleeve in the breaker, which could prevent closure. Ebasco replaced the bearing and associated assembly on 86 breakers. This item is considered closed.

(Closed) CDR 28, Two Inch and Below Schedule 160 Undersized Socket Welds (T&B). As a result of an Ebasco surveillance, a generic problem was identified with 2" and under schedule 160 socket welds by Tompkins-Beckwith. Two thousand forty-five schedule 160 socket welds were reinspected, of which 1,254 required additional welding. Fifty-three schedule 80 socket welds were also reinspected. None of the schedule 80 socket welds required rework. The NRC inspector reviewed NCR W3-2461 and the associated inspection reports for the reinspection of schedule 80 and schedule 160 socket welds. Selected weld records and socket welds were examined by the NRC inspector. This item is considered closed.

(Closed) CDR 34, Buffalo Forge HVAC Fan Shrouds; Possible Inadequate Design For Shrouds To Serve As Fan Blade Missile Barriers. A Part 21 report by Buffalo Forge identified that certain fan shrouds would not contain a thrown blade. Nine fan shrouds were subsequently modified, of which eight were safety-related. The NRC inspector reviewed Buffalo Forge seismic certification for modifications, DCN NY-HV-125-R3, and the associated inspection reports. This item is considered closed.

(Closed) CDR 38, Start-Up Test Control: Flooding of Emergency Diesel Generator Control and Relay Panels. The control and high voltage panel for diesel generator A were flooded inadvertently during flush and testing of the turbine cooling system. The panels were completely replaced with new panels from Cooper Energy Services. The NRC inspector reviewed the documentation package for the new panels and inspected the installation. This item is considered closed.

(Closed) CDR 40, ITE-Gould Starter Coil Failure in Containment Cooling Fans. During start-up, testing the coils on the Size 5 starters failed. Subsequently, LP&L replaced the coils in all 12 of these type starters.

Six of the replaced coils were returned to ITE-Gould for testing. The manufacturer was unable to determine the cause of the failures. The NRC inspector reviewed NCR W3-2845, CIWA 812277, and ESU 82-4-80. This item is considered closed.

(Closed) CDR 41, Unapproved Welding by Ebasco Force Account. NCR's W3-2971, W3-3202, W3-3206, and W3-3211 documented unauthorized and improper welding that had been performed. All 14 welds were cut out. The base metal was examined after cut out and 12 of the welds were redone using qualified welders and procedures. Two of the welds had been temporary attachments.

Ebasco Procedure ASP-4-48, Revision M, was revised to include controls to preclude welding to permanent plant equipment by Ebasco force accounts. A training session was provided for the Ebasco force accounts and Ebasco supervision. This item is considered closed.

(Closed) CDR 43, Main and Emergency Feedwater Pipe Break Analysis - Failure to Limit Emergency Feedwater Flow to Faulted Steam Generator. NCR W3-3444 and DCN-MP-573 added two new check valves in pump discharge lines and removed the internals of check valves 2FW-V825A and V826B. This modification will provide the appropriate sensing to limit emergency feedwater to the faulted steam generator. This change was documented in Amendment 28 to the Waterford Unit 3 FSAR. The NRC inspector reviewed the close out documentation for NCR W3-3444. This item is considered closed.

(Closed) SCD 44, LPSI Pump Suction Valves. SDCS upgrading for remote operation as a result of IMI-2 design review revealed that valves 2SI-B301A and B302B were not capable of withstanding the approximately 370-pound differential that would be developed across these valves in the closed position. DCN-MP-589 added two new check valves, deleted the proposed motor operators for 2SI-B301A and B302B, and required that the valves be locked open. The NRC inspector reviewed the close out of NCR W3-3441 and the associated drawing revisions, procurement documentation and welding and NDE records. This item is considered closed.

(Closed) SCD 46, Cooper-Bessemer Emergency Diesel Generator Agastat Relay Defect. Amerace Corporation advised Ebasco of a potential problem with Agastat GPDC-740 control relays manufactured before August 1977. The manufacturer identified a problem with post mold base shrinkage that could cause binding and misoperation of the relay. This problem was discovered at Susquehanna. Ebasco initiated NCR W3-3534 and replaced 148 relays (74 per diesel generator) with new GPDC-740 relays that do not have the shrinkage problem. The NRC inspector reviewed the NCR close out documentation and verified the installation of new relays in the panels. The item is considered closed.

