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April 27, 1984

ROTH S. LEDDICK
Senior Vice President
Nuclear Operations

W3K84-0962
Q-3-A35.01

Mr. Darrell G. Eisenhut, Director
Nuclear Reactor Regulation
US Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: Docket No. 50-382, Waterford Unit 3 Allegations

REFERENCE: Letter, D. G. Eisenhut to J. M. Cain
dated April 2, 1984

Dear Mr. Eisenhut:

We have reviewed the above referenced letter and have prepared the attached responses.

As you are aware, these issues for which you have requested formal responses, have been addressed to varying degrees by CAT, the Waterford Task Force, OI, I&E, NRR, NRC Consultants, and SALP. They have also been addressed in LP&L's letter W3K84-0629, to the NRC dated March 16, 1984.

Our own investigations into the allegations - hampered somewhat by difficulties in determining what specifically is being alleged - have resulted in the conclusion that, from the point of view of Waterford 3 quality and safety, they are essentially unfounded.

LP&L has always been committed to the high quality and safety standards expected in nuclear power applications. We are confident that this commitment has resulted in adequate confidence that the Waterford 3 structures, systems and components will perform satisfactorily in service. We will continue to cooperate fully with your efforts in resolving allegations with confidence that the same conclusions will be reached in a timely fashion by the NRC.

Yours very truly,

R. S. Leddick
R. S. Leddick

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PDR ADOCK 05000382
A PDR

RSL/gc

cc: E. L. Blake, W. M. Stevenson, J.T. Collins, G.W. Knighton,
D. M. Crutchfield, J. Wilson, G.L. Constable, J. M. Cain

Add: D. Eisenhut

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WATERFORD UNIT 3 ALLEGATIONS

LP&L RESPONSES

APRIL 27, 1984

NRC DOCKET NUMBER 50-382

PREFACE

The Nuclear Regulatory Commission (NRC) forwarded a list of thirty-nine (39) allegations to LP&L in a letter from Mr. Darrel G. Eisenhut to Mr. J. M. Cain dated April 2, 1984. This document provides LP&L responses to those allegations.

The LP&L responses included in this document require general clarification as follows:

1. Interpretation of Allegations

In some instances, in order to be responsive, LP&L has made assumptions regarding the intent of a particular allegation. When such assumptions have been made, the response includes examples, usually by reference to specific Nonconformance Reports, of related situations which have occurred at Waterford 3. The examples should be construed not only in the context of the specific allegation, but also as being indicative of the great attention which is and has been paid to safety and quality at Waterford 3, as well as the high degree of effectiveness of the Waterford 3 quality programs.

2. Utility Participation

Ebasco was contracted to perform construction management services for LP&L on the Waterford 3 project. As Construction Manager, Ebasco acted as agent (i.e., an extension of LP&L) for LP&L, and was delegated the responsibility for the bulk of the quality program implementation. During the construction of the unit, the role of LP&L employees in the quality program was limited to one of active management oversight, audits, and surveillance. LP&L participation, through audit and surveillance activities, was designed and carried out for the purpose of assuring that Ebasco implementation of the quality program was thorough and effective. Responses to allegations which include reference to the "utility," must be evaluated in this context.

(2) Sheet 1 of 2

It has been alleged that additional concrete placements were added to original curing reports. An example is contained in EBASCO inter-office correspondence from G. Hill to J. Czyrko dated June 6, 1983.

1) Valid:	Y <u>*</u>	N <u> </u>
2) Significant:	Y <u> </u>	N <u>*</u>
3) Generic:	Y <u> </u>	N <u>*</u>

Response:

1) Evaluation of Validity

Conclusion: Valid.

Basis:

The allegation is understood to mean that concrete placement numbers were added to the original curing reports and the allegation is valid.

2) Safety Significance

Conclusion: No impact on safety.

Basis:

The example mentioned in the G. Hill to J. Czyrko interoffice correspondence of June 6, 1983, is Attachment No. 2, a copy of a J. A. Jones curing log for placement No. 593-S01-UZ3ZAA. Attachment No. 2-A identifies a copy of the same curing log, although three additional placement numbers 593-S01-3AA, UZ4ZAA and UZ4FHAA appear to be added to include documentation of these additional curing inspections.

During the review of various records contained within the placement packages, it was found that it was not unusual for J. A. Jones to document several placements on only one checklist and/or record. The J. A. Jones inspector would make copies of the record and either circle or hi-lite each placement number separately and then place a copy of each in its respective package. It appears that the concern noted by the June 6th memo identifies just such a case, although an original curing record also existed.

When this method was utilized, the Ebasco reviewer would assure that the placements noted agreed with the placement pour plan and other Quality Documents within the package. For example, the four placements identified on attachment 2 and 2-A were located in the fuel handling building on elevations -18.00 to -1.50. According to the J. A. Jones pour plan, all four placements were to be placed in the same approximate area within the same time frame. Other documents, such as the J. A. Jones "Daily Concrete Inspection Report" and the Ebasco "Concrete Cure Record," also identify that these placements were inspected and documented on only one inspection checklist.

The placements identified were documented at the time of review on NCR No.'s W3-3165 and W3-7302 as being deficient, since there was no documentation available for the full (7) seven day curing cycle. The accepted NCR disposition stated that ACI-318-77 Para: 1.3.2 required inspection only as necessary to assure proper curing methods are followed. Based on the inspections that were documented on the day before and the day after, and that curing compound had been applied on exterior face after form removal, there was no reason to suspect improper methods.

(1) Sheet 1 of 1

It has been alleged that civil/structural and piping QC inspectors were not certified in accordance with the appropriate requirements.

1) <u>Valid:</u>	Y <u> </u>	N <u>*</u>
2) <u>Significant:</u>	Y <u> </u>	N <u>*</u>
3) <u>Generic:</u>	Y <u> </u>	N <u>*</u>

Response:

1) Evaluation of Validity

Conclusion: Invalid

Basis:

Civil/Structural and Piping Inspectors were qualified to perform their assigned functions.

Qualification requirements for Q.C. Inspection personnel are described in the respective Ebasco and contractor procedures. These procedures were developed consistent with the requirements of applicable codes and standards (i.e., ASME, AWS, and ANSI). A listing of applicable Ebasco and contractor procedures is provided below. Through implementation of the Q.A. Audit, Surveillance, and re-inspection programs, deficiencies in implementation which may have existed were identified and corrected using formal problem identification, reporting, and resolution programs.

Item V of LP&L letter W3K84-0629 to Mr. John Collins, USNRC, dated March 16, 1984, provides further information concerning inspector certification.

CIVIL/STRUCTURAL CONTRACTORS

EBASCO
Sline
J. A. Jones
Louisiana Industries (LI)

GEO (Testing) Barrow-Agee
Fegles
American Bridge
Chicago Bridge & Iron (CB&I)
Nooter

Q.C. INSPECTOR QUALIFICATIONS

WQC-121, ASP-I-
1101.1
POP-N-702
Section 1.3.3.2 of LAI QA
Manual
QA-2
QAP-303-21
14
TIP-1
NDE-10

PIPING CONTRACTORS

Gulf Engineering
Tompkins-Beckwith (T-B)
Mercury
NISCO
EBASCO
GEO (Testing)

Q.C. INSPECTOR QUALIFICATIONS

PR-20.0
TBP-4
QCP-3050 & QCP-3070
ES-116-2 & ES-117
WQC-121 & ASP-I-3
2.3 & 5.2

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

During the review of J. A. Jones concrete placement packages (which concluded in January 1984) curing deficiencies were noted on the following NCR's: W3-7431, 7514, 7423, 7302, 7355, 7153, 7154. These NCR's adequately identify all curing deficiencies and were reviewed, approved and dispositioned by QA and engineering respectively.

3) Generic Implications

Systems: N/A

Contractors: N/A

(3) Sheet 1 of 2

- | | | | |
|----|---|------------------------|-----|
| a) | When an issue, including 9.2 Deficiency Reports, Speed Letters, and "Nasty Grams," is raised by a member of the contractor or utility staff, how is it handled? | 1) <u>Valid:</u> | N/A |
| | | 2) <u>Significant:</u> | N/A |
| | | 3) <u>Generic:</u> | N/A |
| b) | Describe the process of generating Audit Reports, EDN's, NCR's, etc., and the disposition of them. | | |

Response:

- 1) Evaluation of Validity - N/A
- 2) Safety Significance - N/A
- 3) Generic Implications - N/A

Response:

This item is not considered an "allegation" but rather a request for information; therefore, validity, significance, and generic implications are not addressed. The following information is provided to help describe on-site procedures.

Item 3a: When a potential problem is reported to the Ebasco Q.A. Site Supervisor by any method of communication, he ensures that the potential problem receives appropriate evaluation for validity, significance, and program impact. He then follows-up by assuring that the official documentation (DN's, NCR's, etc.) is generated, if appropriate, and generally informs the initiator as to action(s) he has taken. Problems identified as non-conforming are evaluated, as defined in ASP-III-7, for reportability to the NRC in accordance with 10CFR50.55(e) and/or 10CFR21.

Informal communications, such as "Speed Letters", "Nasty Grams", etc. are not official records, are not retained, and do not require formal follow-up and closure unless they are incorporated into official documents as references, attachments, etc. QA employees or other key project personnel who become aware of such communications are responsible for resolution of the concerns which are raised. Valid concerns discovered in such correspondence are upgraded to DN's/NCR's, as appropriate.

Item 3b: Audit Reports, EDN's, NCR's, etc. are generated in accordance with the NRC approved Ebasco Quality Assurance Program, ETR-1001, and Waterford Site specific implementing procedures such as Ebasco procedures QAS-2, "General Audit Procedure", ASP-III-7, "Processing Nonconformance", WQC-1, "Control of Receiving, Handling & Storage" and ASP-IV-70, "Handling of Engineering Discrepancy Notices".

Ebasco procedures, ASP-III-7, WQC-1 and ASP-IV-70, describe the methods used to generate Nonconformance Reports (NCR) or Discrepancy Notices (DN). Deficiencies that are clearly nonconforming are forwarded to Q.A. Engineering for evaluation and to effect corrective action.

