



**LOUISIANA**  
**POWER & LIGHT**

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August 10, 1984

J.M. CAIN  
President and  
Chief Executive Officer

W3B84-0467

Director of Nuclear Reactor Regulation  
ATTN: Mr. Darrell G. Eisenhut, Director  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

SUBJECT: Waterford 3 SES  
Partial Response to Items  
from Waterford Review Team

- REFERENCES:
- 1) Letter, D.G. Eisenhut to J.M. Cain,  
"Waterford 3 Review," dated June 13, 1984
  - 2) Letter W3B84-0459, J.M. Cain to D.G. Eisenhut,  
"Waterford 3 SES Revised Program Plan," dated  
July 27, 1984

Dear Mr. Eisenhut:

The purpose of this letter is to submit Louisiana Power & Light's responses to issues 2, 3, 8, 16 and 19 as set forth in your June 13, 1984 letter (Reference 1). The responses follow the approach set forth in Attachment I to the Program Plan I sent you on July 27, 1984.

The responses have been reviewed and verified by LP&L QA in accordance with procedure QASP 19-13. The designated subcommittee of the Waterford Safety Review Committee also has reviewed the adequacy of the responses for resolving the issues raised. The subcommittee finds the responses acceptable; it has not independently validated the facts set out in the responses.

The Task Force has indicated by separate correspondence (enclosed) that they are satisfied with the logic of the responses, however, they have not yet completed their independent validation of the facts. The Task Force has committed to notifying me and the NRC immediately should they find significant deviations in the course of their validation. In the event of such notification, LP&L will amend individual responses as may be necessary.

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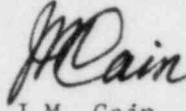
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Mr. Darrell G. Eisenhut, Director  
W3B84-0467  
August 8, 1984

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We request that you commence actions you deem necessary to lead to the resolution of these individual issues. Responses to the remaining issues will be submitted as they are prepared.

Sincerely,

A handwritten signature in cursive script, appearing to read "J.M. Cain".

J.M. Cain

JMC:DA:pbs

Mr. Darrell Eisenhut, Director  
W3B84-0467  
August 10, 1984

Page 3

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NUS-W3-0002  
August 10, 1984

Mr. J. M. Cain  
President and Chief Executive Officer  
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317 Barrone Street  
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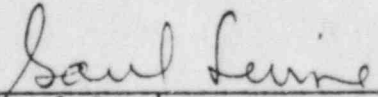
Reference: Letter from D. G. Eisenhut, Director, Division  
of Licensing, USNRC to J. M. Cain, President  
and Chief Executive Officer, LP&L, Waterford 3  
Review, June 13, 1984

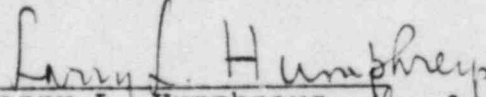
Dear Mr. Cain:

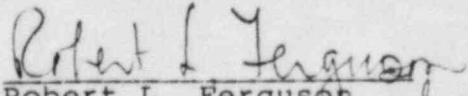
We understand that you plan to submit LP&L responses to the  
NRC covering Issues 2, 3, 8, 16 and 19 of the referenced  
letter.

The Task Force has no objection to this course of action. We  
have studied these issues and find the logic stated in the  
LP&L responses to be adequate. You should note that the Task  
Force has not yet completed its independent validation of the  
facts presented in the responses. We will notify you and the  
NRC immediately if we find significant deviations in the  
course of our continuing validation effort. Of course, as you  
know, our work on all 23 issues and their collective signifi-  
cance is continuing and will culminate in a formal report to  
you.

Sincerely,

  
Saul Levine  
Vice President and  
Group Executive  
Consulting Group, NUS

  
Larry L. Humphreys  
President  
UNC Operations Division

  
Robert L. Ferguson  
Chairman  
UNC Nuclear Industries



## RESPONSE

ITEM NO.: 2

TITLE: Missing N1 Instrument Line Documentation

### NRC DESCRIPTION OF CONCERN:

The staff examined the documentation concerning installation of safety-related N1 instrument lines. Part of that review dealt with the situation where there is a change of design classification for systems. As a result of the staff review it was determined that communications between LP&L and Ebasco prompted a revision to be written by Ebasco to an LP&L drawing to clarify the "class break" for N1 instrument lines. The revision imposed ASME Class requirements for all installations between the process piping and the instrument lines installed after April 7, 1982. Prior to the revision a class break was defined to show the location where ASME class stopped and ANSI B31.1 applied.

Although ANSI B31.1 does not relate to records retention, 10 CFR 50 Appendix B does require installation and inspection records. Therefore, for locally mounted N1 instruments, even though they were installed prior to April 7, 1982, these records could not be located. Examples of the instrument lines with no supporting installation and inspection records for zones classified as ANSI B31.1 are LT-SI-0305B, LT-SI-0305D, PS-CH-0224X, PS-CH-0224Y, and PS-CH-0224Z.

Examples of the type of deficient data are weld reports, welder identification, weld filler material, base material and weld inspection results.

The NRC staff concluded that based upon the lack of quality records, for instrumentation installation to B31.1 the requirements of 10 CFR 50, Appendix B and the related other QA program elements may not have been complied with.

The lack of documentation to demonstrate the quality of installation of these safety related lines calls into the question the acceptability of these installed components.

LP&L shall: (1) Provide the missing documentation required by 10 CFR 50 Appendix B for the B31.1 instrumentation for local mounted instruments; (2) Review other design changes and documentation for all safety-related N1 instrumentation systems to assure all system installations were properly documented and inspected; and (3) If the documentation cannot be located, action must be taken to assure affected portions of safety-related system comply with NRC requirements.

### DISCUSSION:

Prior to April 7, 1982 the instrumentation design permitted a class break to be taken in N1 instrument lines which would have allowed the installation, after the second accessible isolation valve, to be installed per ANSI B31.1. This approach has been endorsed by the Instrumentation Society of America Standard ISA-67.02-1980, "Nuclear-Safety Related Instrumentation Sensing Line and Tubing Standards for use in Nuclear Power Plants." After 4/7/82, no class break was taken in Class 1E N1 instrument installations and full documentation is provided.

Prior to the NRC special review, Ebasco Quality Assurance Installation Records Group (QAIRG) had commenced a review of all Mercury safety-related N1 instrumentation systems. This review is now complete. The program reviewed documentation on all N1 locally mounted instruments from the process connection up to the class break, and all cabinet mounted instruments from the process connection up to the cabinet. Full documentation on the installations under the scope of this review is provided and available.

The review indicated that a total of 192 N1 instruments were installed prior to April 7, 1982. These are noted in DCN-IC-232 R1. Of these installations, 102 were cabinet mounted and subject to the QAIRG review as indicated above and full documentation is available. Ninety were locally mounted and fell into the following five categories:

1. Reclassified to N2 instruments	24
2. Thermocouples (no tubing involved)	19
3. Installed Full ASME III (without class-break)	35
4. Threaded connections	8
5. Welded and needed re-inspection	4
	<hr/>
	90

The reclassification of the 24 instruments to N2 was accomplished by DCN's issued in 1981, 1982 and 1983 (Refer to Table I). This includes three of the five instruments identified by the NRC (PS-CH-0224X, PS-CH-0224Y and PS-CH-0224Z) which were reclassified to N2 by DCN-IC-1006R1 (September, 1982). This reclassification was made because the instruments, although safety related for pressure boundary reasons (up to and including the class break valves), did not perform a Class 1E function. Table I documents the reasons for these reclassifications.

There is no tubing involved in the thermocouples and the concern is, therefore, not applicable.

Thirty-five installations were installed without class break. That is, they meet the requirements of ASME Section III from the process connection to the instrument. Full documentation is available.

The remaining 12 installations (4 welded and 8 threaded) constitute the scope of this concern. Available documentation is compared in Table II to ASME Section III requirements.

The welded and threaded installations meet ANSI B31.1 requirements (except for welder ID) as can be seen in Table II. In addition, they even approach full compliance with ASME Section III.

Of the four welded installations noted in Table II, two (LT-SI-0305B and LT-SI-0305D) were subject to a hydro test of 31.2 psig. This compares to the normal operating pressure of approximately 15 psig. These instruments (LT-SI-0305B and LT-SI-0305D) have welder ID on ten of sixteen welds, were installed by ASME Section IX qualified welders, were hydro tested, have final visual inspection, and were installed using material that meets or exceeds the requirements for ANSI B31.1 installations. The other two welded installations (DPT-HV-5108AS and DPT-HV5108BS) are HVAC installations and received final visual examination of all welded connections. The operating pressure of these installations is sub-atmospheric.

Based upon the above, sufficient documentation exists for all locally mounted N1 instruments to demonstrate the quality of installation of these installed components per the requirements of ANSI B31.1.

CAUSE:

A program existed for these installations and was adhered to. As discussed above, sufficient documentation exists to ensure the quality of the N1 ANSI B31.1 installations.

GENERIC IMPLICATIONS:

The combination of the QAIRG Program and the subsequent documentation review of all locally mounted N1 instruments provides assurance that sufficient quality records exist to assure the quality of all N1 instruments, including both those installed to ASME Section III and ANSI B31.1 criteria. There are, therefore, no generic implications to this concern or any condition which would indicate a need to review all related design changes.

SAFETY SIGNIFICANCE:

LP&L recognizes the validity of the concern over whether record requirements for the installation of N1 locally mounted instruments were in complete compliance with 10CFR50, Appendix B. It is believed, however, that the documentation developed as part of the B31.1 installation process is sufficient to demonstrate with reasonable assurance that the existing quality of construction is such that fuel load and power ascension would not endanger public health and safety. However, to eliminate any doubts regarding the quality of these 12 installations they will be reworked, reinspected and documented in accordance with ASME Section III requirements which satisfies the applicable criteria of 10CFR50, Appendix B.

CORRECTIVE ACTION PLAN/SCHEDULE:

The above actions on the 12 installations will be completed prior to exceeding 5% power.

ATTACHMENTS:

Table I - Reasons for Declassifying the 24 Instruments from N1 (Class 1E) to N2 (Non-Class 1E).

Table II - Comparison of Qualifications Documentation of the ANSI B31.1 Portions of N1 Instrument Installations to Documentation Requirements of ASME Section III

REFERENCES:

None.

TABLE I

REASONS FOR DECLASSIFYING THE 24 INSTRUMENTS FROM N1 (CLASS 1E) TO  
N2 (NON-CLASS 1E)

<u>TAG NO.</u>	<u>DATE DECLASSIFIED</u>	<u>DOCUMENT DCN NO.</u>	<u>JUSTIFICATION</u>
(1) FIS-CC-5770 A1S (2) FIS-CC-5770 A2S (3) FIS-CC-5770 B1S (4) FIS-CC-5770 B2S (5) FIS-CC-5770 C1S (6) FIS-CC-5770 C2S (7) FIS-CC-5770 D1S (8) FIS-CC-5770 D2S	7/7/83	DCN-IC-1292	These switches provide status of the RCP cooling coils. Switches are not required for safe plant shutdown.
(9) PS HV-5222 AS (10) PS-HV-5222 BS	5/14/81	DCN-IC-421F3	Although these switches are still N1 on the instrument list due to their use in Class 1E circuits, their use (low pressure alarm only) is not required for safe shutdown of the plant. Failure mode of the associated valve is fail-close which is the failsafe position, therefore, the tubing does not need to be N1.
(11) PS CC-3081 (12) PS CC-3082 (13) PS CC-3083B (14) PS CC-3083C (15) PS CC-3083D (16) PS CC-3084A (17) PS CC-3084C (18) PS CC-3084D (19) PS CC-3086	10/8/82	DCN-IC-744R1	Low instrument air indication to non-Class 1E plant computer for information only. Instruments are not required during accident condition.
(20) PS-IA-9740A (21) PS-IA-9740B	10/8/82	DCN-IC-966R1	Low instrument air indication to non-Class 1E plant computer for information only. Instruments are not required during accident condition.

## TABLE I

(Continued)

<u>TAG NO.</u>	<u>DATE DECLASSIFIED</u>	<u>DOCUMENT DCN NO.</u>	<u>JUSTIFICATION</u>
(22) PS-CH-224X (23) PS-CH-224Y (24) PS-CH-224Z	9/1/82	DCN-IC-1006R1	These switches (charging pump suction pressure) provide protection from low suction pressure to the charging pumps during normal operation. During accident conditions the switches are bypassed, hence they do not have a Class 1E function. The failure of these switches will not result in an unsafe condition.