(Closed) SCD 47, General Electric AKR-30/50 Circuit Breaker Closing Spring Screw. GE Service Letter 175-9.7 advised Ebasco of the omission of thread locking compound on the screw of the lower end of the closing spring assembly. This problem could result in failure of the breaker to close.

NCR's W3-3180 and 3541 identified 78 breakers of this type at the Waterford site. One of the breakers was found to have a broken screw and three others were loose. The broken screw was replaced and the loose screws were torqued and locktite was applied to all breakers. The NRC inspector reviewed the associated inspection reports including calibration data for torque wrench. This item is considered closed.

(Closed) SCD 49, Time-Trol Inc., Heat Trace Panel Malfunctions. Raychem Corporation Part 21 of March 9, 1982, identified problems with voltage regulator malfunctions, relay chatter, and differences in the panel that was tested and those shipped to Waterford. Ebasco initiated NCR W3-3548, which identified three heat trace panels CVCS A&B and B-WMS panels. Raychem furnished new temperature modules, temperature sensor amplifier boards, voltage regulators, and temperature sensors for all three panels. This item is considered closed.

(Closed) SCD 50, Possible Malfunction in AGASTAT E7000 Series Time-Delay Relay. Amerace Corporation Part 21 identified diaphragm problems with relay manufactured between August 27, 1981, through December 15, 1981, which could result in shorter time delays than indicated on dial. NCR's W3-3559 and 3561 identified 18 relays of the E-7000 series used in Class 1E control circuits. All 18 relays were replaced with new relays. This item is considered closed.

(Closed) SCD 52, Bi-Metallic Penetration Welds, No Stress Relief. Associated pipe and engineering did not perform post weld heat treatment on Shop Weld 2 for the guard pipe on containment penetrations 40 and 41, as required by ASME Section III winter addenda subparagraph NE-4623.1(d). The welding procedure used by Associated Pipe was not qualified for post-weld heat treatment.

Penetrations 40 and 41 were replaced with new penetrations that had received the proper postweld heat treatment. The NRC inspector reviewed the purchase order package, material test reports and installation. This item is considered closed.

(Closed) C-SCD 58, Cable Tray Fire, RAB at +35 elev. A fire in the cable spread area damaged 30 cables in one tray section between plan points 1,935 and 1,936. Thirteen cables had to be replaced and 17 cables had to have external jacket repairs the NRC inspector examined the area after the repairs were complete and reviewed the close out of NCR W3-4098, CIWA, and test records of cables. Fire Investigator Report 7-007-82 W3 SES was also reviewed. This item is considered closed.

(Closed) SCD 65, Orifice Plate Gasket Failure in HPSI System. During cold hydro of the HPSI system it was discovered that the gaskets on four orifice plate assemblies were deficient in design application and installation. The gaskets were replaced with flexitallic style CG 0.175" gaskets that had originally been specified. The NRC inspector reviewed the disposition and close out of NCR W3-4768 and the inspection reports associated with the installation of the new gaskets. These four orifice plates were the

only installations at Waterford using the graphlock wire insert type gaskets. This item is considered closed.

(Closed) SCD 67, Failure of A500 Grade B Tube Steel to Meet Chemical/Physical Properties. Pressure Vessel Nuclear Steels, Inc., advised Ebasco that one piece of 4" x 4" A500 Grade B tube steel heat 803L75350 has elongation properties below ASME/ASTM code requirements. This tube steel was used in the fabrication of seven pipe supports. The NRC inspector reviewed NCR W3-4827, the physical property (elongation) retests performed by pressure vessel nuclear and regal steel and the actual loadings on the seven pipe supports. The NRC inspector discussed the Ebasco evaluation with the responsible engineer. It appears that these supports will not be affected by the decrease in elongation as the allowable stresses are within the elastic limit of the material. This item is considered closed.