Ebasco procedure QAI-9, "Review and Handling of Construction - Installation Records" describes how the Quality Assurance Installation Records Group (QAIRG) reviews contractor documentation and documents the review. It describes when and how a QAI-9.2, "Deficiency Report", is issued to identify a deficiency in contractor records. Paragraph 7.6 titled "Deficiency Identification and Resolution", describes how deficiencies and areas of concern, not within the scope of records review are handled once they are identified.

By mid 1983, many of the plant systems had been turned over or transferred to LP&L. LP&L issued a directive to Ebasco that no Ebasco DN's or NCR's be issued against Systems turned over except for those systems on which Ebasco was performing work. Problem reporting for Systems under LP&L's jurisdiction would be handled by LP&L. As a result, Ebasco generated a new Quality Assurance Instruction (QAI-28) describing the procedure for issuing "Potential Problem Reports" to LP&L for evaluation and resolution.

(4) Sheet 1 of 1

It has been alleged that the records review of the documentation prior to receipt by QAIRG was not a technical review but rather a clerical one looking for white out or missing dates, etc.

1) <u>Valid:</u>	Y <u>*</u>	N <u> </u>
2) <u>Significant:</u>	Y <u> </u>	N <u>*</u>
3) <u>Generic:</u>	Y <u> </u>	N <u>*</u>

Response:

1) Evaluation of Validity

Conclusion: Valid

Basis:

The allegation as worded is essentially valid, however, only as it relates to the final review prior to physical turnover of records to Ebasco Q.A.

2) Safety Significance

Conclusion: No impact on safety.

Basis:

Record reviews performed during construction, prior to this final "assembly" review, were technical. Also, the reviews which occurred during the process of problem disposition were, as appropriate, technical reviews.

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that the Phearson to Griggs memo of December 15, 1975 was never properly addressed.

1) <u>Valid:</u>	Y <u> </u>	N <u>*</u>
2) <u>Significant:</u>	Y <u> </u>	N <u>*</u>
3) <u>Generic:</u>	Y <u> </u>	N <u>*</u>

Response:

1) Evaluation of Validity

Conclusion: Invalid

Basis:

The Phearson to Griggs memo was properly addressed by way of LP&L Quality Assurance audits.

Mr. F.L. Phearson, an Ebasco Q.C. Engineer, drafted a hand written memo addressed to Mr. W.C. Griggs, Ebasco Senior Q.C. Supervisor, listing deficiencies in the conduct of Concrete Placement No. 2. This "Afteraction Report" was prepared some four (4) days after completion of Concrete Placement No. 2. Mr. Griggs does not recall seeing the memorandum at the time and LP&L first became aware of it in mid 1983. Investigation reveals that the deficiencies identified in Mr. Phearson's December 15, 1975 memorandum were also identified by LP&L and Ebasco within audit/surveillance reports JG-75-12-2, W3S-75-63S, and W3S-75-64S written between December 2 and 11, 1975, between 4 and 13 days earlier than the Phearson memorandum. In addition to the Q.A. reports, LP&L issued Stop Work Order (SWO) No. 1 on December 16, 1975 to effect programmatic improvements in the conduct of future concrete placements.

LP&L and Ebasco held a management meeting to discuss the issues leading to SWO No. 1 and to determine the appropriate measures to effect correction. Following resolution of the findings in the LP&L/Ebasco Q.A. reports and implementation of corrective action to prevent recurrence, the Stop Work Order was released on December 18, 1975.

Corrective action is addressed in Ebasco and J.A. Jones responses to the Stop Work Order. Corrective Action included:

1. Revision of J.A. Jones procedure W-WP-7 on handling and disposition of concrete.
2. J.A. Jones direction to employees to read and understand:
 - a. Ebasco Specification LOU-1564-472, Section II, "Concrete Placing, Curing and Finishing"; b. J.A. Jones' Concrete Pour Plan; and c. Concrete Placement and Consolidation - Training Session Class Notes.
3. J.A. Jones provided specific direction to their employees, to prevent recurrence of particular problems.

It should be emphasized that:

1. The deficiencies listed in the Phearson memorandum had been previously identified by LP&L and Ebasco along with other concerns not mentioned by Phearson.

2. The Phearson memorandum did not specifically state that Concrete Placement No. 2 was suspect nor did it recommend or imply the need for investigation of the placement.
3. Furthermore, there is reason to believe that Phearson, himself, was satisfied with the corrective action taken by the project. He remained on-site for approximately four (4) months and there is no indication that he questioned the corrective action which was implemented.
4. The signed off concrete placement inspection reports, completed by the concrete contractor's Q.C. personnel, indicate that all the attributes relative to placement and consolidation are acceptable.
5. There is no reason to suspect that the common basemat is defective or fails to meet specifications.

LP&L has previously provided the NRC staff with further details concerning this issue. This information was presented at a meeting in Bethesda, MD on March 26, 1984, and was transmitted formally to the NRC on April 16, 1984 via LP&L letter W3K84-0974.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

(6) Sheet 1 of 1

It has been alleged that basemat concrete was not placed in accordance with the ACI Codes.

1) Valid:	Y	N *
2) Significant:	Y	N *
3) Generic:	Y	N *

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis:

The basemat concrete is placed in accordance with ACI Codes.

The response to PSAR Question 5.8.2 makes commitments to ACI requirements for concrete placements at Waterford III and project direction was consistent with these commitments.

Ebasco Concrete Hydraulic design drawings reference ACI Codes 301 and 318. These drawings were utilized by the Civil Concrete contractor for installation. In addition, the J.A. Jones Contract (W3-NY-4), which was the contract for placement of the basemat concrete states in part - "Concrete construction, where not specifically covered by Ebasco Specification LOU 1564.472, shall meet the applicable standards of ACI-318-71 and ACI-301-72. In the event of conflict between these ACI standards, ACI-301-72 shall govern". The Ebasco Specification LOU 1564.472, "Concrete Masonry" is consistent with applicable ACI Standards.

J. A. Jones Construction Company developed procedure W-WP-7, "Concrete Placing, Curing, Finishing, and Repairs", and procedure W-SITP-7, "Inspection of Concrete Placing, Curing, Finishing, and Repairs", to be in compliance with the ACI Standards and the Ebasco specifications. These procedures were approved for use at Waterford 3.

The construction work, including concrete placement, was monitored by J.A. Jones Q.C., Ebasco Q.C., and Ebasco/LP&L Q.A. Although deficiencies were noted in Q.A. audit/surveillance reports, the findings were resolved satisfactorily. In-process corrective action together with programmatic corrective action resulted in the completion of concrete placements which met or exceeded requirements.

The inspection reports, compressive test reports, and subsequent NCRs, DNs, and their resolution, document an effective construction process, and support the conclusions that the procedures were implemented satisfactorily. The finished placements are in compliance with the ACI Codes.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

(7) Sheet 1 of 1

It has been alleged that a complete (100%) review of all concrete placement packages was not performed thoroughly in that all NCR's, Nasty Grams, EDN's and letters were not included in the review.

1) Valid:	Y	N *
2) Significant:	Y	N *
3) Generic:	Y	N *

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis:

A thorough review of concrete placement packages was performed.

NCR's are not required to be physically contained within each applicable placement package. They are referenced within the package and/or cross referenced by means of the master computer input sheets or are traceable from the NCR/DN log book and/or file.

The statement that EDN's were not included in the review is correct. EDN's, per Ebasco Procedure ASP-IV-70, are generated and "Safety Related" EDN's are then forwarded to Quality Assurance for review. If QA establishes that a deficiency exists, a higher tier document such as an "NCR" is initiated.

The statement that "Nasty Grams" and/or "Letters" were not included in the review of placement packages is also correct. Miscellaneous informal correspondence does not require formal follow-up and closure in the same manner as Quality documents. Valid concerns discovered in such correspondence are upgraded to DN's/NCR's, as appropriate.

2) Safety Significance

Conclusion: No impact on safety.

Basis:

Ebasco Services has an established and approved Nuclear Q.A. Program Manual (ETR-1001) which corresponds to the requirements set forth in applicable codes and standards and which has proven adequate throughout the construction phase of this project. ETR-1001, Section QA-III-6 establishes the proper program requirements for the identification, control, and the proper dispositioning of items found to be in nonconformance. Supplemental procedures such as ASP-III-7 "Processing of Non-conformances", ASP-IV-70 "Handling of Engineering Discrepancy Notices" and WQC-150 "Inspection and Test Status" specify and/or describe in greater detail how an activity is to be performed and methods to be employed when deficiencies are discovered.

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that backfill samples were improperly taken in that the records show that the testing was performed in locations other than the backfill area. Some were alleged to have been taken in a building or in the river.

1) <u>Valid:</u>	Y <u>*</u>	N <u> </u>
2) <u>Significance:</u>	Y <u> </u>	N <u>*</u>
3) <u>Generic:</u>	Y <u> </u>	N <u>*</u>

Response:

1) Evaluation of Validity

Conclusion: Valid.

Basis: N/A

2) Safety Significance

Conclusion: No impact on safety.

Basis:

Soils and backfill records for the Class "A" backfill have been reviewed by Ebasco. The review was performed to verify existence of required records, their completeness, and proper organization by elevation and fill number. Approximately 50% of the records were re-reviewed for technical adequacy.

A Master Plot-Grid Location Map is used for geological mapping. Density tests for Class "A" backfill were plotted at each elevation on this grid. In addition, the backfill records review encompassed compaction, gradation, proctors, sieve analysis, and other basic specification requirements.

The review of backfill records disclosed that four density test grid locations were incorrect. Two of those test records were noted to have been incorrect with respect to fill numbers, and were plotted correctly in the test location plan. Another test record was inconsistent with QC inspection reports and the grid location plan, and is currently under evaluation. The remaining deficient density test record (Peabody test no. LRWE-919) located the test within the Common Foundation Structure. Since it is impossible for a test to be performed in the building it is evident that the location entry on the Density Test Record is erroneous. The In Place Density Test Record LRWE-919 shows the test to be in Fill 4. Fill 4 falls in the coordinates of E3-27E, 48N as well as E3-27W, 48N. Since there is no practical way that this area could be identified by N-S coordinates without E-W coordinates, this test record should indicate E3-27W-48N or E3-27E-48N as opposed to "E3-27S, 48N," as the test record indicates.