TABLE II

COMPARISON OF QUALIFICATION DOCUMENTATION OF THE ANSI B31.1  
PORTIONS OF NI INSTRUMENT INSTALLATIONS TO DOCUMENTATION  
REQUIREMENTS OF ASME SECTION III

## DOCUMENTATION AVAILABLE

ASME Section III Req	Welded Installations (4)			Non-Welded Installations (8)		
	<u>Full Compliance</u>	<u>Partial Compliance</u>	<u>No Compliance</u>	<u>Full Compliance</u>	<u>Partial Compliance</u>	<u>No Compliance</u>
Material Traceability to point of installation		x(1)			x(1)	
Welder Qualified to ASME Sect. IX	x			NA	NA	NA
Welder ID for each weld		x(2)		NA	NA	NA
Fit-up inspection before weld- out			x(5)	NA	NA	NA
Final visual	x			NA(3)		
NDE	NR(4)	NR(4)	NR(4)	NA	NA	NA
Hydro	x(6)			x		

- (1) LP&L has CMTRs and/or C of Cs to the material specifications for all fittings/weld rods/ tubing and valves showing that the material meets or exceeds the requirements for ANSI B31.1 installations.
- (2) Two of the instrument installations have welder ID on ten of the sixteen associated welds. The other two have their welder ID partially consumed by the welds on all four associated welds; the Weld Control Record in the OCR, though, does provide reasonable assurance as to the welder identity.
- (3) Documentation included in hydro packages.
- (4) The instruments are P3 which require only a final visual inspection and no liquid penetrant tests.
- (5) Not required by ANSI B31.1. All installations are low pressure (less than 30 psi) and fit up is not critical.
- (6) LT-SI-0305B and LT-SI-0305D were hydro tested; DPT-HV-5108AS and DPT-HV-5108BS were not hydro tested due to their location across the filters in the suction side of fans E-35 (3A-SA) and E-35(3B-SB), respectively. In addition, instruments installed in HVAC Systems do not require hydrostatic testing in accordance with ASME Section III.

## RESPONSE

ITEM NO.: 3

TITLE: Instrumentation Expansion Loop Separation

### NRC DESCRIPTION OF CONCERN:

As a part of its review of NCRs the staff identified a concern in NCR-W3-7702. This NCR was written as a result of Mercury OCR Package 1782. Drawing 172-L-012-C Revision 4 had a handwritten note on it identifying two lines DPT-RC-9116 SMB (HP) and DPT-RC-9116 SMA (HP) where the separation criteria had been violated. The violation occurs where these instrument lines from different trains leave the tube tracks and form an expansion loop before returning to the continuation of the tube track. Lack of separation could result in failure of redundant lines that could prevent a safety function.

LP&L shall correct the separation criteria violation found in System 52A. They shall also provide a program for review of other safety-related systems for separation criteria violations and take the necessary corrective actions.

### DISCUSSION:

This item is concerned with separation criteria deviations which may result when instrument line expansion loops leave their tube track. The violation identified by the NRC has been dispositioned in NCR-W3-7702 [lines DPT-RC-9116SMB (HP) and DPT-RC-9116SMA (HP)] to remove the expansion loops. This permits the instrument lines to be fully protected by their respective tube track. The expansion loops can be deleted because the actual tubing installations contain expanding legs and minimum (absorbing) legs which relieve the thermal stresses. This follows the criteria established on drawing B430 Sheet X23D through X23D.5. The calculations supporting the elimination of the loops are attached to NCR W3-7702. It should be noted that in these cases, the violations, had they remained uncorrected, would not have affected plant safety. The instrumentation was installed solely for the purpose of providing protection for a Reactor Coolant Pump shaft break accident. This event would not generate any conditions such as gravity missiles, pipe whip or jet impingement that would disable these instrument lines.

An inspection of the remaining RCP shaft break instrumentation (DPT-RC-9126SMA through DPT-RC-9126SMD, DPT-RC-9116SMC, DPT-RC-9116SMD, and the remainder of the loops for DPT-RC-9116SMA and DPT-RC-9116SMB not covered in NCR-W3-7702) was conducted and NCR-W3-7730 was generated to disposition six areas of potential separation violations found on these lines. All were evaluated by Engineering to be acceptable. A sample of 45 additional instrument installations were then identified for reinspection to the separation criteria. This reinspection was documented as a supplement to NCR-W3-7730. The installations identified for reinspection were in areas of congestion where additional separation violations would most likely be found. Thus, this initial reinspection covered the tubing runs for 51 of the total of 248 N1 instrument installations.

In general, the separation requirement is 24 inches between exposed safety channels (N1 and N1) and safety and non-safety (N1 and N3) channels. The specific details and approved exceptions are delineated in Drawing B430 sheet X-23. The results of the reinspection indicate that for the 51 N1 instrument installations inspected under NCR-7730 there were 13 violations out of a total of 276 locations (expansion loops and exposed tubing). The Engineering evaluation of these violations indicate that no rework is required. These 13 violations were evaluated and found to be acceptable due to the lack of external threat (i.e. jet impingement or seismically induced missile) or due to the functional requirements of the instrumentation.

To provide full assurance that no separation criteria deficiencies exist which could affect plant safety a QC verification of all lines where redundant tubing lines were run in proximity to each other will be performed. This will entail a walkdown of 64 additional N1 instrument installations. Any deviations will be evaluated and, where necessary, corrective action will be taken.

CAUSE:

The primary cause of this problem was insufficient attention to the specified installation separation criteria by the installing contractor.

GENERIC IMPLICATIONS:

It is evident that the application of the prescribed separation requirements was inconsistent on the part of the installing contractor. However, the review of 51 instrument installations indicates that in the instances where separation deficiencies occur, plant safety is not affected. This is due to the fact that separation was an integral part of the plant layout of equipment, and instrumentation. In addition, followup field verification studies relative to seismically induced missiles, seismic interaction and jet impingement were conducted by Ebasco to ascertain and evaluate external threats to redundant instrumentation installations. Separation criteria relative to electrical raceways is in the process of being reviewed by physical walkdowns; interdiscipline separation criteria were evaluated under the Interdiscipline Clearance Criteria program initiated in response to Violation No. 2 as noted in NRC Surveillance Report No. 83-13 dated 4/13/83. An evaluation of the overall QA program in regard to Mercury is contained in the Response to Concern 23.

SAFETY SIGNIFICANCE:

LP&L acknowledges that there were instances where separation criteria were not complied with. As indicated above, however, LP&L has already reinspected a large portion of N1 instrument lines and has identified instrument lines that had separation violations, but has concluded, by engineering evaluation, that none of these would have impacted public health and safety if they had gone uncorrected during the life of the plant. Again, as indicated above, LP&L is in the process of inspecting all other N1 instrument lines which have the potential for separation violations and will perform any necessary corrective actions by fuel load. On this basis, this concern presents no recognized constraint to fuel load or power ascension.

CORRECTIVE ACTION PLAN/SCHEDULE:

The removal of the expansion loops per NCR 7702 is complete.

A procedure has been developed for the reinspection of the additional instrument lines. The walkdown of these installations is complete. The engineering evaluation is in process. Any corrective actions needed will be completed prior to fuel load.

ATTACHMENTS:

None.

REFERENCES:

NCR-W3-7702  
NCR-W3-7730

RESPONSE

ITEM NO.: 8

TITLE: Visual Examination of Shop Welds During Hydrostatic Testing

NRC DESCRIPTION OF CONCERN:

The staff's review of hydrostatic tests conducted by Tompkins-Beckwith (T-B) for their installed ASME Class 1 and Class 2 piping systems found a lack of proof of the visual inspection of all shop welds during the tests. Inspection of all welds for leakage is required by the ASME Code and is essential to ensure the structural integrity of the piping system. LP&L shall provide documented evidence that shop welds were indeed inspected during the hydro tests. If the appropriate inspection documents do not exist or cannot be located, LP&L shall submit a statement attesting to shop weld inspection by the responsible personnel of LP&L or Ebasco who had witnessed the hydro tests.

DISCUSSION:

All ASME Class 1 and 2 piping and welds, including shop welds in piping sub-assemblies that were manufactured by Dravo Corporation, were hydrostatically tested in accordance with Code requirements by the installation contractor, Tompkins-Beckwith (ASME NA Certificate holder), and were inspected and accepted during the test by the Tompkins-Beckwith QC inspectors, the Tompkins-Beckwith Authorized Nuclear Inspector (ANI) and the Tompkins-Beckwith test and start-up coordinator.

Attachment 1 is a copy of the pertinent documentation generated from a typical T-B hydrostatic test for ASME Class piping. On page two of the attachment, the signatures of the six personnel witnessing and accepting the test are shown. Hydrostatic test documentation records for all ASME and ANSI testing are maintained as permanent records, in accordance with ANSI N45.2.9, and are available for inspection.

Although Dravo (shop) welds were not specifically listed in the hydrostatic test package, they were inspected. As evidence of this inspection, LP&L submits the following:

1. Attachment 2 is Tompkins-Beckwith letter QA-1360, dated June 30, 1983, to Ebasco Services Incorporated. This letter has attached to it a hand written report, dated June 28, 1983, concerning the subject of Hydrostatic testing of Dravo (shop) welds, from the Hartford Steam Boiler Inspection and Insurance Company ANI, Thomas J. Dragon, to Tompkins - Beckwith's Quality Assurance Supervisor, Larry Richardson.

The following excerpts from the ANI report substantiate LP&L's position that shop welds were hydrostatically tested and inspected:

- A. "There are no code requirements which mandate a manufacturer/installer to specifically list each weld to be examined during the hydrostatic test. During the hydrostatic test, an examination is made of all joints, connections, and regions of high stress on all areas of the piping system regardless of whether these items were fabricated by Tompkins-Beckwith or Dravo, which were included in the test boundary."



- B. "Although these welds are not specifically listed on Tompkins - Beckwith's hydrostatic test package, they are examined in accordance with NX-6215. Certification of this is indicated by the installer listing the piping sub-assemblies on the N-5 data report and listing the applicable hydrostatic pressure that was conducted on the piping system."
- C. "Your attention is directed to NA-8231 (a), 'Application of Stamp', which briefly states that the Inspector authorizes application of the Code Symbol Stamp after all required tests, examination, and inspections have been performed. This specifically includes the required hydrostatic test."
2. In addition to the above, the manner in which the hydrostatic tests were conducted would assure that shop welds were inspected during the testing. Hydrostatic test inspection of the piping and welds was performed by the inspectors (Tompkins-Beckwith Engineering, Q.C., and ANI) utilizing a marked piping flow diagram to indicate the boundaries of the test (see test boundary description on page two of Attachment 1).

Piping flow diagrams do not indicate or show any welds, therefore, an inspector using these drawings to conduct the inspection walkdown would not have been able to exclude shop welds from inspection during the test. By using these drawings, an inspector would had to have examined all piping and all welds in the test boundary prior to acceptance of the hydrostatic test.

3. The tests were conducted in accordance with the ASME Codes. The requirements for examination for leakage (NX-6215) include "all joints, connections and all regions of high stress" and also that the welded joints be left uninsulated and exposed (NX-6121) during the test. Shop welds, as required by the Code, like regions of high stress, were inspected and accepted, although they were not specifically listed in the test documentation. These requirements were complied with in accordance with Site Procedure ASP-IV-63 during the hydrostatic testing performed by Tompkins-Beckwith.

Attachment 3 is a copy of an ASME N-5 Code Data Report. All ASME N-5 code data reports (including Attachment 3) completed by Tompkins-Beckwith for code stamped piping systems contain the following statement in section 7(b), "Description of Installation Performed", of the code report.

"Hydrostatic test of shop fabricated welds contained in piping subassemblies listed in item 6 above."

This statement also substantiates LP&L's position that shop welds were tested and inspected. It should be noted that this statement was on the N-5 data reports at time of initial signing by the ANI.

The signature of the third party inspector (ANI) on both the hydrostatic test and the N-5 report, attests the ASME Code requirements were fulfilled.

4. Further, it should be noted that this issue was thoroughly evaluated and resolved by Ebasco in July of 1983. The issue was raised during the Ebasco QA records review of Tompkins-Beckwith's Hydrostatic test packages. Attachment No. 4 documents the satisfactory resolution of the issue raised in Attachment 5.
5. Attachment 6 is submitted as the statement confirming to shop weld inspection by the responsible organization (Tompkins-Beckwith's Authorized Nuclear Inspection Agency) that witnessed the hydrostatic testing. This letter confirms Items 1 through 4 above, and also reaffirms LP&L's position that shop welds were tested and inspected.

CAUSE:

No deficiency exists.

GENERIC IMPLICATIONS:

As discussed above, shop welds were hydrostatically tested and inspected as noted by the Tompkins-Beckwith's ANI's report and letter, by the statement on the N-5 report, and by the method in which the test was conducted.

SAFETY SIGNIFICANCE:

LP&L believes that this issue is of no safety significance to fuel load or power operation since no deficiency exist.

CORRECTIVE ACTION PLAN/SCHEDULE:

None.

ATTACHMENTS:

1. Tompkins-Beckwith Hydrostatic test, T-B 60C-4, Rev. 0.
2. Tompkins-Beckwith Inc. letter (L.W. Richardson), QA-1360 dated June 30, 1983 to Ebasco Services, Inc. (Mr. H.J. Kunis Jr.).
3. N-5 Data Report for Safety Injection System (ASME Code Class 2 Portion)
4. Interoffice Correspondence W3QA-25549 from H. Kunis to J. Tompeck, dated July 1, 1983.
5. Memorandum D.M.McCorkle to R.J. Chinnici dated June 15, 1983.
6. The Hartford Steam Boiler Inspection and Insurance Co. letter (B.K.Bojo), dated July 9, 1984, to Ebasco Services, Inc. (M.K.Yates)

REFERENCES:

None.

ATTACHMENT 1

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HYDROSTATIC/PNEUMATIC TEST INSTRUCTIONS

Test Number: T-B 60C-4 Rev.0 System: Safety Injection

Code: ASME, Section III, Division I, Subsection NB, 1974-Summer '76 Addenda

Equipment Required: 2 each 0-5000psi Gauges 1 each 0-2000 psi Gauge.

1 each Relief Valve set @ 3250 psig.

Hydro-pump and Test Gauge header

Prerequisites: A. All valves must be tagged with "LP&L DO NOT OPERATE" tags.