(Open) SCD 17, Base Metal Defects in Main Steam and Feedwater Containment Penetration Anchors. The NRC inspector reviewed the close out on this item, but it will remain open for close out by our welding specialist during a subsequent inspection.

### 3. Site Tour

The NRC inspector toured the reactor building, fuel handling building, auxiliary building, control room, and turbine building to observe the ongoing construction, testing, and maintenance activities, and the general housekeeping conditions.

No violations or deviations were identified.

### 4. Safety-Related Equipment Installation

The NRC inspector examined the complete installation and reviewed the construction installation records of safety-related equipment to determine if the installation and subsequent inspection had been accomplished in accordance with established procedures, design drawings and documents, industry standards, and FSAR commitments.

#### a. Observation of Work

The NRC inspector examined the following safety-related equipment installation:

##### (1) Containment Spray Pump A utilizing these installation documents:

Ebasco Drawings 1564-755, Revision 4

Ebasco Drawings 1564 G-137, Revision 6

Ebasco Installation Specification MC-1, Revision 1

Installation Traveler PSA-141

- (2) Component Cooling Water Pump B utilizing these installation documents:

Ebasco Drawing 1564-1347, Revision 5

Installation Traveler PSA-192

Installation Traveler PSA-193

Installation Traveler PSA-194

- (3) Control Room Supply Fan 3BSB for AH-12 utilizing these installation documents:

Waldinger Drawing SMG 86502-1, Revision 5

Waldinger Drawing SMG 864502-1A, Revision 2

Field Change Request (FCR) HVAC-291

Field Change Request (FCR) HVAC-465

Design Change Notice (DCN) NY-HV-137, Revision 1

- (4) 480 volt Switchgear 3B31-S utilizing these documents:

Ebasco Drawing 1564-1508, Revision 9

Design Change Notice E-172

- (5) 480 volt Moter Control Center 3A313-S utilizing these installation documents:

Ebasco Drawing 1564-3187, Revision 2 Nonconformance Report  
W3-2750 Nonconformance Report W3-2250

- (6) ESFAS Auxiliary Relay Cabinet 3BS utilizing these installation documents:

Ebasco Drawing 1564-6337, Revision 1  
Ebasco Drawing 1564-1136, Revision 0  
Vendor Drawing 5858-80-006-10

- (7) RTG Control Board CP-8 utilizing these installation documents:

Ebasco Drawing 1564-9289, Revision 2  
Ebasco Drawing 1564-G-318, Revision 4

- (8) Diesel Generator Control and Relay Panel 3B-5 utilizing these installation documents:

Ebasco Drawing 1564-G240S02, Revision 5  
Ebasco Drawing 1564-G574S05, Revision 2  
Field Change Request (FCR) E1022, Revision 2  
Field Change Request (FCR) E1422

- (9) 20KVA Solid State Inverter 3MC-S utilizing these installation documents:



Ebasco Drawing 1564G320S02, Revision 6

Ebasco Drawing 1564G321S02, Revision 9

Ebasco Drawing 15646321S01, Revision 9

Nonconformance Report W3-2256

One unresolved item (8303-01) was identified with Item 9 of the above. The Solid State Inverter 3MC-S had some missing and improperly shimmed hold-down bolts and some of the hold-down bolts had not been properly grouted. Ebasco had previously identified these conditions in NCR W3-2256. This NCR also identified missing hold down bolts that could not be installed on two of the four inverters. Wyle Laboratories did an analysis of the inverters and performed some insitu testing of the inverters which was documented in Wyle Report WR-82-13. Wyle based on the analysis and in-situ testing verified that the installations, utilizing three hold-down bolts per panel instead of the original four that had been specified, was adequate. However, the NRC inspector was not able to identify in the Wyle report that improper installation of the other hold-down bolts had been adequately addressed to preclude the additional rework as originally required in the disposition of NCR W3-2256. This item will remain unresolved pending further evaluation of the Wyle report and additional documentation that the existing hold-down bolt loading used in the Wyle analysis into account the as-built conditions of all of the inverters.