NCR W3-7682 addresses density test record and inspection report deficiencies with respect to soils, has been evaluated as not reportable, and is currently being processed for disposition.

It should be noted that LP&L is in the process of reviewing civil records, which include the backfill records. This review is not complete at this time.

3) Generic Implications

Systems: None

Contractors: N/A

It has been alleged that the basemat cadwelding NCR's (W3-5998, W3 6234 & W3-6245) have not been properly dispositioned in that there were missing reports, uncertified cadwelders and inspectors, etc.

1) <u>Valid:</u>	Y <u>*</u>	N <u> </u>
2) <u>Significant:</u>	Y <u> </u>	N <u>*</u>
3) <u>Generic:</u>	Y <u> </u>	N <u>*</u>

Response:

1) Evaluation of Validity

Conclusion: NCR-W3-5998: Invalid
NCR-W3-6245: Invalid
NCR-W3-6234: Partially valid

Basis:

The referenced NCR's were generated to deal with problems identified by Q.A. records reviews and have, with minor exceptions, been properly dispositioned. These NCR's have no missing reports. However, in many instances, the indicated problems of missing reports have been resolved by further records reviews which have established that available documentation was overlooked at the time the NCR's were generated. In other instances, the reviewer was found to have misinterpreted the requirements, or to have performed calculations incorrectly. The few remaining items have been evaluated as having no significance. A detailed breakdown of the items and their dispositions follows:

NCR-W3-5998 (Sample Splice Failure Test)

This NCR finds that

- 1) the failure rate in one group of sample splices exceeded the specified limit of 1 failure in 15 consecutive samples
- 2) splicing was not terminated as required by the specification
- 3) the cadwelder was not recertified as required by the specification
- 4) additional samples were not obtained and tested as required by the specification when the failure rate exceeds the specified limit

The recommended disposition stated that the authors of the NCR erred (miscounted) and in fact the failure was only 1 in 15, not 2 in 15 as stated. Consequently, it was not necessary to terminate the splicing, re-certify the cadwelder, or take additional samples.

The engineering evaluation agreed with the recommended disposition, but required some additional evaluation (Attachment 5 of NCR-W3-5998) of the test data based on AEC clarification of Reg. Guide 1.10 in AEC memo dated May 15, 1973 (Attachment 6 of NCR-W3-5998). The NCR was subsequently reopened and the evaluation per Attachment 5 of the NCR was performed. This NCR was closed on March 28, 1984.

It should be noted that this NCR is not broad in scope, does not involve multiple deficiencies and the failed sample splices did not come from the basemat. Of four failed tensile tested sample splices addressed by this NCR, two came from the Fuel Handling Building, one came from a pressurizer wall, and one came from the primary shield wall.

This NCR is properly dispositioned, has no missing reports, and addresses cadwelder/inspector certification properly.

NCR W3-6245 (Daily Cadweld Inspection Reports)

This NCR states that certain Daily Cadweld Inspection Reports have five (5) inspectors' signatures or initials with noticeable differences, which renders their authenticity indeterminate.

The NCR was initially closed on the basis that documentation was found which showed that the cadwelds were previously inspected and accepted. This closure accepted the cadwelds "AS-IS" with no further corrective action.

Subsequently, the NCR was reopened and Attachments 9, 10, 11, and 12 were added to the NCR package. These attachments included signed statements by the inspectors involved giving explanations for the appearance of irregular signatures. The explanations include: 1) The original documents were soiled in the field and were re-written, 2) One inspector visually inspected awkward locations and called out data which was recorded and initialled by a second inspector for the one making the inspections.

Table 1 of the NCR entitled "Daily Cadweld Inspection Report Summary," shows that many of the cadwelds were sampled for complete reinspection by Ebasco. In addition, prior to concrete placement, the Contractor and Ebasco each performed independent preplacement inspections. The Contractor also verified that the cadwelds had been marked indicating satisfactory prior inspection. The Contractor also assured that the documentation was complete for the cadwelds including properly completed inspection reports.

LP&L is satisfied that 1) the explanations for the apparent differences in signatures/initials are entirely satisfactory; 2) the independent inspections and verifications of documentation provide more than reasonable assurance against inadequate inspection; 3) the successful splice tests confirm reliable cadwelding; and 4) there is no basis for suspecting inadequate initial inspection or falsification of signatures on inspection reports.

NCR-W3-6234 (Cadwelding)

This NCR (which now exceeds 200 pages) was originally closed on January 1, 1984, without corrective action, as no corrective action was required. In March 1984, it was reopened to re-evaluate the manner of accounting for visual rejects based on an NRC interpretation of ANSI N45.2.5. All Daily Cadweld Inspection Reports were re-reviewed and Supplement 1 was added to Attachment V.

During ESSE evaluation of the supplement, it was discovered that findings addressed in Attachment VI had not been properly dispositioned in that minor inconsistencies existed and 38 splices lacked proper documentation of location. Further investigation revealed that all 38 splices were inspected by the Contractor and were documented as acceptable on the Daily Cadweld Inspection Reports. The remaining deficiencies pertain only to documentation, not to quality of construction. We expect these deficiencies to be resolved and the NCR to be closed expeditiously. Following is a summary of the status of this NCR:

Attachment I finds:

"Contrary to the requirements of (Contractor) procedure W-SITP-4 paragraph 9.2 and 11.0, the following mechanical splices do not have the replacement splices recorded in the comments column of the Daily Cadweld Inspection Reports."

Status:

Of the 90 splices identified:

- a) Six were replaced by other cadwelds and therefore should not have been identified on the NCR.
- b) Two were accepted and installed in the placement, i.e., not rejected or sampled for testing. Thus, they should not have been identified on the NCR.
- c) Four were replaced and documented on the cadweld map.
- d) Eleven were sister splices and required no replacements.
- e) One was a sister splice but recorded as a production splice in error.

The remaining splices (66) could not be found in any cadweld maps and/or logs. This confirms that none of the splices selected for testing were embedded in concrete. Although the documentation does not cross reference replacement splices and removed splices, all rejected splices were documented as removed, and all test splices were replaced and properly tested. Moreover, available documentation does account for all splices. Therefore, the recommended and approved disposition for this documentation deficiency, to "Accept As-Is", is proper.

Attachment II finds:

"Contrary to the requirements of ANSI N45.2.6 and Contractor procedure POP-N-702, the inspections of the following mechanical splices were performed by Contractor personnel who were not certified for the activity. NOTE: None of Contractor personnel were certified prior to April 23, 1976."

Status:

A review of the Contractor's personnel files revealed that all inspectors identified in this NCR had satisfactory certification except three. One of these performed a "Cadweld Performance Qualification Test" in the initial stage of cadwelding. This was the method of certifying personnel in the early stages of the Contractor's activities. The other two uncertified inspectors were "trainees" and performed only pre-weld inspections. All final inspections were performed by certified personnel. Therefore, the recommended and approved disposition for this deficiency, to "Accept As-Is", is proper.

Attachment III finds:

"Contrary to the requirements of Ebasco Specification LOU-1564.479 paragraph 13.01, the following mechanical splices did not receive a final visual inspection by Contractor personnel".

Status:

All but two of the splices listed were test splices. The records show that all test splices satisfied the tensile requirement. The remaining (two) cadwelds had been previously documented, dispositioned and re-evaluated on a prior Non-Conformance Report (NCR-W3-0569) on December 4, 1979.

Attachment IV finds:

"Contrary to the requirement of Ebasco specification LOU-1564.479 paragraph 13.01 and procedure QCIP-9, the following mechanical splices did not receive a final visual inspection by Ebasco personnel."

Status:

All Contractor's "Daily Cadweld Inspection Reports" were re-reviewed by Ebasco QA. All installed cadwelds had been inspected and accepted by Contractor Quality Verification (QV) Personnel per Attachment VII. This item was closed based on available documentation.

Attachment V-1 finds:

"Contrary to the requirements of Spec. LOU-1564.479; Sect. IV; Para. 13.03; mechanical splicing sampling was not started anew for all positions/bar sizes after a cadweld operator had a visual reject. Generally, the splicing sampling was started anew for the position and bar size of the rejected splice."

Status:

Ebasco Specification LOU-1564.479, (Revision 2), paragraph 13.03 states: "If 1 of 15 consecutive completed splices fails to pass the visual inspection test, the mechanical splicing sampling shall be started anew without requalifying the crew."

This paragraph does not specifically require that mechanical splicing sampling be started anew for all positions & bar sizes after a cadweld operator has a visual reject. This interpretation is consistent with interpretations provided by the USNRC in a memorandum dated May 15, 1973. (See Attachment V-1 of NCR-W3-6234).

Report of Tensile Test - Cadweld Splices, forms SITP-4.4 for all cadwelds made by the Contractor were reviewed and considered along with all Daily Cadweld Inspection Records. The total number of cadwelds made by the Contractor personnel was 14,293. The total number of welds that were tested was 591, which is 4.1% of the total.

Specification 1564.479 (revision 2), paragraph 14.01 states in part:

"Test frequency for structures where combinations of sister and production splices will be tested:

- a) One production splice of the first 10 production splices.
- b) One production and three sister splices for the next 90 production splices.
- c) Three splices, either production or sister splices, for the next and subsequent units of 100 splices. At least one-fourth of the total number of splices tested should be production splices."

The percentage of mechanical splices taken for tensile testing indicates that the overall testing requirements for mechanical splices was met. Based on this fact, the recommended disposition for this item, to accept the testing program adequacy, "As-Is," is proper.

Attachment V-2 finds:

"Contrary to the requirements of ANSI N45.2.5-1974; Para. 4.9.3, sister test splices were made by cadweld operators on days when no production splices were installed by the respective operator. Sister splices affected are noted in the comment section of Attachment #V."

Status:

On certain occasions, cadweld operators made sister splices on days that production cadwelding did not take place. This was done in order that the cadweld operator would not have to requalify. NOTE: A cadwelder must requalify if he does not make a production mechanical splice within a 3-month period of his certification date. (Reference paragraph 11.0 of Specification 1564.479)

The referenced ANSI document stipulates that the test splices must be made under the same conditions as the production splices. That is to say that the environmental conditions such as humidity and temperature, barometric pressure, etc. are to be similar.