B. Valve line-up to be verified by T-B Quality Control

C. Ebasco Safety Dept. notified 24 hrs. prior to test.

D. \_\_\_\_\_

Inspection Method: Hold test pressure for a minimum of 10 minutes, then lower the pressure to 2505+20 and maintain while inspecting all permanent field welds, joints and connections.



Acceptance Criteria: No leakage from any permanent field weld, joint or connection.

Attachments: A. Hydrostatic/Pneumatic Test Data Sheet

B. Boundary Drawing

C. Valve Line-up List

D. Weld List

E. Sequence Of Test

F. Hydro-pump and Test Gauge Connection

**RECEIVED**  
NOV 4 1982

TOMPKINS - BECKWITH, INC.  
CONTROLLED DOCUMENT

MAY 20 1982

Document Accountable & Return  
Control Number 5-7

T-B QA RECORDS

Test Instruction Approval:

NAME	COMPANY	DATE
<u>[Signature]</u>	<u>T-B Test &amp; Start-up Coordinator</u>	<u>5-17-82</u>
<u>[Signature]</u>	<u>T-B Project Engineer</u>	<u>5/17/82</u>
<u>[Signature]</u>	<u>T-B QA Supervisor</u>	<u>5/17/82</u>
<u>[Signature]</u>	<u>Ebasco</u>	<u>5-19-82</u>
<u>[Signature]</u>	<u>LP &amp; L</u>	<u>5/19/82</u>

HYDROSTATIC/PNEUMATIC TEST REPORT

TEST NUMBER TE60C-4  
Rev. 0

SYSTEM/COMPONENT Safety Injection

DRAWING (S) LOU-1564-G-167 SH.2 Rev.12

TEST BOUNDARIES: Shown in yellow on the above flow diagram.

Test Medium: (A) Potable Water  Disposal Method Water to be retained

(B) Demineralized Water  in the system.

(C) Other \_\_\_\_\_

Design Pressure 2485 Test Pressure 3130 <sup>+20</sup> psig Min. Test Temp. 30 + As specified by Ebasco)  
(Maximum Component-Media Temperature Differential 25oF)

Engineering Verification of System Ready for Hydro or Pneumatic Test:

Piping: R. Jones Title RCB Lead Field Engineer Date 6-17-82

Hangers: R. Zilber Title Lead Mgr. Eng. Date 6/17/82



Test Performance:

Temp: Metal 22.7 Media 22.7 Time System Held At Test Pressure 13 min.

Static Pressure 0 Gauge #1 N/A Gauge #2 N/A

Visual Examination:  Satisfactory  Exceptions (see below)

Retest Necessary:  No  Yes (see below)

Exceptions, comments and/or definitions of sections requiring retest: \_\_\_\_\_

Test Change Notice Attached  YES  
 NO

Test Gauge No.: 454 Calibration Date: 6-17-82 Location: test header

Test Gauge No.: 455 Calibration Date: 6-17-82 Location: test header

Test Gauge No.: N/A Calibration Date: N/A Location: N/A

WITNESSED BY:

ACCEPTED BY:

E. Strickland 6-17-82  
EBASCO

Harry E. Shelton 6-17-82  
QA INSPECTOR DATE

J. W. ... 6-17-82  
HP & L START-UP REP.

Thomas ... 10/25/82  
ANI DATE



OTHER WITNESSES

South ... 6-17-82  
TEST AND STARTUP COORDINATOR, DATE



*Attns*  
*Attachment B*

VALVE LINEUP LIST

ATTACHMENT C

TEST NUMBER TB60C-4

PAGE NUMBER 1

REVISION NUM. 0

VALVE NO.	VALVE DESCRIPTION	TEST POSITION	VERIFIED BY INITIAL/ DATE	POST TEST POSITION	VERIFIED BY INITIAL/ DATE
1SI-V1595TK1A	Hydro-pump & Test 1"Globe Gauge Conn.	OPEN	JEB 6/17/02	CLOSE	6/17/02 JEB
1SI-V1510TK1A	12"Check Boundary	NA	JEB 6/17/02	NA	6/17/02 JEB
1SI-V1505TK1A	12"Gate Boundary	CLOSE	JEB 6/17/02	CLOSE	6/17/02 JEB



TO: J. S. PECO, INC.  
E-2803-105  
Rev. 1  
Attachment D

Attachment D


TEST NUMBER TB 60C-4

REVISION NUMBER 0

TEST CHANGE NOTICE NO. 1

WELD CHECK-OFF LIST

PAGE 1 OF 1

LINE NO.	DRAWING AND REVISION	NO. OF WELDS INSPECTED	SATISFACTORY Q/C ANI	FAILURE/WELD
1S11-314 TK1A	E-2803-IC-53 EFR-4	FW# 3,4,16 SW# 6,7,8,9,10	B.E.B. AD R/S/82	

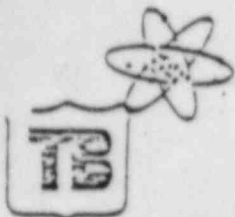
SEQUENCE OF TEST T B 60C-4 REV.0

Connect the Hydro-pump, Test Gauge header and information gauge as indicated on Attachment F.

2. Verify the valve line-up.
  3. Fill the system through the Hydro-pump using the dump valve provided on the Test Gauge header. If possible vent the system through the vent valve provided with the Hydro-pump/Test Gauge header.
  4. Once the system is free of air and a hard system has been established, pressurize the system to 300 psig and HOLD!
  5. Observe the information gauge for the remainder of the Test to insure that the Safety Injection Tank is not pressurized.
  6. While holding at 300 psig examine the system for leaks. When the system is proven to be free of leaks continue sequence.
- SAFETY NOTE:
- A) Prior to exceeding 300psig, notify T-B Safety Dept.
  - B) If a leak occurs above 300 psig, lower the pressure to the previously achieved pressure and make the necessary adjustments. After the corrections are made, resume the sequence.
7. Pressurize the system in 100 psi increments with 2 minute intervals to design pressure (2485 psig) and HOLD!
  8. While holding at design pressure, examine the system for leaks. When the system is proven to be free of leaks, notify all Test Parties.
  9. When all Test Parties are present, pressurize the system in 100 psig increments with 2 minute intervals, to test pressure (3130 +20 psig). Maintain the test pressure for a minimum of 10 minutes. Then lower the pressure to 2505+20 psig and maintain while examining all permanent field welds, joints and connections.
  10. When the Test is completed, relieve the pressure at the Hydro-pump, then close valve ISI-V1595TK1A and remove the Hydro-pump and Test Gauge header.
  11. Return system to post-test configuration.



ATTACHMENT 2



**TOMPKINS-BECKWITH, Inc.**  
MECHANICAL CONTRACTORS  
INDUSTRIAL-COMMERCIAL / PIPE FABRICATORS  
P. O. BOX 390 / HAMNVILLE, LOUISIANA 70057

*Home Office:*  
P.O. BOX 2486  
JACKSONVILLE, FLA. 32203  
PHONE (904) 354-4545

*Affiliate:*  
ROWLAND TOMPKINS CORP  
HAWTHORNE, N.Y. 10332  
(914) 769-3800

June 30, 1983  
QA-1360

Ebasco Services, Inc.  
P.O. Box 70  
Killona, Louisiana 70066

Attention: Mr. E. J. Kuris, Jr.  
QA Site Supervisor

RE: Louisiana Power & Light Company  
Waterford Steam Electric Station  
1983-1165 MW Installation - Unit #3  
Erection of Plant Process Piping Systems  
Contract No. W3-NY-11

Ref: Hydrostatic Testing of Dravo Welds

Gentlemen:

Tompkins-Beckwith, Inc. Third Party Inspection Agency has provided (see attached) written clarification concerning the examination of Dravo Welds not identified under Tompkins-Beckwith, Inc. Hydrostatic/Pneumatic Test Instruction.

Please advise should you have any questions concerning this matter.

Yours Truly,

TOMPKINS-BECKWITH, INC.

L. N. Richardson  
QA Supervisor

LNR/act  
Attachment

CC: C. Cason  
J. B. Gore  
J. K. Toupeck (Ebasco QAIRG)  
T. Dragon (ANI)





SIS REPORT

THE HARTFORD STEAM BOILER INSPECTION and INSURANCE COMPANY  
HARTFORD, CONNECTICUT 06182

TO: Harry Richardson QA Supervisor DATE: 6/28/83 SHEET 1 OF 1

FROM: Thomas J. Deans ADI/NO BRANCH OFFICE: NO

ORGANIZATION: Tomskins-Berkwith

LOCATION: Waterford 3 Telt La COUNTY: STATE: ZIP CODE:

PERSON CONTACTED (GIVE NAME AND OFFICIAL TITLE): Harry Richardson QA Supervisor CONTRACT P.O. NO.: 22-145-723-M-4

REASON FOR VISIT: Hydrostatic Test of Deans Welds

COPIES SENT TO:  Mgr. Eng. Claim, SIS  Chief Inspector  Regional Manager, SIS  Other (Specify): Scrymgeour ADI/41  
F. J. A. I. E. 10

Per our conversation of 6/28/83 the following information is offered concerning the hydrostatic testing of Deans manufactured welds.

There are no Code requirements which require a manufacturer/installer to specifically list each weld to be examined during the hydrostatic test. During the hydrostatic test an examination is made of all joints, connections and regions of high stress on all areas of the piping system regardless of whether these items were fabricated by T-B or Deans, which were included in the test boundary.

In the case of modifications performed by T-B to Deans spools, the back of the NPP-1 form is completed listing the modification and the application of a field hydrostatic test. These items are certified by the installer and the installer's ADI on this form.

SIGNED: Thomas J. Deans ADI  OVER

REV. 10-24-81

As allowed by the Code in NX-6114(a) "The  
Requirement is a pressure test hydrostatic test  
when conducted in accordance with the requirements  
of NX-6221(a) shall be acceptable as a test for  
ports and piping subassemblies.

Although these welds are not specifically listed  
on T-B's hydrostatic test package, they are examined  
in accordance with NX-6215. Certification of this  
is indicated by the Installer listing the piping  
subassemblies on the N-5 data report and listing  
the applicable hydrostatic pressure that was conducted  
on the piping system. These items are certified  
by the Installer/Manufacturer and the Installer/  
Manufacturer's A/I by signing the appropriate  
space on the N-5 signifying that all Code related  
related requirements have been met at one point in time.

Your attention is directed to NA-8231(a) "Application  
of Stamp" which briefly states that the Inspector authorizes  
application of the Code Symbol Stamp after all required  
tests, examinations and inspections have been performed.  
This specifically includes the required hydrostatic tests.

If I can be of any further service in this regard  
please do not hesitate to contact me.

ATTACHMENT 3

FORM N-5 DATA REPORT FOR INSTALLATION OR SHOP ASSEMBLY OF NUCLEAR POWER  
PLANT COMPONENTS, COMPONENT SUPPORTS, AND APPURTENANCES\*

SI

As Required by the Provisions of the ASME Code Rules, Section III, Division 1

Page 1 of 20

1. Installed by Tompkins-Beckwith, Inc., 2160 McCoy's Blvd., Jacksonville, Florida 32203  
(Name and address of installer of component, component supports or appurtenances)  
2. Installed for Louisiana Power & Light Company, Inc., Louisiana  
(Name and address of purchaser or owner)  
3. N Certificate Holder having overall responsibility Ebasco Services, Inc.  
4. Location of installation Waterford Steam Electric Station #3  
5. System identification SI N/A See Margin Nat'l Bd. No. N/A Year installed 1982  
(Mfr. Serial No.) (CPN) (Drawing No.)

6. Nuclear Components and Appurtenances installed in the Field by Welding (List each item and attach copies of N Certificate Holders' Data Reports and NPT Certificate Holders' Partial Data Reports)

(a) Components or Appurtenances	(b) Name of Certificate Holder	(c) Serial No.	(d) Canadian Reg. No.	(e) National Bd. No.	(f) Year Built
251-V1568-7	Yarway	7570	N/A	N/A	1977
251-V1540-82	Target Rock	711-002-3	N/A	N/A	1979
251-V1568-8	Yarway	7598	N/A	N/A	1977 <u>LW3-SI-1</u>
251-V1543-81	Target Rock	711-002-1	N/A	N/A	1979
251-V1568-9	Yarway	7580	N/A	N/A	1977
251-V1568-10	Yarway	7611	N/A	N/A	1977 <u>LW3-SI-2</u>
See Supplement Sheet #2 thru 9					

Piping System Installation

(a) Piping Subassembly	(b) Name of Certificate Holder	(c) Serial No.	(d) Canadian Reg. No.	(e) National Bd. No.	(f) Year Built
25012-123R113-1 T-B	T-B	N/A	N/A	N/A	1982
25012-123R113-2 T-B	T-B	N/A	N/A	N/A	1982
25012-123R113-3 T-B	T-B	N/A	N/A	N/A	1982
25012-123R113-4 T-B	T-B	N/A	N/A	N/A	1982 <u>LW3-SI-1</u>
See Supplement Sheet # 10 thru 20					

Component Support Installation

(a) Component Support No.	(b) Name of Certificate Holder	(c) Serial No.	(d) Design Rept. Load Capac. Data Sheet	(e) Canadian Reg. No.	(f) National Bd. No.	(g) Year Built

Additional Material Excluding Welding Material

(a) Name of Manufacturer	(b) Material Specification	(c) Dimensions

7. (a) Installation in Accordance with:  
Procedure or Drawing No.