No violations or deviations were identified.

b. Review of Records

The NRC inspector reviewed the records for procurement and installation of the preceding equipment. This review included the following:

- Installation Travelers
- Inspection Report
- Nonconformance Reports
- Field Change Request
- Material Receiving Reports
- Equipment Qualification Packages
- Maintenance Records
- Equipment and Installation Specifications
- Certified Material Test Reports
- Manufacturer Test Reports
- Vendor Surveillance Forms

All of the records and packages were complete and in accordance with the appropriate procedures with two exceptions.

Control Room Supply Fan 3BSB was apparently installed without the motor. The motor (based on maintenance records) was installed around November 1980. Ebasco could not provide the NRC inspector with an inspection report documenting installation of this safety-related motor. This item (8303-02) is considered as unresolved pending a further record search for the appropriate documentation.

Diesel Generator Control and Relay Panel 3B-S was appropriately installed, however, F&M was unable to locate the inspection report documenting the inspection associated with the installation. This item (8303-03) is considered unresolved pending a further records search for the appropriate documentation.

5. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations, or deviations. Three unresolved items are identified in paragraphs 4a and 4b on this inspection.

6. Exit Meetings

The NRC inspector and T. A. Flippo, Resident Inspector for Waterford 3, met with L. L. Bass and other licensee and contractor personnel on January 14 and 28, 1983, to discuss the scope and findings of that particular span of the inspection period. The three unresolved items were identified and discussed in detail.

INSPECTOR'S REPORT  
Office of Inspection and Enforcement

L. E. MA MARTIN, LAWRENCE E.  
REVIEWER  
W. A. CRUSSMAN

INSPECTORS

LICENSEE/VENDOR	TRANSACTION TYPE	DOCKET NO. (8 digits) OR LICENSE NO. (BY PRODUCT) (13 digits)	REPORT		NEXT INSP. DATE	
			NO	SEQ	MO	YR
LOUISIANA POWER & LIGHT (WAT 3)	X I - INSERT M - MODIFY D - DELETE R - REPLACE	05000382	3828	303		

PERIOD OF INVESTIGATION/INSPECTION						INSPECTION PERFORMED BY		ORGANIZATION CODE OF REGION/HQ CONDUCTING ACTIVITY (See ISMC 0530 Manpower Reporting—Weekly Manpower Reporting for code)				
FROM		TO				1 - REGIONAL OFFICE STAFF		OTHER		REGION	DIVISION	BRANCH
MO.	DAY	YR.	MO.	DAY	YR.	X				4	C	A
01	10	83	01	28	83	2 - RESIDENT INSPECTOR						
20		25	26		31	3 - PERFORMANCE APPRAISAL TEAM						

REGIONAL ACTION (Check one box only)		TYPE OF ACTIVITY CONDUCTED (Check one box only)							
X 1 - NRC FORM 591		X 02 - SAFETY		06 - MGMT. VISIT		10 - PLANT SEC.		14 - INQUIRY	
X 2 - REGIONAL OFFICE LETTER		03 - INCIDENT		07 - SPECIAL		11 - INVENT. VER.		15 - INVESTIGATION	
		04 - ENFORCEMENT		08 - VENDOR		12 - SHIPMENT/EXPORT			
		05 - MGMT. AUDIT		09 - MAT ACCT.		13 - IMPORT			

INSPECTION/INVESTIGATION FINDINGS (Check one box only)				TOTAL NUMBER OF VIOLATIONS AND DEVIATIONS				ENFORCEMENT CONFERENCE HELD				REPORT CONTAIN 2,790 INFORMATION				LETTER OF REPORT TRANSMITTAL DATE					
X 1 - CLEAR				A B C D				A B C D				A B C D				NRC FORM 591 OR REG. LETTER IS ISSUED		REPORT SENT TO HQ FOR ACTION			
2 - VIOLATION				0 0				1 - YES				1 - YES				MAR 10 1983					
3 - DEVIATION																					
4 - VIOLATION & DEVIATION																					