Since forty-one sister splices were made on days that production splicing did not occur, the attribute of performing cadweld operations under similar conditions is indeterminate. However, review of the test results of the forty-one sister test samples revealed that only one, J-84-492, fell below the ultimate tensile requirement of 75,000 psi. The splice failed at 74,487 psi, which is below the required ultimate by only 513 psi.

Since the final results of the tensile tests showed the splices (except one) met the ultimate tensile strength requirements, the concern that production splices were not made on days that sister splices were made is insignificant.

Attachment V-3 finds:

"Spec. LOU-1564.479; Sect. IV; Para. 14.01; identifies the testing frequencies for production splices and combinations of sister and production splices. The applicable frequency is determined by the structure where the cadwelding is performed. The specification does not identify which structures are applicable to the respective frequency. Attachment #V reflects the actual test sampling and test results for the cadweld operators who performed production cadwelding."

Status:

The concern noted in the nonconformance report is not a deficiency. At most, it should only be considered as a need to clarify the noted specification paragraph. As noted, the applicable frequency is determined by the structure where the cadwelding is to be performed.

Cadwelding testing activities at Waterford-3 were performed the same way regardless of structure. A combination of production tests and sister tests was utilized. Each building (structure) was treated the same when splice samples for tensile testing were taken. As it has been shown in a previous disposition, the overall percentage of tests taken was over 4.1%.

Of all the tensile tests taken (591), only six (6) test samples failed to meet the required tensile requirements. These splices did not exceed a failure rate of 1 of 15 consecutive tests. The test samplings were started anew for each particular cadwelder whose test failed, as required in paragraph 14.02(a) of Specification 1564.479 (revision 2).

Since no differentiation was made for testing of splice samples in structures, each safety related structure received the same attention when mechanical splice samples had to be taken for tensile tests.

Attachment VI.A finds:

"The following cadweld splices cannot be located on the cadweld maps referenced on the daily cadweld inspection report".

Status:

Among the 338 affected splices, all except 38 were resolved satisfactorily by either

- a. locating the splices on cadweld maps,
- b. determining that they were removed and replaced (visual rejects or for tensile testing), or
- c. determining that the splice locations were adequately documented on the Daily Cadweld Inspection Reports.

For the 38 unlocated splices, it was determined from the Daily Cadweld Inspection Reports that all were inspected and accepted. In addition, the pre-placement inspection reports verify that they were installed to design, inspected, and accepted. The documentation deficiency, i.e., inability to locate these 38 cadwelds, is acceptable as the quality of construction is unaffected.

Attachment VI.B finds:

"The following cadweld splices reference cadweld maps on the daily cadweld inspection record that cannot be found".

Status:

- a. Daily Cadweld Inspection Reports give the required location data for 127 of the 266 splices.
- b. Ninety-four of the 266 were in the turbine generator building and do not require precise location data as the structure is not safety related.
- c. Nineteen splices were made as corrective action for NCR-W3-764A (NCR-JAJ-WE-431A). Although no cadweld map was located, the splices were installed in the repaired floor beam in concrete placement 558-S01-3 between column lines 11A and 12A, south of column line "L" at elevation +42 to +44. This location is quite definitive.
- d. Five splices had been previously addressed in the Contractor Internal Audit 77-379-78-7 and Audit Finding No. 73 addressed the lost Daily Cadweld Inspection Reports. Portions of the Daily Cadweld Inspection Reports were reconstructed from the maps which were available at that time.

Attachment VI.C finds:

The following cadweld splice references no cadweld map number on the daily cadweld inspection report: IW-799.

Status:

The Daily Cadweld Inspection Report for this splice shows that it was installed, inspected, and accepted. Although its precise location is not known, it is located in placement 499S04-8A1, as is indicated on Cadweld Map BMWC. The pre-placement inspection report verifies that all reinforcing was installed in accordance with design, and it was inspected and accepted. Traceability to determine the exact location of this cadweld is considered a minor documentation deficiency which was accepted "as-is," since the quality of construction is unaffected.

Attachment VI.D finds:

"The following cadweld splices are located either on the same cadweld map twice or two different cadweld maps".

Status:

Review of the Daily Cadweld Inspection Records indicated that the location of each splice was defined precisely. It was observed that different placements often used duplicate cadweld numbers, but each cadweld could be uniquely identified with a specific placement. No corrective action is considered necessary.

Attachment VI.E finds:

"Cadweld map #499-S01-1A1 is not legible".

Status:

A legible copy of this map is attached to this NCR. No additional corrective action is required.

Attachment VI.F finds:

"The Daily Cadweld Inspection Record which shows 1W746 through 1W750 is missing from the installation records".

Status:

The missing Daily Cadweld Inspection Records were found and attached to this NCR. No further corrective action required.

Attachment VI.G finds:

"The following cadweld splices are located on cadweld maps but do not appear on the Daily Cadweld Inspection Record".

Status:

Of the 12 splices addressed by this finding, three do not exist, two have Daily Cadweld Inspection Reports which were later found; one was a replacement splice; and six no longer have Daily Cadweld Inspection Reports but are uniquely located by maps and map logs.

The pre-placement inspection report verifies:

- a. that all the reinforcing was installed in accordance with design;
- b. that it was inspected and accepted; and
- c. that all necessary documentation existed at that time.

Available documentation verified that the necessary cadwelds exist and are satisfactory.

2) Safety Significance

Conclusion: None of the findings of these NCRs impact safety.

Basis:

The significant review and evaluation of those NCR's have confirmed confidence that, with respect to cadwelding, the installation will perform satisfactorily in service.

3) Generic Implications

Systems: N/A

Contractors: N/A

(10) Sheet 1 of 1

In your disposition of NCR's do your procedures require that you look at the potential generic implications of the specific problem identified in the NCR? If not, why not? If so, what documentation exists to demonstrate that that was done?

1) <u>Valid:</u>	N/A
2) <u>Significant:</u>	N/A
3) <u>Generic:</u>	N/A

Response:

- 1) Evaluation of Validity - N/A
- 2) Safety Significance - N/A
- 3) Generic Implications - N/A

Response:

This item is not considered an "allegation" but rather a request for information; therefore, validity, significance, and generic implications are not addressed. The following information is provided to help describe on-site procedures.

Nonconformance report (NCR) procedures ASP-III-7 and QAI-31 require that NCR dispositions be evaluated by responsible personnel as assigned by Quality Assurance Engineering. The "Evaluation of Disposition" is signed by the responsible individual documenting concurrence, rejection, and/or alternative solutions to the nonconforming conditions. Such responsible personnel recognize that, in addition to correcting the specific deficiencies identified in an NCR, there is often the need to implement corrective action to preclude recurrence of the deficiencies. Although the referenced procedures do not explicitly identify a requirement to review for such generic reasons, there is significant recorded evidence that such reviews were accomplished on the Waterford project from the very beginning of safety-related site work on the project. Examples of such evidence include LP&L Stop Work Order No. 1 and NCR's W3-4010, W3-5706, and W3-6528.

Ebasco does formally evaluate NCR's for generic implications through its Trend Analysis Program. However, like most trend analysis programs, the Ebasco Program requires historical data in order to be effective, the generation of which somewhat degrades its timeliness.

Ebasco Quality Assurance Instruction, QAI-29 describes the process for "trend coding" NCR's. The NCR and its appropriate trend code is entered into the Ebasco Trend Analysis Program. Through reports generated by the Trend Analysis Program, Ebasco Quality Engineering performs evaluations for potential generic implications. Corrective action is implemented as appropriate.

As evidence of the implementation of the Ebasco Trend Analysis Program, reference is made to Trend Analysis Reports #12 and 14.

It has been alleged that the extra supports for instrumentation cabinets covered by an FCR that were mounted on gratings inside containment were fabricated with materials for which there is no heat numbers traceability by uncertified welders and examined by uncertified inspectors.

1) <u>Valid:</u>	Y <u>*</u>	N <u> </u>
2) <u>Significant:</u>	Y <u> </u>	N <u>*</u>
3) <u>Generic:</u>	Y <u> </u>	N <u>*</u>

Response:

1) Evaluation of Validity

Conclusion: Partially valid.

Basis:

Extra supports for instrumentation cabinets mounted on gratings inside containment were fabricated from stock materials for which heat numbers traceable to certified mill test reports are available. Therefore, this part of the allegation is invalid.

The welders were certified for the positions in which they welded. Therefore, this part of the allegation is invalid.

The assertion that inspections were performed by welding inspector prior to his certification has also been shown to be in error. The inspector's certification was, by procedure, adequate for the work he performed. In addition, he was well qualified at the time of inspection and did, in fact, certify to a higher level shortly after this time of inspection.

2) Safety Significance

Conclusion: There is no safety significance.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

Describe the utility and contractor programs for reviewing vendor, design, manufacturing, and testing, quality assurance and quality control programs.

- | | |
|------------------------|-----|
| 1) <u>Valid:</u> | N/A |
| 2) <u>Significant:</u> | N/A |
| 3) <u>Generic:</u> | N/A |

- a. Of specific interest is the handling of EBASCO comments on vendor procedures. Describe how the comments provided by EBASCO on MCP-2170-R/7 were taken care of.
- b. Discuss the qualifications required of those reviewing vendor records for LP&L and EBASCO.

Response:

- 1) Evaluation of Validity - N/A
- 2) Safety Significance - N/A
- 3) Generic Implications - N/A

Response:

This item is not considered an "allegation" but rather a request for information; therefore, validity, significance, and generic implications are not addressed. The following information is provided to help describe Waterford procedures:

Ebasco's program for the review of contractor (vendor/manufacturer and installer) Quality Assurance and Quality Control programs is described in Ebasco QA Manual ETR-1001, section QA-1-5. This program provides for the evaluation of contractor QA/QC programs, as well as the auditing of contractor implementation of those programs prior to commencement of safety-related work.