Prepared by

1aP-35 (Traveler Preparation)

Tompkins-Beckwith, Inc.

(b) Description of Installation Performed

Closure welds for pressure piping. Hydrostatic test of shop fabricated welds contained in piping sub assemblies listed in Item 6 above.  
1450/1052/935/815/688/300/373/200 \*\*2350/1800/625/550/415/285/60/40 \*\*\*350/300/240/120/110  
(c) Hydrostatic Test      psi System Working Pressure      psi and Temp.      F.

\* Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in items 1 through 5 on this Data Report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.



CERTIFICATION OF DESIGN FOR PIPING SYSTEM INSTALLATION

Design organization of the at: Ebasco Services, Inc. 2 World Trade Center, N.Y.C.

Design Report of the at: LP&L, Waterford III, Taft, LA.

Design specifications certified by: Cesar Sedane PE State Louisiana

Reg. No. 16120

Design Report certified by: N/A PE State N/A

Reg. No. N/A

(1) Signature not required. List name only.

Design Conditions of Piping 50, 160, 300, 440 PSI 150, 250, 350 F.  
700, 650, 1950, 2485 Pressure 400, 650 Temperature

CERTIFICATE OF INSTALLATION COMPLIANCE

We certify that the statements made in this report are correct and that this installation conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components, Section III, Division 1, 1974 Edition.

Appendix Date: Summer 1976 Code Case No. N2-2-1, N282 Class 2 and was performed in accordance with the documents listed in 7(a), above. N316

Our ASME Certificate of Authorization No. 1451-1 to use the NA Symbol expires 9-11-84 (Date)

Date 9-11-83 Signed Tompkins-Beckwith, Inc. by [Signature]  
 (Certificate Holder)

CERTIFICATE OF INSTALLATION INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Louisiana and employed by \*

of Hartford, CT have inspected the installation of the items described in this Data Report on 20 Sept 1983 and state that, to the best of my knowledge and belief, the Certificate of Authorization Holder has performed this installation in accordance with the ASME Code for Nuclear Power Plant Components.

By signing this certificate, neither the inspector nor his employer make any warranty, expressed or implied, concerning the installation described in this Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 28 Sept 1983 Signed William J. Thibaut Commissions LA 624  
 (Inspector) (Nat'l Board, State, Province and No.)

CERTIFICATE OF COMPLIANCE

Following completion of the above, the Certificate of Authorization Holder accepting overall responsibility for the piping system shall complete the following statement.

We certify the statements made by this report are correct and that the piping system conforms to the rules of construction of the ASME Code Section III, Division 1.

Certificate of Authorization expires 7-23-85 Certificate of Authorization No. 1408-1

Date 10/6/83 Signed Ebasco Services, Inc by [Signature]  
 (N-Certificate Holder) (Date)

CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Louisiana and employed by American Motorists Ins, Co

of Long Grove, Ill. have inspected the piping described in this Data Report on 10-6 1983 and state that to the best of my knowledge and belief, the Certificate of Authorization Holder has constructed this installation in accordance with the ASME Code for Nuclear Power Plant Components.

By signing this certificate, neither the inspector nor his employer make any warranty, express or implied, concerning the piping described in this Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 10-6-1983  
 Signed [Signature] Commissions CA 906  
 (Inspector) (Nat'l Board, State, Province and No.)

\*Hartford Steam Boiler I & I Co.  
 \*\* RI - John Z. Horvath - LA PE 19331



ATTACHMENT 4

119

612 Billie  
McCorkle  
Chinnici

Interoffice Correspondence

DATE July 1, 1983

FILE REF W3QA-25549

TO John Tompeck

OFFICE LOCATION QAIRG

FROM Herman J. Kunis, Jr. *H. J. Kunis, Jr.*

OFFICE LOCATION Q. A. Site Supervisor

SUBJECT Hydrostatic Testing of Shop Welds

Reference: D. M. McCorkle letter to R. J. Chinnici, dated June 15, 1983

Mr. McCorkle's interpretation of the ASME code involving hydrostatic testing of shop welds is not valid. Attached please find memos from Mr. Thomas Dragan (Tompkins-Beckwith's Authorized Nuclear Inspector) and Mr. Larry Holt (our Authorized Nuclear Inspector). They both agree that the Authorized Nuclear Inspector signature N-5 Data Report is the final inspection signature for hydrostatic test of the stamped system.

Tompkins-Beckwith has been providing an individual inspection signature for each of their field welds indicating acceptance for hydrostatic test. This is more than the code requires and is admirable but not mandatory by code requirements.

The nonconformance attached to Mr. McCorkle's memo does not need to be issued. We trust this resolves Mr. McCorkle's question once and for all.

RECEIVED

JUL 5 1983

Attachments

HK:jnd

- cc: L. A. Stinson
- P. Burgard
- C. Diz
- L. Jagger
- W3QA File
- QAS File

*copy of copy*  
*P.A.W*  
 EBASCO SA  
*Bourgeois*  
*Rubinski*  
*Paulsen*  
*info*  
*PAW*



SIS REPORT

THE HARTFORD STEAM BOILER INSPECTION and INSURANCE COMPANY  
HARTFORD, CONNECTICUT 06102

TO: Harry Richardson QA Supervisor DATE: 6/28/83 SHEET 1 OF 1

FROM: Thomas J. Drago A.I./N.O. BRANCH OFFICE: NO

ORGANIZATION: Tomolins-Beckwith

LOCATION: Waterud 3 STREET: Talt La CITY: COUNTY: STATE: ZIP CODE:

PERSON CONTACTED (GIVE NAME AND OFFICIAL TITLE): Harry Richardson QA Supervisor CONTRACT P.O. NO.: 128-140-723-H.C.

REASON FOR VISIT: Hydrostatic test of Drago Welds

COPIES SENT TO:  H.C. Eng. Claim, SIS  Chief Inspector  Regional Manager, SIS  Other (Specify): Exec. Secy HRM/41 & O.A.I. 410

Per our conversation of 6/28/83 the following information is offered concerning the hydrostatic testing of Drago manufactured welds.

There are no Code requirements which mandate a manufacturer/installer to specifically list each weld to be examined during the hydrostatic test. During the hydrostatic test an examination is made of all joints, connections and regions of high stress on all areas of the piping system regardless of whether these items were fabricated by T-B or Drago, which were included in the test boundary.

In the case of modifications performed by T-B to Drago spools, the lack of the NPP-1 form is completed listing the modifications and the application of a field hydrostatic test. These items are certified by the installer and the installer's A.I. on this form.

SIGNED: Thomas J. Drago A.I.  OVER

As allowed by the Code in NX-6111(a) "The  
Component in question are hydrostatic test  
when conducted in accordance with the requirements  
of NX-6221(a) shall be acceptable as a test for  
ports and piping subassemblies.

Although these welds are not specifically listed  
on T-B's hydrostatic test package, they are performed  
in accordance with NX-6215. Certification of this  
is indicated by the Installer listing the piping  
subassemblies on the N-5 data report and listing  
the applicable hydrostatic pressure that was conducted  
on the piping system. These items are certified  
by the Installer/Manufacturer and the Installer/  
Manufacturer's A/I by signing the appropriate  
space on the N-5 signifying that all Code related  
related requirements have been met at one point in time.

Your attention is directed to NA-8231(a) "Application  
of Stamps" which briefly states that the Inspector authorizes  
application of the Code Symbol Stamp after all required  
tests, examinations and inspections have been performed.  
This specifically includes the required hydrostatic tests.

If I can be of any further service in this regard  
please do not hesitate to contact me.



JUNE 28, 1983

TO: L. A. STINSON QA PROGRAM MANAGER

FROM: L. G. HOLT ANI

SUBJECT: ANI ACCEPTANCE OF FIELD HYDROSTATIC TESTS

THE ANI SIGNATURE ON THE BACK OF FORM NPP-1 INDICATES HIS ACCEPTANCE OF FIELD HYDROSTATIC TESTS. LINE 11 CLEARLY STATES "FIELD HYDROSTATIC TEST". THE INSTALLER SIGNS FOR THE WORK THAT HE PERFORMS, LINE 10 GIVES A DESCRIPTION OF THE WORK THAT WAS PERFORMED, AND HE IS SIGNING FOR. THE ANI BLOCK "CERTIFICATE OF FIELD - ASSEMBLY INSPECTION" IS FOR THE ANI TO INDICATE HIS ACCEPTANCE OF THE WORK PERFORMED, IT EVEN HAS A LINE TO INDICATE EXACTLY WHAT HE IS SIGNING FOR - 10 - "DATA ITEMS 10 & 11". HIS SIGNATURE INDICATES THAT ALL CODE RELATED ACTIVITIES HAVE BEEN COMPLETED.

N-5 DATA REPORTS HAVE SUPPLEMENTAL SHEETS TO INDICATE WHICH, IF ANY, NPP-1 FORMS APPLY TO THAT PARTICULAR SYSTEM. THE NPP-1'S ARE DELINEATED BY MANUFACTURER NAME AND ASSIGNED SERIAL NUMBER RIGHT ON THE SUPPLEMENTAL SHEETS. THEY BECOME A PART OF THE N-5 PACKAGE, -10- REQUIRED TO BE IN THE PACKAGE



TO SUPPORT ALL ACTIVITIES INVOLVING SHOP CONSTRUCTED ITEMS. THE N-5 PACKAGE STANDS ALONE IN SUPPORT OF "N" STAMPING. ALL CODE REQUIREMENTS HAVE BEEN MET.

IN SHORT, THIS MEMO SHOULD NOT HAVE BEEN NECESSARY. ANY FURTHER MEMOS FROM EITHER MYSELF OR MY COLLEAGUES WILL NOT BE AT ALL NECESSARY. THE N-5 PACKAGE IS ALL THAT THE ASME B & PV CODE REQUIRES.

I TRUST THAT THIS WILL RELIEVE THE MINDS OF THESE INDIVIDUALS WHO DO NOT BELIEVE THAT T & B IS ADEQUATELY DOCUMENTING THEIR PERFORMANCE OF INSPECTION DURING TEST OF DRAVO SPOOL PIPING.

REGARDS,  
L. G. C. C. C.

CC: J. D. ELLIS ANIS  
INSPECTOR FILE

FORM NPP-1 DATA REPORT FOR FABRICATED NUCLEAR PIPING  
(As Required by the Provisions of the ASME Code Rules)

\*CORRECTED REPORT

PG 1 of 2

1. Fabricated by Dravo Corporation, Marietta, Ohio Order No. E-2803  
(Name and Address of Fabricator)

2. Fabricated for Ebasco Services, Inc., New York, NY Order No. NY-403433  
(Name and Address)

3. Owner Louisiana Power & Light Co. Location of Plant St. Charles, LA

4. Piping System Identification S I SHDN COOLING LINE FROM PG LOOP 2  
(Brief description of equipment and their column title)

5. Drawing No. E2803-443 REV 10 Prepared by Dravo Corporation  
(b) National Board No. NA

6. Design Conditions of Piping 440 psi 400 °F  
(Pressure) (Temperature)

7. The material, design, construction, and workmanship complies with ASME Code Section III, Class 7  
 Edition 1971, Addenda Date Winter 1972, Code No. NA

Remarks: Manufacturers' Data Records properly identified and signed by Commissioned Inspectors have been furnished for the following items of this report: NA

\*CORRECTED FIELD WELD & COUNTERBORED TO MATCH 1 1/2" OD & CD = .375 IN

8. Shop Hydrostatic Test None psi

9. Description of Piping Inventory PG. Wk. # 25114-194-4 UNIT 8 2300  
(Include - Data tag - Material type - nominal pipe size - schedule or thickness - length)  
SEE PG 2 of 2  
 - Elbows - (angles, etc.)

*M.R.M.  
10-16-81*

CERTIFICATION OF DESIGN (Not Applicable)

Design information on file at \_\_\_\_\_  
 Stress analysis report on file of \_\_\_\_\_  
 Design certifications certified by \_\_\_\_\_ (1) Prof. Eng. \_\_\_\_\_ State \_\_\_\_\_ Reg. No. \_\_\_\_\_  
 Stress analysis report certified by \_\_\_\_\_ (1) Prof. Eng. \_\_\_\_\_ State \_\_\_\_\_ Reg. No. \_\_\_\_\_  
(1) signature and returned, list name only.

We verify that the statements made in this report are correct.

Date 12/5/78 Signed DRAVO Corporation R. L. Anderson  
(Fabricator) Quality Assurance Department

Certificate of Authorization Expires N1320 3-1-79

CERTIFICATE OF SHOP INSPECTION \*Hartford Steam Boiler I & I Co.

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State of Province of Ohio and employed by Hartford I & I have inspected the piping described in this data report on 12-6 19 78, and state that to the best of my knowledge and belief, the manufacturer has constructed this piping in accordance with the applicable sections of ASME Code, Section III.

By signing this certificate, neither the inspector nor his employer make any warranty, expressed or implied, concerning the piping described in this data report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 12-6 19 78  
Harold L. Hill Commission Ohio Comm DA-2761  
(Inspector) (National Board, State, Province and Terr.)