MODULE INFORMATION												MODULE INFORMATION																	
REC. ORD.		MODULE NUMBER INSP.				MODULE REQ. FOLLOWUP						REC. ORD.		MODULE NUMBER INSP.				MODULE REQ. FOLLOWUP											
NUMBER	PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL	PRIORITY	DIRECT INSPECTION EFFORT IN STAFF HOURS EXPENDED THIS INSPECTION	PERCENTAGE COMPLETED	TO DATE	STATUS	PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL	TYPE	NUMBER	PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL	PRIORITY	DIRECT INSPECTION EFFORT IN STAFF HOURS EXPENDED THIS INSPECTION	PERCENTAGE COMPLETED	TO DATE	STATUS	PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL	
1	251051	B	004	100C						B	251056	B	007	100C															
1	251053	B	007	100C						B	292706	A	020																
1	251054	B	008	100C						B	250073	B	100C																
1	251055	B	007	100C						B	230703	B	001	002															

\* CIRCLE SEQUENCE IF VIOLATION OR DEVIATION

INSPECTOR'S REPORT  
 Office of Inspection and Enforcement

MARTIN, L. E.

REVIEWER

CROSSMAN, W. A.

INSPECTORS

LICENSEE/VENDOR	TRANSACTION TYPE	DOCKET NO. (8 digits) OR LICENSE NO. (BY PRODUCT) (13 digits)	REPORT		NEXT INSP. DATE	
			NO.	SEQ.	MO.	YR.
L P & L	X I - INSERT M - MODIFY D - DELETE R - REPLACE	05000382	8303	A		

PERIOD OF INVESTIGATION/INSPECTION						INSPECTION PERFORMED BY		ORGANIZATION (CODE OF REGION/HQ CONDUCTING ACTIVITY (See IEMC 0530 Manpower Reporting - Weekly Manpower Reporting for code))		
FROM			TO			1 - REGIONAL OFFICE STAFF 2 - RESIDENT INSPECTOR 3 - PERFORMANCE APPRAISAL TEAM	OTHER	REGION	DIVISION	BRANCH
MO.	DAY	YR.	MO.	DAY	YR.					
01	10	83	01	28	83			4	C	A

REGIONAL ACTION (Check one box only)		TYPE OF ACTIVITY CONDUCTED (Check one box only)													
1 - NRC FORM 591	2 - REGIONAL OFFICE LETTER	X 02 - SAFETY	03 - INCIDENT	04 - ENFORCEMENT	05 - MGMT. AUDIT	06 - MGMT. VISIT	07 - SPECIAL	08 - VENDOR	09 - MAT. ACCT.	10 - PLANT SEC.	11 - INVENT. VER.	12 - SHIPMENT/EXPORT	13 - IMPORT	14 - INQUIRY	15 - INVESTIGATION

INSPECTION/INVESTIGATION FINDINGS (Check one box only)				TOTAL NUMBER OF VIOLATIONS AND DEVIATIONS				ENFORCEMENT CONFERENCE HELD				REPORT CONTAIN 2,790 INFORMATION				LETTER OF REPORT TRANSMITTAL DATE											
A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	MO.	DAY	YR.	MO.	DAY	YR.		
X				0	0																						
1 - CLEAR				2 - VIOLATION				3 - DEVIATION				4 - VIOLATION & DEVIATION				1 - YES				1 - YES				MAR 10 1983			

MODULE INFORMATION														MODULE INFORMATION													
REC. ORD.		MODULE NUMBER INSP.				PRIORITY	DIRECT INSPEC. EFFORT IN STAFF HOURS EXPENDED THIS INSPECTION	PERCENTAGE COMPLETED TO DATE	STATUS	MODULE REQ. FOLLOWUP				REC. ORD.		MODULE NUMBER INSP.				PRIORITY	DIRECT INSPEC. EFFORT IN STAFF HOURS EXPENDED THIS INSPECTION	PERCENTAGE COMPLETED TO DATE	STATUS	MODULE REQ. FOLLOWUP			
TYPE	NUMBER	PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL					PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL	TYPE	NUMBER	PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL					PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL
B	250074	B			A	008100C					B				A												
B	250075	B			A	002100C					B				A												
B	250076	B			A	008100C					B				A												

\* CIRCLE SEQUENCE IF VIOLATION OR DEVIATION