Ebasco's program for the review of Contractor procedures is also described in the Ebasco Quality Assurance Manual ETR-1001 and follows the format of Ebasco Procedure ASP-III-1, "Preparation of Site Procedures". Upon the submittal of a new site procedure or a revision of an existing procedure by a contractor, the assigned contract administrator routes copies of the procedure together with comment sheets to the respective departments and/or individuals, including Engineering, QA, etc.

Upon receipt of comments by individuals, the contract administrator forwards the comments to the contractor. The transmittal of the comments may be formally made, as by a letter, or informally by delivery of copies of the comment sheets to the contractor. After the comments are resolved, another revision is prepared for review.

Implementing procedures describe in detail the specific actions taken. A list of some site (Waterford 3) implementing procedures follows:

ASP-I-5 Quality Assurance Evaluation of Suppliers
ASP-III-4 Purchasing/Contracted Services
ASP-III-5 Supplier Surveillance
ASP-IV-13 Contract Administration

12a: In the specific case of MCP-2170 (this procedure is for an installation contractor, not a vendor), there were two (2) drafts of revision 7. The first dated 12/21/82 and a second dated 2/20/83. Attached to the 2/20/83 draft of revision 7 were comment sheets for both the 12/21/82 draft and the 2/20/83 draft. Handwritten comments on the typed comment sheet reflect resolution of the comments made on the 12/21/82 draft. The comments which were approved are incorporated in the 2/20/83 draft. The 2/20/83 draft, after receipt, was also reviewed and subsequently approved.

12b: There are no regulatory requirements for qualification (certification) of record reviewers. The function of those reviewing vendor (manufacturer) records for Ebasco is defined in QAI-1 paragraph 10.4, which states.

"The reviewers review each documentation package in accordance with Form 6009-19B (prepared by the PQAE, QASS, or designees) for completeness, legibility and inclusion of the vendor Q.A. or other designated authorized Ebasco representative's verification stamp and/or signature and date, verifying the content review of the record(s)."

QAI-14 delineates training and qualification requirements for Q.A. Records personnel performing review and acceptance of Q.A. Records.

Training of installation records reviewers in accordance with QAI-14 is defined in more detail in the response to Item 18.

Describe the qualifications of those dispositioning issues raised in EDN's, NCR's, speed letters, etc.

- 1) Valid: N/A
- 2) Significant: N/A
- 3) Generic: N/A

Response:

- 1) Evaluation of Validity - N/A
- 2) Safety Significance - N/A
- 3) Generic Implications - N/A

Response:

This item is not considered an "allegation" but rather a request for information; therefore, validity, significance, and generic implications will not be addressed. The following information is provided:

Documents, such as DN's, EDN's, and NCR's are dispositioned by the Sr. Resident Engineer or his designee as prescribed by procedures. The personnel (Sr. Resident or designee) performing dispositions are qualified through appropriate education and experience. An evaluation of concurrence with the disposition is performed by other engineers and Quality Control or Quality Assurance, as required by the procedures which govern the specific document.

To assure that the correct disposition is made, all the documents mentioned above receive further review, evaluation, and/or concurrence as required by procedure. This review and involvement by other engineers and quality personnel provides adequate confidence that the correct dispositions have been made.

Please note that "speed letters" are not quality related documents, are not a part of any procedure on-site, and are not "dispositioned". A list of the applicable procedures follows:

DN	WQC-1 - Control of Receiving, Handling, and Storage
EDN	ASP-IV-70 - Handling of Engineering Discrepancy Notices
NCR	ASP-III-7 - Processing of Nonconformances
CDR	Company Procedure N-23 and ASP-IV-122 - Reporting a Defect/Noncompliance to the NRC
NCR	QAI-31 - Processing of Nonconformance Reports
DN's/EDN's	QAI-19 - Quality Assurance Engineering Processing of Discrepancy Notices/Engineering Discrepancy Notices

It has been alleged that Field Change Requests have been used in lieu of writing NCR's. An example deals with missing rebar in the fuel building. Describe the process of incorporating FCR's, etc., into the record documents such as as-built drawings.

1) <u>Valid:</u>	Y <u>*</u>	N <u> </u>
2) <u>Significant:</u>	Y <u> </u>	N <u>*</u>
3) <u>Generic:</u>	Y <u> </u>	N <u>*</u>

Response:

1) Evaluation of Validity

Conclusion: Valid.

Basis: N/A

2) Safety Significance

Conclusion: No impact on safety.

Basis:

It is possible that in some cases FCR's have been used in lieu of NCR's. However, even if this does occur as alleged, and an FCR is generated in lieu of an NCR, the FCR's are reviewed and approved by design engineering, thus ensuring the appropriate design review of any deviation from original design.

A search for the "example" of the allegation has been made. One FCR, which approved modifying reinforcing bars within a temporary blockout for the fuel transfer tube, was referenced in a subsequent FCR which requested approval to delete certain bars. This does not constitute using FCR's in lieu of writing NCR's, since the concrete for the blockout was not placed until after approval of the second FCR was obtained. No NCR was required and no other "example" resembling the alleged situation has been identified. FCR's CH-741 and CH-1220 include more detailed information.

Field Change Requests (FCR's) are used to implement required changes to design and are initiated prior to installation, except as allowed by procedure. Nonconformance reports are generated for deviations from approved design discovered after construction completion.

Ebasco procedures require that DCN's/FCR's be posted against the affected drawings and on the Drawing Close-Out Schedule (COS). Concurrently, Document Control updates their card file to indicate the addition of FCR's/DCN's. Project procedures dictate that a drawing revision will be initiated when 5 or more DCN's/FCR's have been posted. In addition, a drawing revision is initiated when a drawing has not been revised in one year and the drawing has FCR's or DCN's issued against the current revision. Revisions to drawings are reviewed and processed in accordance with Ebasco procedures. LP&L QA is currently reviewing those cases where FCR's may have been used in lieu of NCR's in order to ensure that reportability requirements have been met.

3) Generic Implications

Systems: N/A

Contractors: N/A

Describe the utility and contractor programs for verifying that the as-built condition accurately reflect designs. For example, it has been alleged that inside containment there are hardware problems related to missing bolts, bad welds, etc, and that the QA and construction records don't match.

1) <u>Valid:</u>	Y	N *
2) <u>Significant:</u>	Y	N *
3) <u>Generic:</u>	Y	N *

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis:

LP&L is currently not aware of unsatisfactory conditions, such as missing bolts or bad welds, etc., in containment, that have not been routinely identified and corrected, or are now pending corrective action.

Contractor programs at Waterford 3 require QC inspection of safety related work to assure that the requirements of drawings, specifications, and procedures are met. Verification inspection of physical work performed by contractors, including the inspection to verify orientation, location and configuration, is required. Modifications required during installation, beyond the tolerances allowed the contractor, receive Ebasco Engineering approval. Where as-built drawings are required, the contractor's field engineering provides the quality organization with the red-lined drawings, noting outstanding FCR's, DCN's, NCR's, etc. Quality Control inspectors verify the accuracy of the drawings. Upon resolution of comments, the drawings become the as-built record.

The contractor submits the as-built drawings to Ebasco for review against installation criteria. Ebasco Quality Assurance performs a review of the as-built documentation packages to assure they adequately document the installation shown on the as-built drawings. In addition, critical installations, such as Safety Class I piping, are field verified by design engineering to assure the stress analysis reflects the as-built piping configurations.

Deficiencies noted during reviews by Ebasco Quality Assurance and Engineering are documented and dispositioned. Dispositions may require a simple reverification or, if the condition is significant, a complete reverification of a contractor's work may be required.

The as-built program has been in place since early in the project. It will continue to be implemented as fuel loading and commercial operation are approached, and will be a continuing process throughout plant operation.

In addition to the various construction inspections and records reviews that have been made, specific inspections have been performed as a pre-requisite to pre-operational testing of the systems and additional walkdowns have been made as a pre-requisite to system turnover from the contractors to the owner. During the walkdowns, one of the primary objectives is the comparison of the system, as installed, to the current specifications and drawings, from the point of view of plant operations. Discrepancies are formally resolved through records review and/or engineering resolution.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

Describe the method for assuring that the interface between contractors was properly handled. For example describe when a hanger was put in and the base plate was grouted how the records were kept and brought together in the files.

- | | |
|------------------------|-----|
| 1) <u>Valid:</u> | N/A |
| 2) <u>Significant:</u> | N/A |
| 3) <u>Generic:</u> | N/A |

Response:

- 1) Evaluation of Validity - N/A
- 2) Safety Significance - N/A
- 3) Generic Implications - N/A

Response:

This item is not considered an "allegation" but rather a request for information; therefore, validity, significance, and generic implications are not addressed. The following information is provided to help describe on-site procedures.

Each contractor which performed safety related construction activities at Waterford 3 was responsible for the scope of work as defined in the individual construction contracts. As a result of the approved program under which each contractor worked, required records were generated and turned over to Ebasco. There is no requirement for records to be joined together. The only requirement is that records be traceable to the activity or component against which they were generated and be retrievable.

With respect to the example presented, the following is offered:

On January 13, 1981 Ebasco QA generated NCR W3-2450 which identified that specified grouting activities (beneath and behind base plates) were performed without documentation or quality inspection. This deficiency occurred because the civil contractor performing grouting activities thought that inspection and documentation was the responsibility of the contractor requesting the activity. The contractor requesting the grouting assumed that documentation and inspection was being provided by the contractor performing the grouting activity. The situation is described in full on Attachment #1 to NCR W3-2450.

To resolve the non-conformance, all base plates were inspected by Ebasco Q.C., and two Engineering Change documents [FCR-AS-976 (later FCR-AS-2066) and DCN-AS-509] were issued and a Construction/Contractor interface procedure #CP-716 was generated and distributed. The records, for the approximately 2000 base plates inspected, are part of NCR-W3-2450.

In early 1981, J. A. Jones was demobilized and grouting activities were performed by Ebasco Construction in accordance with CP-716 and CP-711.

The Ebasco grouting records are part of the concrete structure records and will not be joined with other contractor installation records.

It has been alleged that there are problems with the heat numbers, including heat numbers that are missing.

1) Valid:	Y *	N
2) Significant:	Y	N *
3) Generic:	Y	N *

Response:

1) Evaluation of Validity

Conclusion: Valid

However, those cases known to LP&L have been documented.