FORM NPP-1 (back)

10. Description of Field Fabrication:

11. Field Hydrostatic Test \_\_\_\_\_ psi.

We certify that the field assembly of the described piping conforms with the requirements of SECTION III of the ASME BOILER AND PRESSURE VESSEL CODE, Class \_\_\_\_\_, Edition \_\_\_\_\_, Addenda Date \_\_\_\_\_, Case No. \_\_\_\_\_

Date \_\_\_\_\_, 19\_\_\_\_ Signed \_\_\_\_\_ (Assembler) By \_\_\_\_\_ (Representative)

Our Certification of Authorization to use the \_\_\_\_\_ Symbol Expires \_\_\_\_\_ 19\_\_\_\_

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of \_\_\_\_\_ and employed by \_\_\_\_\_ of \_\_\_\_\_ have compared the statements in this manufacturer's data report with the described piping and state that the parts referred to as data items \_\_\_\_\_, not included in the certificate of shop inspection have been inspected by me and that to the best of my knowledge and belief the manufacturer and/or assembler has constructed and assembled this piping in accordance with the applicable sections of the ASME CODE SECTION III.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the piping described in this manufacturer's data report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date \_\_\_\_\_ 19\_\_\_\_

Inspector

Commission

National Board, State, Province and No.

ATTACHMENT 5



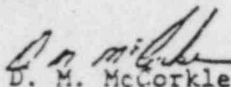
# Interoffice Correspondence

DATE June 15, 1983

FILE REF. W3QAIRG-0559

TO R. J. Chinnici

OFFICE LOCATION Ebasco QAIRG

FROM   
D. M. McCorkle

OFFICE LOCATION Ebasco QAIRG

SUBJECT LOUISIANA POWER & LIGHT COMPANY  
WATERFORD STEAM ELECTRIC STATION  
1983 - 1165 MW INSTALLATION - UNIT NO. 3  
Hydrostatic Testing of Shop Welds  
Manufactured by Dravo

Richard, per your request the following is a response to Mr. L. W. Jagger's speed letter dated 6/10/83.

Mr. Jagger's statement "The signing of N-5 form with N-1 forms of mfg. attached signifies that mfg. shop welds have been hydro tested and accepted by installer ANI;" is not entirely accurate. It is a true statement that the shop welds have been subjected to a hydrostatic test, but the signing of the N-5 form by the installers ANI does not signify acceptance of these welds. To substantiate this statement the following is offered as discourse on the subject of hydrostatic testing shop welds manufactured by Dravo.

The N-5 Data Report, as quoted from ASME Section III 1974 Edition through the Summer of 1976 Addenda is for "NA-8420 Report Form for field installation: field installation welds shall be verified on Data Report Form N-5." The N-5 data report will also identify and have attached the data reports of the components installed by the field installation welds noted above.

The data reports attached to the N-5 such as; NPP-1, NPV-1, N-1, N-1A, NV-1, N-6, N-7, N-2, NCS-1, NCS-2, NF-1 and NF-2 in turn signify Code compliance for the item(s) identified there on. In the case of Dravo, the NPP-1 data reports are signed off by the manufactures ANI but line number 7 (Shop Hydrostatic Test \_\_\_\_\_ PSI) of these data reports has been completed by entering the word NONE, signifying that a shop hydrostatic test was not performed.

The condition is perfectly acceptable, because the Code allows the component or appurtenance hydrostatic test as an acceptable test for parts and piping subassemblies, Reference NB-6114. But this does not eliminate the Code requirement for "Examination for Leakage after Application of Pressure", Reference NB-6215, of the weld's manufactured in the shop.

Therefore the following condition exists:

1. We have an N-5 data report with NPP-1's attached that have no hydrostatic test documented for the shop welds.
2. We have a Tompkins-Beckwith hydrostatic test package with only the field welds documented.
3. Thus we do not have any documentation that the shop welds were examined for leakage after application of pressure. This is a Code requirement NB-6215 that can not be verified by documented (source.)



R. J. Chinnici  
W3QAIRG-0559  
June 15, 1983  
Page 2

4. The installers ANI is only responsible to the extent detailed in NA-5200 and therefore is only verifying those items detailed on the N-5 data report. The shop welds hydrostatic test are not detailed on any data report or Quality Assurance Record as required by ANSI N45.2.9, Reg. Guide 1.88 and ASME Section III Article NA-4000, Sub Article NA-4500.

The NCR generated against the subject welds would provide us with the documentation necessary to adequately resolve this issue. A closed copy could be placed into each test package to provide us with the documented evidence that this condition was identified, addressed and resolved in accordance with the Quality Assurance Program requirements.

DMM/caf

NONCONFORMANCE REPORT

resolved at Colol Hydro  
Mfg. NP-1 are marked N/A

Distribution:

- White - PCAE or Site QA Supervisor
- Yellow - Organization recommending disposition
- Pink - Initiator of NCR

REPORT NO. 111 \_\_\_\_\_

INSTRUCTIONS: (See back of form)

CLIENT OR PROJECT (8)

Waterford Steam Electric Station

SUPPLIER, CONSTRUCTION CO OR CONTRACTOR (4)

Ebasco Services, Inc.

P.O. NO. (5)

N/A

DRAWING NO./SPEC NO. (3)

since this was rechecked to  
in Mfg.

DESCRIPTION OF COMPONENT, PART OR SYSTEM (6)

Safety Related ASME Section III Pipine Subassemblies

I. DESCRIPTION OF NONCONFORMANCE (7) (Items Involved, Specification, Code or Standard to Which Items Do Not Comply, Submit Sketch if Applicable)

(1) During the review of Tompkins-Beckwith Hydrostatic Test Documentation it was revealed that the shop welds manufactured by Dravo did not receive the required "Examination for leakage after the application of pressure as required by NB-6215, NC-6215 and ND-6215, of ASME Section III, 1974 Ed. through Summer of 76 Addenda.

(2) In addition no documentation exists for the required Hydrostatic Test of the shop welds as required by ANSI N45.2.9 Appendix A.5 (Hydrostatic Pressure Test results) for shop welds.

NAME AND SIGNATURE OF PERSON REPORTING NONCONFORMANCE (8)  
*James R. III Malone*

TITLE/COMPANY

DATE (9)  
10/10/83

II. RECOMMENDED DISPOSITION (10) (Submit Sketch if Applicable)

NAME AND SIGNATURE OF PERSON RECOMMENDING DISPOSITION (11)

TITLE/COMPANY

DATE (12)

III. EVALUATION OF DISPOSITION BY EBASCO, REASON FOR DISPOSITION (13)

IV. CORRECTIVE ACTION (14)  Required  Not Required

V. (15) <input type="checkbox"/> ENGINEERING	<input type="checkbox"/> QUALITY ASSURANCE	<input type="checkbox"/> CONSTRUCTION	<input type="checkbox"/> OTHER
NAME (SIGNATURE)	NAME (SIGNATURE)	NAME (SIGNATURE)	NAME (SIGNATURE)
DATE	DATE	DATE	DATE
<input type="checkbox"/> ACCEPTED <input type="checkbox"/> REJECTED <input type="checkbox"/> ACCEPTED WITH COMMENTS	<input type="checkbox"/> ACCEPTED <input type="checkbox"/> REJECTED <input type="checkbox"/> ACCEPTED WITH COMMENTS	<input type="checkbox"/> ACCEPTED <input type="checkbox"/> REJECTED <input type="checkbox"/> ACCEPTED WITH COMMENTS	<input type="checkbox"/> ACCEPTED <input type="checkbox"/> REJECTED <input type="checkbox"/> ACCEPTED WITH COMMENTS

VERIFICATION OF DISPOSITION  REQUIRED  NOT REQUIRED (16)

BY \_\_\_\_\_ SIGNATURE \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

Speed Letter. 44-902

GrayLine SNAP-A-WAY PCP11

Speed Letter.

To Mr. Tompeck / J. M. Alpine  
OHIRE

From L.V. Jagger  
RAE

Subject Hydrotest of Shop welds by Draw

MESSAGE

The signing of N-5 form with N-1 forms w/ Mfg. attached  
signifies that mfg. shop welds have been Hydro tested  
and accepted by installer ANI, thus this is not  
a non conforming condition

Date 6-10-83 Signed L.V. Jagger

REPLY

Mr. JAGGER;  
Enlosed Letter is in answer to your  
memo of 6-10-83.

(2) 6-15-83

Date Signed

ATTACHMENT 6



Atlanta Office  
The Hartford  
Steam Boiler Inspection  
and Insurance Co.

4330 Georgetown Square  
Atlanta, Georgia 30338  
(404) 457-0261

July 9, 1984



Mr. Mike Yates, Project Manager  
Ebasco Services, Inc.  
Waterford III SES  
P. O. Box 70  
Killona, Louisiana 70066

SUBJECT: HYDROSTATIC TESTING WITNESSED BY  
AUTHORIZED NUCLEAR INSPECTORS

Dear Mr. Yates:

The Hartford Steam Boiler Inspection and Insurance Company, Atlanta Regional Office, received a call from Mr. Upshure Quinby, Senior Resident Engineer, Ebasco, on July 3, 1984. Mr. Quinby's inquiry was to ascertain the degree of inspections performed by the HSB Authorized Nuclear Inspector (ANI's) during hydrostatic testing of ASME Section III, Division 1, Class 1 and 2 piping systems.

Mr. Quinby's concern was that the Tompkins-Beckwith (T-B's) hydrostatic packages did not list those welds made by the piping subassembly subcontractor (Dravo).

The writer acknowledged the above and noted that it was T-B's intent to list only those welds made by T-B as the NA/NPT Certificate of Authorization Holder.

However, it was further pointed out that isometric drawings and flow diagrams were included as part of the hydrostatic test package. These documents identified hydrostatic test boundaries and were utilized for inspection during hydrostatic testing.

Also the writer noted to Mr. Quinby that inspections were not limited to welds, whether made by T-B or Dravo. ASME Code Section III, Division 1, paragraph NB/NC6215 "Examination for Leakage After Application of Pressure" requires in part that ". . . examination for leakage shall be made of all joints, connections and of all regions of high stress . . .".

In actual practice this requirement was exceeded as the ANI's also made a complete walk-down of these systems and performed a visual inspection of test boundary surfaces and surrounding areas for evidence of leakage.

Certification by the ANI that these requirements were met is attested to in the "Certificate of Installation Inspection" block on the ASME N-5 Data Report Form for the applicable system. This certification signifies that the ANI performed the inspections required by Section III and to the best of the ANI's knowledge and belief, the Certificate Holder met all Code requirements.





Atlanta Office  
The Hartford  
Steam Boiler Inspection  
and Insurance Co.

4330 Georgetown Square  
Atlanta, Georgia 30338  
(404) 457-0261

Ebasco Services, Inc.  
Page Two  
July 9, 1984

It should also be noted that a statement was included on all N-5 Data Reports confirming that the hydrostatic test included shop fabricated welds.

As Authorized Nuclear Inspector Supervisor assigned to the Waterford III Project during the majority of this testing and responsible for technical supervision of the assigned ANI's, I have complete confidence that the Authorized Nuclear Inspectors performed the required inspections in accordance with ASME Section III requirements.

Should you need further information regarding the above inspections, please do not hesitate to contact the Atlanta Regional Office.

Yours very truly,

A handwritten signature in cursive script that reads "Barry K. Bobo".

Barry K. Bobo  
Assistant Regional Manager  
SIS Division - Atlanta

BKB/je/94

RESPONSE

ITEM NO.: 16

TITLE: Surveys and Exit Interviews of QA Personnel

NRC DESCRIPTION OF CONCERN:

In a memorandum dated January 3, 1984, R.S. Leddick, LP&L Vice President for Nuclear Operations, directed that the LP&L Quality Assurance (QA) personnel conduct interviews of the on-site contractor QA personnel to elicit any concerns the contractor staff may have regarding the quality of construction of Waterford Unit 3. That memorandum also indicated that exit interviews would be similarly conducted with the contractor personnel prior to their leaving the Waterford 3 project. A total of 407 such interviews were conducted beginning in January 1984. Individual responses were sent to the specific employee(s) who raised the concern.

Exit interviews with the contractor QA Employees (resigned, transferred, or terminated) began on January 16, 1984. A compilation of the concerns raised during those interviews were forwarded for follow-up on May 22, 1984.

The NRC staff reviewed all of the questionnaire forms and responses to the questions identified by the LP&L QA staff. In some cases, the NRC review identified additional potential issues, beyond those identified by LP&L, and responses that did not address the intent of the concerns. Nevertheless, the staff found that the majority of the concerns raised are being or have been addressed as part of all of the other NRC review efforts associated with Waterford 3.

As a result of the staff review, it is not evident that the survey and exit interviews have been vigorously pursued by LP&L to investigate the issues raised for safety significance, root cause, and generic implications. For example, the exit interviews began in January and are continuing. However, the process of reviewing the content of those interviews did not begin until late May 1984. For some of the interviews, additional information should have been obtained from the person interviewed but the interviewers did not indicate on the form whether or not they sought additional facts. Finally for a number of areas, issues or potential problems were acknowledged but it is not clear that any follow-up action occurred.

The NRC staff is concerned that the LP&L program to investigate issues does not promptly and thoroughly examine the specific areas and the programmatic implications of them. Other successful programs have utilized independently staffed groups to assess each issue raised and formally report to senior utility management on their findings and recommended corrective actions. These elements are not evident in the LP&L process. As a result, LP&L should develop and implement a formal program for handling issues raised by individuals. One of the first tasks to be dealt with by the program should be the review of the responses previously provided to the QA survey and during the exit interviews.

## DISCUSSION:

In addressing the NRC staff's concerns, we will discuss first, the LP&L interview program as initially conducted by the company, and second, LP&L's plans for this program in the future. The initial program - a new type effort within LP&L--has been helpful and effective, LP&L believes, in identifying and resolving potential quality issues. At the same time, as reflected in experience to date and in the NRC staff comments, the program can be significantly improved. Program improvements, including those recommended by the NRC, are being implemented.

### I. PROGRAM AS INITIALLY CONDUCTED

Discussion of the program is divided into six parts--establishment of the program, implementation of the program in initial QA/QC interviews, implementation of the program in exit interviews, program review, program benefits and program shortcomings.

#### A. Establishment of the Program

In December 1983, construction work on Waterford 3 was essentially complete and the project was in a construction punch list mode. System testing and system turnover activities were nearing completion, and the work force was in transition from contractor construction personnel to startup personnel and permanent plant staff. During this time frame, LP&L Management became aware, through a variety of sources, that rumors and allegations of construction quality concerns were surfacing. Management recognized that first hand information was very important in addressing such concerns and that the best source of information should be the site QA/QC personnel.

Accordingly, as an effort to identify and resolve such concerns, LP&L Management promptly established in early January 1984, a program to interview all on-site QA/QC personnel and to interview such personnel thereafter when they were leaving the site. The objectives of this program were twofold:

1. Identify and resolve QA/QC concerns, in particular concerns of potential safety problems.
2. Communicate to these personnel, if they desired, the disposition of their concerns.

This program was a new, voluntary effort of a type not previously undertaken by the company; it was not an NRC requirement, nor was it part of a prior commitment.

The decision to establish the QA/QC interview program was made by the Senior Vice President - Nuclear Operations after being proposed by the Corporate Quality Assurance Manager. LP&L QA was assigned the responsibility to conduct such a program. Prime responsibility for program implementation was assigned to a senior member of the Corporate QA Staff with 22 years experience in the utility industry. He was assigned by the LP&L Corporate Quality Assurance Manager as the principal interview team leader and is widely respected for his competence and professionalism. Reflecting his capability, that interview team leader was also designated by LP&L as Construction Appraisal Team coordinator for the company.

B. Implementation of the Program in Initial QA/QC Interviews

The program commenced on January 3, 1984. On that date, the LP&L Senior Vice President - Nuclear Operations issued a memorandum (Attachment 1) to Waterford 3 QA/QC personnel advising them that LP&L QA would, at his direction, be conducting interviews with QA/QC personnel. It was further directed in the letter that the plan was to conduct interviews with QA/QC personnel prior to their leaving the site, and that the objective was to identify quality concerns these individuals might have.

The initial interviews of QA/QC personnel were begun on January 5, 1984. During this initial phase, 407 people involved in Quality Assurance and Quality Control functions were interviewed. Those interviewed are believed to have included all LP&L QA/QC personnel as well as Ebasco and subcontractor QA/QC personnel on site.

Interviews were conducted principally by two-man teams of LP&L QA personnel. The Corporate Quality Assurance Manager briefed the interviewers prior to the interviews and stressed that the objective was to obtain as much information as possible and that they should not intimidate, or appear to intimidate, the interviewees.

Interviews were intended to be conducted in the following general manner:

- ° Interviewee was shown a copy of the memorandum from the Senior Vice President-Nuclear Operations.
- ° Interviewee was given the option to remain anonymous.
- ° Interviewee was asked questions contained in a questionnaire prepared by LP&L QA. The questionnaire included general questions inviting comments on quality concerns the interviewee wished to discuss. Responses were recorded on the questionnaire by one of the interviewing team members. In most cases, the interviewee signed the questionnaire.
- ° The interviewee was told he would be provided a copy of the response to his concerns if he so desired.



The program, as implemented, was not designed to be and was not auditable in the sense that all related corrective actions were documented and easily traceable. Thus, while concerns were evaluated and action was initiated as deemed appropriate, the questionnaire itself did not include a space for disposition of the concern.

As the initial interviews were proceeding, interview comments were being contemporaneously reviewed by the interview team leader to determine:

1. If a concern expressed by the interviewee required addressing from a safety significance standpoint;
2. If the concern had generic implications; and
3. If the interviewee desired a response to his concerns.

Again, while this review in fact was performed, systematic records were not maintained. However, concerns detected were handled as indicated below.

Of the 407 individuals interviewed, approximately two thirds expressed no concerns. For the remainder, the interview team leader identified 72 potentially safety related concerns (some concerns were referenced by more than one individual).

One of these concerns was answered orally. As for the remaining 71 concerns, the interview team leader presented these to the Corporate Quality Assurance Manager, and LP&L then requested and obtained formal written responses to these concerns from the persons believed to be best able to respond. The concerns were consolidated in five requests for response as follows:

- ° Letter W3K84-0059 dated 1/11/84, from LP&L Corporate Quality Assurance Manager to Ebasco QA, listing 15 concerns;
- ° Memorandum W3K84-0069 dated 1/12/84, from LP&L Corporate Quality Assurance Manager to LP&L Plant Manager, listing 13 concerns;
- ° Memorandum W3K84-0097 dated 1/16/84, from the interview team leader to LP&L Corporate Quality Assurance Manager, listing 4 concerns;
- ° Letter W3K84-C108 dated 1/17/84, from LP&L Corporate Quality Assurance Manager to Ebasco QA, listing 25 concerns;
- ° Letter W3K84-0109 dated 1/17/84, from LP&L Corporate Quality Assurance Manager to Ebasco QA, listing 14 concerns.

In the letters and memoranda, LP&L QA set out the concerns essentially as stated by the interviewees, with only minor changes.



As reflected by the dates of these letters and memoranda, they were sent within a week of completion of the interviews. Thus, in January, 1984 LP&L interviewed 407 individuals, evaluated their concerns, and developed and sent written requests for formal responses for 71 concerns determined to require such response.

Responses to the letters and memoranda were coordinated between the individuals preparing a response and LP&L QA. Written responses were provided for all concerns, as follows:

- ° Letter W3QA-27541 dated 1/17/84 from EBASCO QA to the LP&L Corporate Quality Assurance Manager.
- ° Memorandum W3Q84-0010 dated 2/11/84 from the LP&L Plant Manager to the LP&L Corporate Quality Assurance Manager.
- ° Letter W3QA-27570 dated 1/25/84 from EBASCO QA to the LP&L Corporate Quality Assurance Manager.
- ° Letter W3QA-27567 dated 1/25/84 from EBASCO QA to the LP&L Corporate Quality Assurance Manager.
- ° Memorandum W3K84-0170 dated 3/2/84 from the LP&L Corporate QA Manager to the LP&L interview team leader.

As the responses were finally developed, 13 concerns were deemed to require corrective action, which was initiated through formal project procedures. The 13 concerns deemed to have required corrective actions can be categorized as:

- ° Four required procedural revisions or issuance of new procedures.
- ° Five required individual and/or groups of nonconformance reports to be reviewed.
- ° Three required some type of records review to be accomplished.
- ° One required a limited inspection.

Of these concerns, corrective action for ten have been completed. The balance are scheduled to be completed prior to fuel load, as referenced in the five response letters listed above.

Fifty-eight concerns were deemed not to require corrective action by the responding organization. In several instances, additional information was required from the interviewee for a full response. In these cases, the interview team leader sought such information; however, the interviewee generally did not provide it.

During the course of this interview and review process, the Corporate Quality Assurance Manager kept the Senior Vice President-Nuclear Operations generally informed of the program's progress and of the overall results. This was done without detailed written reports.

The process, including identification of generic concerns, can be illustrated by the treatment of the following concern:

Review of NCRs. Several interviewees questioned whether particular NCRs had been properly dispositioned. LP&L QA considered this to be a generic issue and, indeed, it was one that LP&L previously had independently identified. Based on the independent identification, LP&L was considering conducting an extensive NCR review. The fact that several QA/QC personnel also raised this concern specifically confirmed for LP&L QA that such a review should be undertaken and the review was begun in February, 1984.

C. Implementation of the Program in Exit Interviews

In addition to initial interviews in January 1984 of on-site QA/QC personnel, the LP&L program requires interviews of QA/QC personnel leaving the site. Such interviews were commenced on January 16, 1984, and are continuing. Through July 1, 1984, a total of 174 interviews has been conducted. The format and procedure for the exit interviews has been the same as for the initial interviews; however, the response process was longer in duration.

Regarding the response process, the interview team leader reviewed the interview notes promptly after they were recorded to determine whether immediate action was required for the particular concern. On February 10, 1984, the first concern requiring a response was raised in an exit interview. Between then and May 22, 1984, 12 additional such concerns were raised. In each instance, the interview team leader made determinations that a response would be required, but that immediate action was not necessary. On May 22, 1984, these concerns were consolidated and listed in a letter (W3K84-1217) from LP&L to Ebasco QA and a formal response was requested. A response (letter W3QA-28213) was issued by Ebasco QA on June 17, 1984. Of these concerns, one concern was deemed to require corrective action, which has been accomplished. The delay in seeking formal responses in no way shows lack of concern (as has been suggested); rather, it reflects simply a perceived lack of safety need for immediate response and a perception that other matters (CAT, Task Force) required priority attention.

The exit interview program continues, and since May 22, 1984, five concerns requiring responses have been identified. Reflecting the NRC staff's expression of concern in the June 13, 1984 letter and LP&L's own reanalysis, LP&L compiled a listing of these concerns in memoranda W3K84-1517 dated July 2, 1984 and W3K84-1458 dated July 3, 1984. LP&L has requested the Quality Team (see Part II, below) to obtain responses to these concerns.

D. Program Review

Following the NRC letter of June 13, 1984, several relatively quick internal reviews have been made of the interview program to date. The interview team leader, for instance, reviewed his own determinations. Further, LP&L's Independent Safety Engineering Group conducted a review. As a result of these reviews, one additional concern having potential safety significance was identified which required review and response. That concern related to Hilti bolts and was the subject of response request Letter W3K84-1466 dated June 25, 1984 to Ebasco QA (this letter also sought a formal response to the concern which the interview team leader had answered orally). Ebasco QA responded via Letter W3QA-28220 dated July 6, 1984 to the LP&L Corporate QA Manager. The Hilti Bolt concern was recommended to require no corrective action.

In addition to these internal reviews, and as suggested by the NRC staff, an external organization is conducting a thorough review of all interviews to date and their disposition to assure that all concerns are identified, thoroughly developed and resolved. The external review is discussed further in Part II below.

E. Program Benefits

The interview program as conducted by LP&L, clearly has been of benefit to LP&L. The very fact that LP&L instituted a program is helpful in that the effort to date has convinced LP&L that such an interview program can be an effective and valuable tool in identifying and resolving potential safety concerns. Further, QA/QC personnel, in fact, were systematically interviewed for expressions of quality concerns. The vast majority of individuals expressed no concerns. For those who raised concerns, those concerns were addressed, corrective action was taken as deemed necessary, and explanations of disposition were given to individuals desiring this. The program, in short, has established and institutionalized an additional channel for communications within LP&L of potential safety concerns.

F. Program Shortcomings

While the program has been beneficial, it also has had shortcomings. The most significant of these have been the following:

1. The program was not established to be auditable, i.e., all reviews and actions taken were not documented and are not readily traceable.
2. No formal procedure was established for the program (this, for example, allowed for the lack of detailed written reports to upper management).
3. The program was conducted by in-house personnel who were not trained interviewers.
4. A more thorough review of the responses might have uncovered more concerns or modified the concerns which were recognized.



LP&L believes that these program shortcomings are addressed and resolved by the program revisions instituted by LP&L as described in Part II below.

## II. CORRECTIVE ACTION PLAN/SCHEDULE

LP&L, in agreement with the NRC staff, believes that the existing program can be significantly enhanced. Reflecting its commitment to the program, LP&L had adopted the following program modifications:

- A. The enhanced interview program initially will be conducted by an independently managed organization. LP&L has selected Quality Technology Company for this effort. Quality Technology is responsible for a similar program at the Wolf Creek Generating Station in Kansas. Quality Technology's personnel include both individuals who have technical expertise regarding nuclear power plants and individuals with substantial experience in interview techniques. The head of the Waterford 3 "Quality Team" (as the program has been designated) for Quality Technology will be Mr. Scott Schum. Mr. Schum is a former NRC Senior Resident Inspector, and he has a solid reputation within the industry. The "Quality Team" commenced its operations onsite at Waterford 3 on July 6, 1984. It will be responsible for soliciting and receiving quality concerns and providing these concerns to the appropriate manager for analysis and corrective action, as required, and for response back to the Quality Team.
- B. LP&L will closely monitor the program. First, the program has been made auditable in form, i.e., all concerns and analyses and dispositions thereof will be documented in a readily traceable manner. LP&L QA will conduct regular program audits. Second, "Quality Team" personnel will initially report on Quality Team activities and concerns received at least weekly, to the Senior Vice President-Nuclear Operations with copies to the LP&L Corporate Quality Assurance Manager. Monthly Summary reports will encompass the concerns expressed by interviewees and the status of the disposition of those concerns. Analyses of the safety significance, cause and generic implications will be performed for those concerns which are substantiated, and the results of such analyses will be promptly reported to LP&L Management. Concerns deemed to require immediate action will be immediately brought to the attention of LP&L Management.
- C. A procedure for the program was formally issued on July 13, 1984. This detailed procedure was prepared by the Quality Technology Company and was reviewed and approved by LP&L Management. The interview portion of the program has already commenced and the remainder of the program is currently being phased into full implementation.
- D. The program has been expanded in scope. Exit interviews to date have been conducted only with QA/QC personnel. The exit interview program in the future will be applied to all appropriate onsite personnel, both of LP&L and Contractors, who are leaving.