The following are examples of NCR's initiated to identify discrepant installation with respect to base metal heat traceability:

a. NCR W3-7538

This NCR documents concern over possible use of 1/2" and 3/8" Ø tubing with .049" minimum wall thickness in installations where .065" is required. This concern resulted from a lack of specific traceability documentation for some installations.

A review of the design was performed to identify those installations for which the installation of the .049" tubing was potentially a problem. Documentation was reviewed for these installations to identify those with questionable heat traceability. These were ultrasonically tested to verify proper material. The installations found to include .049" tubing were specifically evaluated to confirm acceptability.

b. NCR W3-7252

This NCR was initiated to identify lack of documentation for heat traceability for 1/2" tubing routed to 27 instruments.

Six of the instruments were acceptable without traceability in accordance with existing DCN-IC-232R1. Seventeen were identified as acceptable due to class break at the manifold, also in accordance with existing design. Four were identified as category P-N1 with non-ASME tubing which does not require traceability.

The installations were dispositioned to be acceptable.

c. NCR W3-3077

This NCR was generated to identify lack of documented specific heat traceability for instrument tap stiffener plates and fittings.

The installation was evaluated and dispositioned to be acceptable as the stiffener plates are not part of the pressure boundary and do not perform a structural function and specific heat traceability is not required by ASME for 3/4" diameter and smaller fittings.

d. NCR W3-3578

This NCR was generated to document a violation of Mercury Procedure SP-652 with respect to required specific heat traceability for structural steel support members.

The NCR was dispositioned to state that specific heat traceability is not required for each installation. Traceability of material through issue to Mercury is intact via implementation of Ebasco purchasing, receiving, storage, and issuing procedures.

It was determined that structural material issued to Mercury is qualified, with the exception of 100' of 2"x2"x $\frac{1}{4}$ " angle. This angle was accounted for as installed in the Turbine Building in non-safety installations.

e. NCR W3-4593, W3-4600, W3-4601

This NCR was initiated to document the lack of specific heat traceability to 1/2" tubing installed by Mercury.

The NCR was dispositioned to state that the existing installation meets the requirements of the ASME Boiler and Pressure Vessel Code. The intent of heat traceability requirements is to ensure that materials purchased and installed meet design requirements. This is done via the purchase of qualified material in all but specific cases in which the material is identified as "non-safety" and through the implementation of a materials control program.

To minimize exposure to required heat traceability research in the future, an investigation was performed of material received and installations completed. In those instances where traceability existed on documentation, those installations and associated material were eliminated from question. The possible heat numbers for the remaining installation were then determined based on warehouse issue and supply exhaustion.

In addition, a sample of five pieces of tubing were analyzed to confirm that material control had been maintained.

Installations associated with this NCR were accepted. NCR-4600 and 4601 also concerned this subject and were dispositioned in the same manner.

f. In addition to the above examples, there are approximately twenty-five additional installation nonconformance reports which address heat number traceability concerns, most of which relate to instrumentation tubing.

Basis:

We are not aware of discrepancies with the heat traceability requirements at Waterford III which have not been documented. In accordance with established procedures, when discrepancies occur, they are identified on appropriate discrepancy documents for the activity. The discrepancy is then resolved via that document or, if warranted, upgraded to a nonconformance report and resolved via disposition and, if required, rework.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that the document reviewers brought in by EBASCO to review piping and hanger records were not qualified to perform that type of review. They were designers and draftsmen.

1) <u>Valid:</u>	Y	N *
2) <u>Significant:</u>	Y	N *
3) <u>Generic:</u>	Y	N *

Response:

1) Evaluation of Validity

Conclusion: Invalid

Basis:

- A. The inference that designers and draftsmen are incapable of performing documentation reviews is without merit. Such personnel are experienced, technically competent and, based on their background/qualifications, appropriate personnel for the task. Additionally, such personnel, when performing safety-related activities, are fully aware of their obligation to quality, and their job requirements as delineated by the Ebasco Nuclear Quality Assurance program manual (ETR-1001) and its principal implementing procedures. In addition to designers and draftsmen, several Quality Assurance Engineers were assigned to these document reviews.
- B. To assure achievement of suitable proficiency in their document review assignments, Ebasco developed a comprehensive and documented training program to provide exact and specific instructions to record reviewers, commensurate with their job function. This program was comprised of classroom instruction and on-the-job training under the technical direction of experienced lead reviewers as defined in QAI-14.

The classroom portion of the program provided a general indoctrination into the concepts and objectives of quality assurance. Topics covered include the philosophy of Quality Assurance, the Ebasco Quality Assurance Program and organization, major codes, standards and regulations which form the bases of the Ebasco QA program, and the objectives of the Ebasco QA program at the Waterford project. To supplement this classroom instruction, reviewers were given independent study assignments in codes, standards and regulatory requirements, as well as the Ebasco quality program manual. The classroom training also provided a detailed review of QA records requirements, as delineated in ANSI N45.2.9. Reviewers were then required to review specific procedures. The technical aspects of the individual review activity was provided via a program of on-the-job training under the direction of the lead reviewer. It involved a "walk-through" and analysis of document packages. The reviewer, depending upon prior experience, was required to complete a minimum duration of OJT hours (40 to 80) under the direction of a lead reviewer in the work environment. Upon completion of this minimum OJT, the ability of the reviewer was assessed by the lead reviewer, who decided if the reviewer was capable of performing reviews within established work system, or if additional OJT was required. Additional OJT was conducted as required until the cognizant lead reviewer became confident of the reviewers ability to perform the assigned tasks.

Within the work system, the cognizant supervisor is afforded latitude for independent judgement regarding utilization of personnel. Each supervisor has the authority to retain only those reviewers who are capable of performing their assigned tasks.

Additionally, the status of reviewer training and qualifications is periodically reviewed and monitored by the site training group in cooperation with the applicable review group supervisor.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that the hydrostatic testing program is not in accordance with the ASME Code. The Code requires visual examination of all welds during the test and the contractor has not documented that such visual examinations were performed.

1) Valid:	Y	N *
2) Significant:	Y	N *
3) Generic:	Y	N *

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis:

ASME Section III, Article 6000, requires that components installed shall be tested at a minimum pressure of 1.25 times design pressure for a minimum of 10 minutes in the presence of the Authorized Nuclear Inspector (ANI).

Test Data Sheets per procedure ASP-IV-63 were completed for all ASME Section III testing and verify that the above Code requirements were complied with.

All hydrostatic and pneumatic tests performed on ASME piping and components and their respective Test Data Sheets were subsequently reviewed by Ebasco's Quality Assurance Installation Review Group (QAIRG) to assure compliance with the above Code requirements. This review has been completed and documented. The review documentation and the actual Test Data Sheets are on file in the Quality Assurance vault.

The Code requires visual examination of all welds during testing. This was performed and documented on the individual Test Data Sheets for each ASME hydrostatic or pneumatic test. The Test Data Sheets are signed by the personnel performing the test as visually inspecting, witnessing, and accepting the test.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that hangers in safety-related systems were removed after they had been installed and inspected, and that they were replaced with non-safety related hangers. Also walkdown, performed to identify what was in the field, resulted in the changing of as-built drawings and fabrication of documents to reflect what was actually in the field.

1) <u>Valid:</u>	Y	N *
2) <u>Significant:</u>	Y	N *
3) <u>Generic:</u>	Y	N *

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis:

To our knowledge, pipe supports have not been removed and replaced with permanent non-safety related pipe supports. Each installing contractor had a program to control the removal and reinstallation of pipe supports using their installation procedures.

Walkdowns to identify what was in the field were performed under NCR-W3-4010. Per the NCR, pipe supports were reinspected, discrepancies reported, and either the supports were reworked to conform to design or accepted by ESSE based on evaluation of the reinspection data.

An additional program, the Hanger Verification Program, involved walkdowns and significant inspections in order to verify that pipe stress calculations reflect actual field conditions. Ebasco Site Support Engineering (ESSE) and a Hanger Verification Group assigned to LP&L Startup participated in this program which involved verification of as-built hanger installation and piping geometry.

It is possible that the allegation refers to the use of temporary hangers. (These were used to support piping during construction or to allow testing to proceed.) As part of the System turnover process, ASP-IV-50, Ebasco design engineering re-evaluated the piping supports to ensure proper support of the piping during startup tests. Occasions have existed wherein during this process the decision was made that a pipe support/hanger required modification. In these instances, the permanent hanger was removed and a temporary hanger installed to allow testing to proceed until a revised hanger/support design was processed and the new hanger/support fabricated. Temporary hanger/supports are later replaced by permanent installations which receive the requisite inspections.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that there are problems with welding. These problems include:

1) Valid:	Y	N *
2) Significant:	Y	N *
3) Generic:	Y	N *

- a. An NCR on undersized welds dispositioned by saying that the Code allows a certain percentage to be undersized without actually verifying that the Code tolerance was not exceeded.

Response:

1) Evaluation of Validity:

Conclusion: Invalid

Basis:

NCR's W3-5378, W3-5760, and W3-7680 are examples involving undersized welds, which potentially fall within the scope of the allegation.

NCR-W3-5378 addresses undersized fillet welds on non-standard instrumentation fittings and adaptors. The disposition of this NCR required rework of welds not meeting ASME Code specified weld sizes. Additionally, the disposition defined an acceptable weld size for the specific applications which was smaller than the size previously used by the Instrumentation Contractor. This re-defined weld size meets ASME Code requirements.

NCR-W3-5760 describes a condition of undersized welds in ASME Class 2 and 3 piping, specifically small bore piping socket welds. The situation described in NCR-W3-5760 has been reported as Significant Construction Deficiency (SCD) No. 74. The disposition invokes Code case N-316 and the disposition does not state that "...the code allows a certain percentage to be undersized..." The NCR disposition specifically outlines sampling re-inspections for the purpose of verifying whether or not Code case tolerances were exceeded. Also, the basis and justification for "sampling" inspections considered Code case criteria.

The piping contractor performed re-inspections, with subsequent review and evaluation by Ebasco Engineering and Quality Assurance, as outlined in NCR-W3-5760. LP&L is conducting overview audits and reviews of this matter.