- E. Quality Technology's first responsibility, along with setting up the exit interview program and conducting interviews, is to review the concerns expressed in the interviews conducted to date by LP&L personnel. This review will cover both the initial LP&L interviews of January 1984, and the exit interviews subsequently conducted. Quality Technology has been directed to analyze interviews thoroughly for additional potential concerns and the cause and generic implications of all concerns, to follow-up on matters deemed to require further information, and to open a file for each individual's concern expressed and document specifically their dispositions. This effort, will be completed prior to escalation above 5% power.

CAUSE:

See paragraph I.F. above.

SAFETY SIGNIFICANCE:

To date all recognized items of safety significance found as a result of the interviews are felt to have been adequately addressed. On this basis, there is no recognized reason that this issue should constrain operation at 5% power. This will be validated prior to escalation above 5% power. Additionally any further safety concerns found as a result of the review specified in paragraph II.E. above, the resolution of which are required prior to power exceeding 5%, will be evaluated prior thereto.

GENERIC IMPLICATIONS:

None recognized to date.

The NRC can be assured that the company is vitally interested in having as effective and thorough an interview program as possible. The company believes that the program as initiated has been beneficial. As with any new effort, however, the company has learned from its experience, as well as from the comments of the NRC; and the company has strengthened the program accordingly. The revisions and additions to the initial program are extensive and reflect LP&L's commitment to the program.

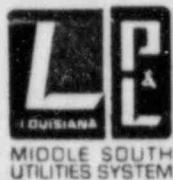
ATTACHMENTS:

(1) 1/3/84 memorandum from R.S. Leddick

REFERENCES:

None





**LOUISIANA**  
**POWER & LIGHT**

142 DELARONDE STREET • P.O. BOX 6008  
NEW ORLEANS, LOUISIANA 70174-6008 • (504) 366-2345

*ROTH S. LEDDICK*  
*Senior Vice President*  
*Nuclear Operations*

January 3, 1984

W3K84-0005  
Q3-A35.01

TO: QA Personnel  
FROM: R. S. Leddick  
SUBJECT: Interviews

The purpose of this letter is to advise you that, during the next two weeks, LP&L QA personnel will be conducting interviews with Ebasco and other onsite QA personnel. This is being done at my direction in order to identify any quality concerns that you may have. We also plan to conduct Exit Interviews with you prior to your leaving the Waterford Project. During these interviews, you should feel free to express any quality concerns you may have. No one need fear retribution for anything disclosed during the interview and you can remain anonymous if you wish.

LP&L intends to construct and operate Waterford 3 as safely as possible. Your help in achieving this goal will be greatly appreciated.

  
R. S. Leddick

RSL/cb

cc: Interviewees

## RESPONSE

ITEM NO.: 19

TITLE: Water in Basemat Instrumentation Conduit

### NRC DESCRIPTION OF CONCERN.

In examining the safety significance of the allegations, the NRC staff performed system walkdowns as a means of verifying the as-built conditions. During one of those walkdowns, the staff noted that there was water in an electrical conduit that penetrated the basemat. If the seals in that conduit should fail there is a potential direct path for ground water to flood the auxiliary building basement. LP&L should review all conduit that penetrates the basemat and terminates above the top of the basemat to assure that these potential direct access paths of water are properly sealed.

### DISCUSSION:

During the construction period, several permanent conduits embedded in the basemat were observed to seep water at the stub-up couplings. None of them leaked in a quantity sufficient to cause flooding concerns during construction.

Silicone foam seals were placed in these conduits beginning in late 1983.

In May, 1984, a walkdown, as described in Attachment 1, was performed by Ebasco which identified 28 places where wetness due to seepage from conduits was found and 12 places where evidence of past leaking from conduits was found. These cases will be addressed by LP&L by removing the existing seals and replacing them with a light density silicone elastomer which has the capability to stop the seepage as required. This work will be performed as a routine maintenance item as directed by the Plant Operations Staff, since the slow seepage through the seals is a maintenance inconvenience and not a flooding hazard. This is reflected in Attachment 1.

The 12 sheet table that is part of Attachment 1 is in fact 2 related listings. The first 2 sheets list 36 items (27 conduits and 9 pull boxes). These items were checked off in the listing as either having a leak or giving evidence of once having a leak. The remaining 10 sheets detail what conduits come into each of the 9 pull boxes listed on the first 2 sheets (Items 4,5,7,9,10,23,27,28 and 32). These 10 sheets have listed on them 56 conduits which when combined with the 27 conduits on the first 2 sheets makes a total of 83 identified conduits. (Note: Attachment 1/Paragraph I indicates that 8 pull boxes were identified. Subsequent to issuance of Attachment 1, additional conduits and a pull box were added to the table. The table that is now part of Attachment 1 is the updated version and the above numbers are correct.)

Temporary conduits which enter the basemat from outside, and which once allowed passage of ground water in quantities that required periodic pumping, have now all been pressure grouted as part of the normal design requirement and their temporary blockout pits filled with concrete as shown on Drawing LOU-1564-G-499 S09. Therefore, they no longer serve as leak paths for ground water.

Attachment 2 discusses the sealing of a piezometer riser and a piezometer standpipe. The piezometer riser (Item 8 of Attachment 1) consists of piezometers in a conduit down in the aquifer (surrounded by a well pipe). The conduit was internally sealed behind the piezometers and was sealed again in the portion of conduit that transverses the basement. As recommended in Attachment 2, this conduit will be sealed with a light density silicone elastomer since two of the piezometers are still operable. The piezometer standpipe is basically a well pipe filled with water under pressure from the aquifer with piezometers attached at the -35 level. Since this standpipe is no longer needed, it will be pressure grouted prior to fuel load. The location of the riser is just south of the J wall, between 5A and 6A (i.e., in corridor south of EFW pump A - see FSAR Figure 1.2-11). The location of the standpipe is north of the L wall, between 6A and 7A (i.e., in the radioactive pipe chase - see FSAR Figure 1.2-19).

#### CAUSE:

Except in the case of the piezometer riser, the seal material in place does not provide total waterstop characteristics.

#### GENERIC IMPLICATIONS:

There are no generic implications since the potential paths for ground water to flow in appreciable quantities had already been addressed.

#### SAFETY SIGNIFICANCE:

There was never a path for ground water to flow in sufficient quantity to flood the auxiliary building basement, even before the seals were installed and before the temporary conduits were grouted. The floor drain and sump pump system was more than adequate to handle the quantity of water which entered the building during construction, and is adequate to handle the much reduced quantity presently observed, most of which evaporates before ever reaching a floor drain. On this basis, there is no recognized reason that this issue should constrain fuel load or power operation.

#### CORRECTIVE ACTION PLAN/SCHEDULE:

As stated above, there is no safety significance associated with this issue. Corrective action will be taken as part of good construction practice. The decision to replace the seals on the conduits will be based strictly on operating and maintenance considerations. Any replacement seals will consist of a light density silicone elastomer which has the capability to stop the seepage.

#### ATTACHMENTS:

- (1) Memorandum ES-9160-84 of May 18, 1984
- (2) Memorandum ES-9409-84 of June 1, 1984

REFERENCES:

- (1) Drawing LOU-1564-G-499 S09
- (2) FSAR Figure 1.2-11
- (3) FSAR Figure 1.2-19

## ATTACHMENT 1

## M E M O R A N D U M

May 18, 1984  
 ES-9160-84

To: J. Houghtaling

From: ~~J. T. Grillo~~ *JTG*

Subject: LOUISIANA POWER & LIGHT COMPANY  
 WATERFORD SES - UNIT NO. 3  
WATER SEEPAGE FROM CONDUITS,  
ELEVATION -35

In accordance with your request, Civil and Electrical ESSE conducted a walkdown of the conduits which penetrate the mat at Elevation -35 of the RAB, FHB and Cooling towers to determine which conduits are leaking water. At the same time NYEE was requested to review the type of material that could be employed to seal the conduits and eliminate seepage of water onto the floor.

The results of this study are as follows:

I. Results of Walkdown

A comprehensive walkdown of all conduits which penetrate the Mat at Elevation -35 revealed either seepage of water or evidence that water has leaked from 76 of these conduits. The attached table provides a complete listing of the affected conduits including their location and cables contained. A large number of these conduits (53) penetrate the Mat and enter floor mounted pull boxes. There are eight such pull boxes that have been identified.

II. Results of NYEE Study

NYEE was requested to review this problem and identify the type of fix that would prevent water from penetrating these conduits. It was determined that sealing the conduits with Light Density Silicone Elastomer (LDSE) which has been provided by B&B in accordance with existing specification LOU 1564.249W will prevent the seepage of water through the conduits.

Assuming the water table to be equal to grade elevation of +17.5 feet and the affected conduits end flush with slab elevation -35 feet (worse case), the pressure on top of the conduit opening can be calculated as follows:

Pressure (PSI) = Head (ft.)/2.31(ft/psi) where  
 Head (ft.) =  $d_1 - d_2$ , therefore

Pressure (PSI) =  $17.5 - (-35) / 2.31$  or 22.7psi

A four (4) inch thickness of LDSE has been tested by B&B to be a fire rated seal and a hydrostatic seal rated for 20 psi.



J. Houghtaling

- 2 -

May 18, 1984  
ES-9160-84

Since the pressure on the conduit is 22.7psi, it is recommended that a six (6) inch thickness of LDSE in each conduit end will provide a margin for flooding at grade elevation. The existing Silicone Foam fire barrier material must be completely removed prior to pouring the LDSE. Also, upon curing the LDSE becomes hard and can only be removed by using a chisel.

It should be noted that the seepage of water onto the floor of Elevation -35 through these conduits is not an immediate hazard to the safety of the plant or its personnel, but rather a nuisance to maintenance. On this basis, it is recommended that replacement of the Silicone foam fire barrier material with the LDSE be scheduled as a post fuel load task at a time convenient to LP&L.

JTG/kw

cc: J. F. Montalbano  
J. Costello  
J. DeBruin  
C. Ruiz  
R. Vidal

CLIENT: LOUISIANA POWERS & LIGHT

PROJECT: WATERFORD S.E.S. #3

SUBJECT: ENHANCED CONDUIT INVESTIGATION

OFF NO.

BY

CHECKED BY

DEPT. NO.

DATE

NOTE

ITEM NO.	LINE NO OR BOX NO	CONDUIT SIZE	APPROX LOCATION	DESCRIPTION		FROM TO	CABLE TYPE	VOLTS	CABLE NO
				LEAK	EVIDENCE				
1	35075	2"	W. OF WALL ON 17A, BETW. H & J	✓		CAP NEAR J/11A			
2	30370A	4"	DITTO	✓		B3175-N/B SWGR 3A8315 480V(4) CHG. P. "AB" (CH-3)	3/C #107 (025-03)	POWER	30370A
3	30873A	2"	S. OF SUMP IN WASTE TANK A	✓		B3267-N/A	3/C #5 (025-09)	POWER	30873A
4	B3278	3"	E. OF WALL ON 6A, INJECT. PUMP AREA "B"	✓		W OR IK5MP #11A SEE SHEET-3			
5	B3279	3"	DITTO	✓		SEE SHEET-4			
6	30863B	2"	DITTO	✓		B3176-N/B REAC. OR P. FD SMP #5A	3/C #8 (012-09)	POWER	30863B
7	B3753	2"	W. OF WALL ON 10A, INJECT. PUMP AREA "B"	✓		SEE SHEET-6			
8	4" RISER PIEZOMETER	4"	3:0 S. OF J.	✓					
9	B3170	3"	3:0 W. OF 6A	✓		SEE SHEET-7			
10	B3271	3"	E. OF WALL ON 6A, INJECT. PUMP AREA "A"	✓		SEE SHEET-8			
11	33537	2"	DITTO	✓		CAP NEAR H/4A (5P)			
12	700208 16MP. POWER CONDUIT	4"	S. OF WALL ON H, BETW. 4A & 5A	✓		B3277-N/B			
13	30876E	2"	S. OF WALL ON V, W. OF 2P. - P.H.A.	✓		B3168-N/A	3/C #11 (050-03)	CONTROL	30876E, G, N.
14	30340	2"	W. OF WALL ON 1M, BETW. V & W. C.T. NENT TO N.W. INTR. S.A. MAKE-UP TANK "D" INSIDE CHARGE PUMP ROOM - 1P.	✓		B3174-N/A P101-5A13403	1/C #4 (015-07)	POWER	30340A
15	30370A	4"	INSIDE CHARGE PUMP ROOM - 1P.	✓		SWGR 3A8315 480V(4) CHG. P. "AB" (CH-3)	3/C #107 (018-08)	POWER	30370A
16	38011	2"	S.W. OF CON. LINES 5A & 15	✓		CAP NEAR K/5A (3P) CAP NEAR K/6A			

CLIENT: LOUISIANA POWER & LIGHT  
 PROJECT: WATERLOO - S.E. 2, #3  
 SURVEY: EMBEDDED CONDUIT INVESTIGATION

DEPT. NO. \_\_\_\_\_  
 DATE \_\_\_\_\_  
 CHECKED BY: MK

ITEM NO.	LINE NO. OR BOX NO.	CONDUIT SIZE	APPROXIMATE LOCATION	DESCRIPTION	LEAK EVIDENCE	FROM TO	CABLE TYPE	VOLTAGE	CABLE
17	30851V	2"Ø	BETW. 4A & 5A, NEXT TO SUMP.	✓		C201B SA13507 CCW M-U P-A	-	-	CABLE NP
18	3710Z	2"Ø	S.E. OF COL LINES 4A & K	✓		B3197-5AB GOV CNTL PH4	1/2"Ø 1851 (012-06)	101V	3154/H
19	30686A	2"Ø	DITTO	✓		L205A NB: B304 TIE-1651	1/2"Ø 1457 (012-01)	101V	30686A
20	30872V	2"Ø	S. OF WALL ON L, DRAIN & SUMP.	✓		A3759-NA B30276-NA	1/2"Ø #14 (050-03)	CONTROL	30872V, D, G, N, J
21	30872B	2"Ø	DITTO	✓		EQUIP OR SMP #18 B3176-N/S	3/2"Ø #8 (015-09)	POWER	30872B
22	30528A	2"Ø	N. OF WALL ON L, BETW. 9A & 10A.	✓		P107-5B3798 MY251 V:3484 (51-646)	3/2"Ø #8 (015-69)	POWER	30528A
23	B3319	2"Ø	S. OF COL. ON COF. LINE- 9A & M	✓		SEE SHEET 9			
24	30516A	2"Ø	N. OF WALL ON L, BETW. 8A & 9A	✓		B3317-5A MY251 V:809A (51-608)	3/2"Ø #8 (015-69)	PHR	30516A
25	30516B	2"Ø	DITTO	✓		B3318-5A MY251 V:809A (51-608)	3/2"Ø #14 (050-07)	CONTL	30516B
26	38001	2"Ø	N. OF WALL ON L, BETW. 7A & 8A	✓		SEE SHEET 10			
27	B3318	2"Ø	S. OF COL. ON COL LINE 6A & L Y.	✓		SEE SHEET 11			
28	B3317	2"Ø	DITTO	✓		SEE SHEET 11			
29	30877B	2"Ø	E. OF A.D. SUMP. W. OF WALL ON 17A & 18A	✓		MCC 3A 314-5 (57) SIG. TWR. AREA REGRMP #12	3/2"Ø #8 (015-69)	POWER	30877B
30	33095	3"Ø	S.W. CORNER OF WALL ON 17A & 18A - C.T.	✓		NOT AVAILABLE			
31	TEMP. POWER CONSTR.	4"Ø	N. OF WALL ON R, BETW. 17A & 17M - C.T.	✓		SEE SHEET 12			
32	B3315	2"Ø	6A & 12" N. OF J	✓					
33	30867A	2"Ø	S.E. OF 3A / 4A	✓		B3270-NA RAB SMP #3A	3/2"Ø #8 (015-09)	POWER	30867A
34	30406A	2"Ø	11' E. OF 6A / 11' E. OF N. BRK	✓		B3270-NA RAB SMP #3A	3/2"Ø #8 (015-09)	POWER	30406A
35	35314	2"Ø	7' E. OF 9A / 8' E. OF 9A	✓		B3277-NB RAB NA K9A (SP)	-	-	30406A
36	38010-8A6	2"Ø	SOUTH WALL OF CHASE AM Hall CHASE	✓		B3282-5AB (SP) CAP IN T3A	-	-	-



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ITEM NO.	CONDUIT No.	SIZE	FROM/ TO	CABLE TYPE	VOLTAGS	CABLE No.
4	B3278-N/B 30865F-N/B	2	B3278-N/B B3751-NA	3/C #14 (050-04)	CONTROL	30865F
	30883F-N/B	2	B3278-N/B B3748-NA	3/C #14 (050-04)	CONTROL	30883F
	35086-N/B	2	B3278-N/B (5P) CAP NEAR K/4A	-	-	-
	30884F-N/B	2	B3278-N/B B3457-NA	3/C #14 (050-04)	CONTROL	30884F
	35087-N/B	2	CAP NEAR J/5A (5P) B3278-N/B	-	-	-
	30871F-N/B	2	B3749-NA B3278-N/B	3/C #14 (050-04)	CONTROL	30871F
	30867F-N/B	2	B3278-N/B B3442-NA	3/C #14 (050-04)	CONTROL	30867F
	35092-N/B	2	CAP NEAR H/4A (5P) B3278-N/B	-	-	-

ORIGINAL

ITEM NO.	CONDUIT No	SIZE	FROM/ TO	CABLE TYPE	VOLTAGE	CABLE No
5	B3279-NB 30441A-NB	2	B3279-NB HLDP DR P	1/c #8 (025-08)	POWER	30441A
	33085-NB	2	CAP NEAR J/5A (SP) B3279-NB	-	-	-
	30883B-NB	2	OIL SMP #3B B3279-NB	3/c #8 (025-09)	POWER	30883B
	30442A-NB	2	B3279-NB HLDP RCRLG P	1/c #8 (025-08)	POWER	30442A
	30871B-NB	2	B3279-NB BA RM SMP #9B	3/c #8 (025-09)	POWER	30871B
	30469A-NB	2	B3279-NB BA COND P "B" (BAC-B)	1/c #8 (025-09)	POWER	30469A
	33086-NB	2	B3279-NB (SP) CAP NEAR K/4A	-	-	-
	30867B-NB	2	B3279-NB RAB SMP #3B	3/c #8 (025-09)	POWER	30867B

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ITEM NO.	CONDUIT No.	SIZE	FROM/ TO	CABLE TYPE	VOLTAGE	CABLE No.
5	83279 (CONT.) 30865B-NB	2	B3279-NB SIRM "A/B" SMP # 7B	3/4 # 8 (0225-09)	POWER	30865B
	33532-NB	2	CAP NEAR N/4A (5P) B3279-NB			
	30884B-NB	2	B3279-NB DSL OIL STG TK OSMP # 1B	3/4 # 8 (0225-09)	POWER	30884B

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ITEM NO.	CONDUIT No	SIZE	FROM/ TO	CABLE TYPE	VOLTAG	CABLE No.
7	B375B-NA 30866E-NA	2	B3266-NA B375B-NA	3/4 #14 050.04 2/0 #14 050.03	CONTROL	30866E
	30866F-NA	2	B3275-NA B375B-NA	3/4 #14 080.04	CONTROL	30866F
	30866V-NA	2	B375B-NA B3818-NA	2/0 #14 050.03	CONTROL	30866C, D, G, H, J.

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ITEM NO.	CONDUIT No	SIZE	FROM/ TO	CABLE TYPE	VOLTAGE	CABLE No
9	B 3370	2	B 3271-NA	3/C #14	CONTROL	30884E
	30884E-NA		B 3457-NA	2/C #14		
	30872E-NA	2	B 3271-NA	3/C #14	CONTROL	30872E
			B 3759-NA	2/C #14		
	30883E-NA	2	B 3271-NA	3/C #14	CONTROL	30883E
			B 3748-NA	2/C #14		
	30867E-NA	2	B 3271-NA	3/C #14	CONTROL	30867E
			B 3442-NA	2/C #14		
	30863E-NA	2	B 3271-NA	3/C #14	CONTROL	30863E
			B 3750-NA	2/C #14		



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ITEM NO.	CONDUIT No	SIZE	FROM/ TO	CABLE TYPE	VOLTAGE	CABLE No
10	B3271-NA 30872A-NA	2	ED SMP #1A B3271-NA	3/C #8 025-09	POWER	30872A
	30867A-NA	2	B3271-NA RAB SMP #3A	3/C #8 025-09	POWER	30867A
	30883A-NA	2	01L SMP #3A B3271-NA	3/C #8 025-09	POWER	30883A
	30863A-NA	2	B3271-NA REAL DR PFL OR SMP #5A	3/C #8 025-09	POWER	30863A
	30884A-NA	2	B3271-NA DSL 01L STG TK Q5MP #1A	3/C #8 025-09	POWER	30884A
	30406A-NA	2	B3271-NA REAL DR TK P	3/C #8 (025-08)	POWER	30406A



BY \_\_\_\_\_ DATE \_\_\_\_\_

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ITEM NO.	CONDUIT No.	SIZE	FROM/ TO	CABLE TYPE	VOLTAGE	CABLE No.
23	B3319-5B 30542A-5B	2	P102-5B:3708 MV 25I-V1549B1 (5I-675)	3/c #8 025-09	PWR	30542A
	38001-5B	2	B3319-5B CAP NR 4Y/7A	-	-	-
	30526A-5B	2	P102-5B:3708 MV 25I-V1540B7 (5I-676)	3/c #8 025-09	PWR	30526A
	30541A-5B	2	P102-5B:3708 MV 25I-V1549A1 (5I-615)	3/c #8 025-09	PWR	30541A
	30528A-5B	2	P102-5B:3708 MV 25I-V1544B4 (5I-646)	3/c #8 025-09	PWR	30528A
	30527A-5B	2	P102-5B:3708 MV 25I-V1547B3 (5I-636)	3/c #8 025-09	PWR	30527A
	38018-5B	2	B3319-5B CAP NR 2207	-	-	-
	30525A-5B	2	P102-5B:3708 MV 25I-V1545B1 (5I-616)	3/c #8 025-09	PWR	30525A

BY \_\_\_\_\_ DATE \_\_\_\_\_

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GFS NO. \_\_\_\_\_

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DEPT. NO. \_\_\_\_\_

ITEM NO.	CONDUIT No	SIZE	FROM/ TO	CABLE TYPE	VOLTAGE	CABLE No
27	B3318-SA 30522B-SA	2 1	B3318-SA MV 25I-V1546A2 (SI-627)	9/c #14 050-07	CONTROL	30522 F
	30516B-SA	2	B3318-SA MV 25I-V809 (SI-648)	9/c #14 050-07	CONTROL	30516 F
	30521B-SA	2	B3318-SA MV 25I-V1550A (SI-617)	2/c #185T 083-06	LOW LEVEL	30521 M
	30524B-SA	2	B3318-SA MV 25I-V1548A4 (SI-647)	9/c #14 050-07	CONTROL	30524 B
	30544L SA	2	B3318-SA MV 25I-V1543B2	9/c #14 050-07	CONTROL	30544 B
	30523B SA	2	B3318-SA MV 25I-V1542AB (SI-637)	9/c #14 050-07	CONTROL	30523 B

PROJECT \_\_\_\_\_  
SUBJECT \_\_\_\_\_

ITEM NO.	CONDUIT No	SIZE	FROM/ TO	CABLE TYPE	VOLTAGE	CABLE No
28	B3317-5A 30544A-5A	2	B3317-5A MV25I-V543B2	3/c #8 025-09	PWR	30544A
	30516A-5A	2	B3317-5A MV25I-V809A (SI-668)	3/c #8 025-09	POWER	30516A
	30522A-5A	2	B3317-5A MV25I-V1546A2 (SI-627)	3/c #8 025-09	POWER	30522A
	30524A-5A	2	B3317-5A MV25I-V1548A4 (SI-647)	3/c #8 025-09	POWER	30524A
	30521A-5A	2	B3317-5A MV25I-V1550A1 (SI-617)	1/c #8 025-08	POWER	30521A
	30523A-5A	2	B3317-5A MV25I-V1542A3 (SI-637)	3/c #8 025-09	POWER	30523A

BY \_\_\_\_\_ DATE \_\_\_\_\_  
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EGASU SERVICES INCUR/FURNISHED



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ITEM NO.	CONDUIT NO.	SIZE	FROM TO	CABLE TYPE	VOLTAGES	CABLE No.
32	B3751-NA 308658-NB	2	B3279-NB SI-ARM "H8" SMP #78	3/C #8 (D25-09)	POWER	308658
✓ with 100	30865F-NB	2	B3278-NB B3751-NA	3/C #14 (D50-04)	CONTROL	30865F
	30865V-NA	2	B3751-NA B3820-NA	2/C #14 (D50-03)	CONTROL	30865C, D, G, H, J



MEMORANDUMJune 1, 1984  
ES-9409-84

TO: J. Houghtaling

FROM: B. Grant *W.B. for J.G.*

SUBJECT: LOUISIANA POWER & LIGHT COMPANY  
WATERFORD SES - UNIT NO. 3  
WATER SEEPAGE FROM PIEZOMETERS IN BASE MAT

Reference: Memo ES-9160-84 of 5-18-84, Grillo to Houghtaling, "WATER SEEPAGE FROM CONDUITS, ELEVATION - 35"

Item 8 of the attachment to referenced memo identifies a leaking 4" riser for piezometers, as shown on drawing LOU-1564-G-499S09, Detail "X".

Two of the piezometers in this riser are still operating and they should continue in service so long as they give readings. Application of LDSE sealing foam as recommended in the memo will not interfere with continued service.

There is also a piezometer standpipe, No. P-23, which is shown on the same drawing, and which was not included in the referenced memo because it is not a conduit and does not leak.

This standpipe also requires sealing even though it does not leak at present, since its utility is over (it monitors a deep aquifer of no present interest) and in its present configuration (full of water under pressure) represents a potential leak path if it were to be broken by accident or corrosion.

It should be sealed by injection of pressure grout in sufficient quantity to fill it the height of the base mat, and then valved off against any minor seepage through the grout.

It is suggested that this action item be added to the list conveyed by the referenced memo.

BG/tw

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