NCR-W3-7680 was initiated, in lieu of re-opening NCR-W3-5760, to address the corrective action associated with undersized welds in the chilled water system. The undersized welds were identified through an audit conducted by LP&L Quality Assurance. The need for a supplemental final report to SCD No. 74 is being evaluated based on NCR-W3-7680.

2) Safety Significance:

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications:

Systems: N/A

Contractors: N/A

It has been alleged that there are problems with welding. These problems include:

1) <u>Valid:</u>	Y	N *
2) <u>Significant:</u>	Y	N *
3) <u>Generic:</u>	Y	N *

- b. Welders and QC weld inspectors were not adequately qualified.

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis: Welders and Q.C. weld inspectors were adequately qualified to procedures developed consistent with applicable ASME Section IX and AWS code requirements as well as ANSI N45.2.6. Applicable Ebasco and contractor procedures are listed below. Personnel qualification in the area of welding and welding activities have been audited and surveilled. Technical deficiencies in certifications that may have existed were identified and dispositioned in accordance with program requirements.

WELDER QUALIFICATIONS		PROCEDURES	QC INSPECTOR QUALIFICATIONS
Ebasco	CP-684		WOC-121, ASP-I-3
T&B	TBP-7		TBP-4
NISCO	ES-3016		ES-116-2, ES-117
Gulf	PR-11.4		PR-20.0
Mercury	MCP-2100		QCP-3050, 3070
F&M	QCP-501		QAP-101W3
C.E.	O.P.-9.6		O.P.-2.1, QAI-2.2
Waldinger	SWP-6.1-4		SQCP-2.1-1
	SQCP-9.1-1		
CE Avery	AM-12-001		AS-P-003
American			
Bridge	WQP-6		Proc. #4
J.A. Jones	W-WP-3		POP-N-702
Nooter	QA Manual; Procedure N-9		NDE-10 (NDE Personnel)
	Paragraph 3.1.3		
CBI	111B-1101	111B-5415	111B-8103
	111B-1201	111B-6201	111B-8108
	111B-1303	111B-6402	111B-8123
	111B-1401	111B-6403	111B-8125
	111B-5108	111B-7101	111B-9302
	111B-5118	111B-7202	WPS-E7018
	111B-5408	111B-7301	WPS-308L
	111B-5412	111B-7401	WPS-E309A
	111B-5413	111B-7413	WPS-800
	111B-5414	111B-8101	WPS-1310

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that there are problems with welding. These problems include:

1) <u>Valid:</u>	Y <u>*</u>	N <u> </u>
2) <u>Significant:</u>	Y <u> </u>	N <u>*</u>
3) <u>Generic:</u>	Y <u> </u>	N <u>*</u>

- c. Fit-ups were done six to eight months prior to the final weld.

Response:

- 1) Evaluation of Validity

Conclusion: Valid.

Basis: N/A

- 2) Safety Significance

Conclusion: No impact on safety.

Basis:

It is normal construction practice to fit-up and weld the root pass of a weld joint and complete the weld out at a later date. This practice does not violate applicable codes, standards, or procedures.

- 3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that there are problems with welding. These problems include:

1) <u>Valid:</u>	Y <u>*</u>	N <u> </u>
2) <u>Significant:</u>	Y <u> </u>	N <u>*</u>
3) <u>Generic:</u>	Y <u> </u>	N <u>*</u>

- d. The heat number for the filler material of one weld was used for other welds.

Response:

- 1) Evaluation of Validity

Conclusion: Valid

Basis: N/A

- 2) Safety Significance

Conclusion: No impact on safety.

Basis:

There is no requirement to procure "one unique heat" of weld filler metal for a single weld joint or "one unique heat" for all/different weld joints. The use of one heat weld filler material for many welds is a normal practice which does not violate codes, standards, or procedures.

- 3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that there are problems with welding. These problems include:

1) <u>Valid:</u>	Y *	N
2) <u>Significant:</u>	Y *	N
3) <u>Generic:</u>	Y	N *

e. Weld data report did not match construction documents.

Response:

1) Evaluation of Validity

Conclusion: Valid.

Basis: In the absence of specifics, the following is offered:

During an audit conducted by LP&L of turnover packages, discrepancies were detected between the Quality Assurance/Quality Control documentation and the actual as-built condition.

Significant Construction Deficiencies (SCD) Number 60, "Turnover Documentation and Inadequate Hanger Weld Problems", and SCD Number 78, "Structural Steel Deficiency" are examples of welding problems that were documented and resolved.

2) Safety Significance

Conclusion: Significant, but resolved.

Basis:

The safety evaluation is provided in SCD Number 60 and 78 in accordance with 10CFR50.55(e) reporting requirements.

3) Generic Implications

Systems: N/A

Contractors: N/A

Through implementation of the various tiers of Quality Assurance Programs, installation construction records have been reviewed and problems identified have been properly dispositioned. The as-built installation has been verified through surveillances and re-inspections (as defined in SCD No. 60 and 78) conducted to compare documentation with the as-built configuration.

It has been alleged that there are problems with welding. These problems include:

1) <u>Valid:</u>	Y	N *
2) <u>Significant:</u>	Y	N *
3) <u>Generic:</u>	Y	N *

- f. Coping of joints where two beams meet was not done in accordance with AISC Codes.

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis:

Coping was done in accordance with AISC Specifications, which call for 1/2 inch minimum radius fillet. Ebasco Specification 1564.723, "Structural Steel", paragraph 5.8, states: "All copes, blocks, and other reentrant cuts shall have 1/2 inch minimum radius fillet." This requirement is listed as a general note on Ebasco Design Drawing, 1564-G-814 and in Ebasco Construction Procedure, CP-790, paragraph 7.9.

Nonconforming copes found in structural steel work were corrected as they were identified. In addition, the Q.A. surveillances which in part resulted in the program to reinforce structural steel connections under SCD No. 78 (NCR-W3-6263) included observation of nonconforming copes. Those cases were identified and corrected under the program for disposition of SCD No. 78.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that the NCR addressing one-inch to half-inch non-safety related adapters that were used in safety related systems was improperly dispositioned since there were more adapters in the field that had not been accounted for.

1) <u>Valid:</u>	Y	N *
2) <u>Significant:</u>	Y	N *
3) <u>Generic:</u>	Y	N *

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis:

In the absence of specifics, the following is submitted:

NCR-126 (Ebasco NCR-W3-2195) addresses safety-related applications. Traceability is not required for non-safety applications.

The subject adaptors were procured from Capitol Valve & Fitting via site purchase order WP3-1139 for both safety and non-safety related applications. The applicable safety-related systems were walked down. Where heat traceability codes were not visible on the adaptor, and were not traceable through installation documentation, the adaptors were replaced with traceable adaptors per the requirements of the NCR. The balance of adaptors (148) were marked for non-safety application only.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that certain approved Mercury procedures are not being properly implemented in the field. For example, Mercury procedure SP-666 dealing with anchor bolts requires certain actions but those actions are not shown as inspection points. Provide the documentation to show that a response was received to the concerns and kept as a part of the permanent site records.

1) Valid:	Y <u> </u>	N <u> *</u>
2) Significant:	Y <u> </u>	N <u> *</u>
3) Generic:	Y <u> </u>	N <u> *</u>

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis:

In absence of specifics the following clarification is submitted:

Actions required by Mercury procedure SP-666, "Procedure for Drilled-In Expansion Type Anchors Seismic - 1", are outlined in paragraph 6.1 - Installation, paragraph 6.2 - Inspection, paragraph 6.3 - Testing, paragraph 6.4 - Repair of Test Anchor Failures, paragraph 6.5 - Repair of Damaged Concrete, and paragraph 6.6 - Documentation.

Inspection checklist Form 277A includes specific items which correspond with the paragraphs listed above as follows:

Procedure Paragraph Actions	Inspection Checklist Item
6.1	1
6.2	2
6.2	3
6.2	4
6.3	5
6.3	6
6.4	Form 211A
6.5	Form 211A
6.6	Forms 211A & 277A

Therefore, all actions of the procedure are reflected as inspection points on Q.C. Inspection Checklists or related forms.

The last sentence of the allegation alludes to "concerns" without any specificity. Again, in absence of specifics the following is submitted:

Through the various Q.A. Record Reviews performed by the different tiers of Q.A. (i.e., Mercury, Ebasco, LP&L) any concerns that may have existed were documented and are on file as part of the permanent site records.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that there are material traceability issues that have not been resolved concerning the permanent attachments to Category 1 and 2 welded pressure boundaries.

1) <u>Valid:</u>	Y	N *
2) <u>Significant:</u>	Y	N *
3) <u>Generic:</u>	Y	N *

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis:

Material traceability issues related to attachments for Category 1 and 2 welded pressure boundaries have been identified and resolved. All Class 1 welded attachments (non-pressure retaining as defined in the ASME Section III - Ref. NB-2100) shall conform to the requirements of the material specifications as listed in NB-2121. Material identification, as outlined in NB-2150, is for pressure-retaining material identification only. However, material test reports were required for attachments to Class 1 pressure boundary material and have been included in the appropriate piping documentation packages. Requirements for structural and non-structural attachments to Class 2 and 3 pressure retaining material are outlined in Section NC/ND2121 which states "Material performing a non pressure retaining function welded to a pressure retaining material need conform only to the requirements of the specifications for materials listed in Table I-7.0 of Appendix I". Material identification requirements are the same as for Class 1, but only for pressure-retaining materials. The Ebasco interpretation of the code is that structural and non-structural attachments are outside the scope of Section III, although Section III imposes technical requirements on attachment material. Welding of the attachments was performed in accordance with the code and documentation was reviewed accordingly. On Class 2 and 3 attachments, a Certified Material Test Report (CMTR) or Certificate of Compliance was utilized to verify that attachment material met the requirements of the code.

The Ebasco code interpretation was established during records review and was the basis for the review of piping documentation. ANI concurrence was received on the Ebasco code interpretations.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractor: N/A

It has been alleged that certain QA instructions that were approved (such as in EBASCO W3 QAIRG-0165) were subsequently not utilized or withdrawn.

1) <u>Valid:</u>	Y <u>*</u>	N <u> </u>
2) <u>Significant:</u>	Y <u> </u>	N <u>*</u>
3) <u>Generic:</u>	Y <u> </u>	N <u>*</u>

Response:

1) Evaluation of Validity

Conclusion: Valid.

Basis: N/A

2) Safety Significance

Conclusion: No impact on safety.

Basis:

The allegation is not a statement of improper practices. For example, old (non-current) revisions of instructions, procedures, etc. are typically not utilized.

The referenced document (W3 QAIRG-0165) is not a Quality Assurance Instruction (QAI), but a memorandum. (QAI's are developed, revised, and issued in accordance with Ebasco procedure QAS-23.) This interoffice memorandum presented a method of organizing certain document packages (providing administrative direction for collating and processing) to facilitate subsequent reviews. The method described in the memo was subjected to trial use which resulted in the determination that it was overburdening and unnecessary, and therefore, should not be continued.

The reviews in question were conducted using QAI-No. 9 and QAIRG No. 15.

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that NCR W3-4352 was not properly dispositioned since variations to the codes and standards are being made but there is not a discussion of the codes in the recommended disposition.

1) <u>Valid:</u>	Y	N *
2) <u>Significant:</u>	Y	N *
3) <u>Generic:</u>	Y	N *

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis:

NCR W3-4352 was properly dispositioned and the documentation supporting the disposition was contained within the NCR. However, one of the twenty-seven attachments to this NCR (Attachment 25) was not referenced and may have led to this allegation being made.

Waterford 3 site procedure ASP-III-7, Attachment 7.1, Block (20) "Evaluation of Disposition," states in part: "The Engineering evaluation of disposition will provide justification as applicable to support and document compliance to applicable Codes and Standards or make reference to the appropriate analysis reports."

Although Attachment 24 references "several tests" as the basis for departure from the Code acceptance criteria - it did not identify that these "several tests" are contained within Attachment 25.

Inspection criteria, established to assure compliance to the design requirements and the Engineering evaluation of the weldments in question were documented in Attachment 24. The test results, which proved the weldment to be far superior to the tube track material (11,000 lb. test result versus 100 lb. track load), were documented on Attachment 25.

To resolve this documentation deficiency, Attachment 24 has been modified to reference Attachment 25.

It should be noted that the final disposition of a deficiency is not required to be consistent with the recommended disposition.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that certain EBASCO recommended dispositions of Mercury Co. Non-conformance reports were not carried out by Mercury. What procedure was followed to assure that approved dispositions were carried out.

1) <u>Valid:</u>	Y <u>*</u>	N <u> </u>
2) <u>Significant:</u>	Y <u> </u>	N <u>*</u>
3) <u>Generic:</u>	Y <u> </u>	N <u>*</u>

Response:

1) Evaluation of Validity

Conclusion: Valid.

Basis: N/A

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

In the absence of specifics, two interpretations of the allegation can be made as follows:

Allegation Interpretation 1: Recommended dispositions provided by Ebasco were not complied with by Mercury.

Response: Mercury procedure SP-664, "Handling of Nonconformances and Corrective Action", revision 4, paragraph 5.3 provides direction for the processing of recommended dispositions. Ebasco Nonconformance Report W3-7317 documents the fact that Mercury did not follow procedural direction in the processing of certain NCR's in that Mercury NCR's dispositioned by Mercury as "use as is" were not recommended by Mercury to be upgraded to Ebasco NCR status. NCR W3-7317 was properly dispositioned and verification of corrective action was accomplished as described in Ebasco Procedure ASP-III-7. In accordance with the recommended disposition of NCR-W3-7317, Ebasco QA Engineering and Ebasco I&C Engineering jointly reviewed Mercury NCR's which had not been upgraded. Those that required upgrading (37 out of 437) to Ebasco NCR status were upgraded and dispositioned in accordance with program requirements. Additional verification was provided through re-inspection walkdowns and/or document reviews.

Allegation Interpretation 2: Recommended dispositions were not assigned to Mercury for corrective action.

Response: Assignment of corrective action was made by Ebasco Construction Engineering and Quality Assurance, based on the approved disposition. Due to the type of fix and labor forces involved, corrective action could have been, and sometimes was, accomplished by contractors other than Mercury.

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that since there are no high point vents to vent air from the instrumentation lines the hydro test results are suspect.

1) <u>Valid:</u>	Y <u> </u>	N <u> *</u>
2) <u>Significant:</u>	Y <u> </u>	N <u> *</u>
3) <u>Generic:</u>	Y <u> </u>	N <u> *</u>

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis:

Hydrostatic Tests are valid with or without high point vents. One of the purposes of providing high-point vents is to permit gravity venting of vessels and piping so that the energy contained in a system during hydrotest can be minimized. This minimizes danger to personnel in the event of a rupture. The pressure test remains valid, be there air or water in the lines in that the entire system is under pressure and a full search for leaks is performed.

The presence of air in piping or vessels during a hydrostatic test will not affect the validity of the test. In fact, it may be considered as a more stringent test. Due to the lower viscosity of air, it will reveal a smaller leak than water at the same pressure.

The following specific ASME Code references will serve to emphasize that the rule, that high point vents must be provided, is not and never has been intended to be hard and fast.

1. NC-6112 (a) (1), footnote 1 states that pneumatic tests may be made with the item being tested partially filled with water, if desired.
2. The current wording of NC-6211 has deleted the reference to high point vents, via Summer, 1981 Addenda, "The component or system in which the test is to be performed shall be vented during filling to minimize air pocketing" (emphasis added). Although this revision was published in the Summer 1981 Addenda, the Code has always allowed the use of later specific revisions, such as this, provided the revision is not taken out of context. A review of the ASME Committee's records revealed that they deleted the reference to high point vents because of several reasons, e.g.
 - a. Some installations are by design unventable, such as the inverted U-tube in a steam generator. This design has been a virtual standard since before Section III was written.
 - b. The issue of nuclear safety is not affected by the methodology of hydrostatic testing.
 - c. The revision is a true "stand-alone" and need not be weighed against a more stringent rule elsewhere in the Code, because there is none.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

(29) Sheet 1 of 1

What assurance is there that magnetic particle examinations performed using ASTM E109 as modified by FCR-AS-882 will detect all discontinuities?

1) <u>Valid:</u>	N/A
2) <u>Significant:</u>	N/A
3) <u>Generic:</u>	N/A

Response:

- 1) Evaluation of Validity - N/A
- 2) Safety Significance - N/A
- 3) Generic Implications - N/A

Response:

This item is not considered an "allegation" but rather a request for information; therefore, validity, significance, and generic implications are not addressed. The following information is provided:

ASTM E109, as modified by FCR-AS-882, provides adequate confidence that discontinuities are detected.

ASTM E109, under which magnetic particle testing activities are conducted, allows deviations from specific requirements. AWS D1.1 requires only a visual examination of welds. Ebasco has imposed the additional requirements of either Magnetic particle testing or Liquid Penetrant testing of Seismic Category I structural welds. In the case of welds which, due to configuration, did not allow two separate inspection current flow directions, one directional testing is allowed by Ebasco Engineering.

Visual inspection, with the additional requirement of MT or LP testing, provides more than adequate inspection for the intended service. In isolated cases when only one directional Magnetic Particle Testing is possible, visual inspection and one directional MT testing is sufficient to assure detection of discontinuities that are normally detected with magnetic particle testing.

Discuss the procedure for LP&L and EBASCO to review their vendor NCR's to assure that they have been properly dispositioned at the vendor level and forwarded for EBASCO and LP&L review.

- | | |
|------------------------|-----|
| 1) <u>Valid:</u> | N/A |
| 2) <u>Significant:</u> | N/A |
| 3) <u>Generic:</u> | N/A |

Response:

- 1) Evaluation of Validity - N/A
- 2) Safety Significance - N/A
- 3) Generic Implications -- N/A

Response:

This item is not considered an "allegation", but rather a request for information; therefore, validity, significance, and generic implications will not be addressed. The following information is provided:

Ebasco "Nuclear Quality Assurance Program Manual" Topical Report ETR1001, as adapted for Waterford SES Unit #3, Section QA-III-6 titled "Nonconformances" provides the elements of Nonconformance Report (NCR) processing. Section QA-III-6 established the requirements for the identification, control, and disposition of items or services found to be in nonconformance with technical requirements of specifications, purchase orders, drawings, or the vendors own specifications, drawings, or procedures.

Implementing procedures call for the identification of nonconforming conditions on a "Nonconformance Report".

The vendor or other cognizant personnel describe and recommend a disposition of the nonconforming condition, and forward the Nonconformance Report to Ebasco New York Quality Assurance Engineering for processing. Quality Assurance Engineering routes the NCR containing the description of the nonconformance and recommended disposition to the Lead Discipline Engineer (LDE) or designee responsible for the equipment or service in question, for evaluation.

An evaluation of the recommended disposition is made by the LDE or designee and is entered into the appropriate portion of the Nonconformance Report. The evaluation by the LDE is binding on the vendor. The LDE then signs the form and returns it to the Quality Assurance Engineer (QAE). The Quality Assurance Engineer, as appropriate, secures the agreement of other concerned disciplines by their signature on the Nonconformance Report. The QAE signs the report and distributes it to the vendor for action. LP&L has delegated to Ebasco the responsibility for processing and control of vendor nonconformances. Vendor nonconformances are submitted to LP&L for information.

No corrective action by the vendor can take place until the vendor receives written instructions from the appropriate Ebasco Engineering Discipline through Quality Assurance Engineering. When the agreed to disposition requires future actions, the NCR is checked "Verification of Disposition Required". The Nonconformance Report is not closed until the agreed to actions are complete and documentation is presented to appropriate Ebasco Q.A. personnel. The Nonconformance Report is then signed by Ebasco Q.A. personnel indicating that the disposition has been implemented. Quality Assurance Engineering redistributes the closed Nonconformance Report to the same individuals or organizations who received the previous transmittal.

The vendor is not permitted to release nonconforming material until the disposition or corrective action, as required by the NCR, is implemented.

In order to monitor disposition and verification of corrective action, Ebasco Quality Assurance Engineering maintains a record of all NCR's and their current status.

It has been alleged that there are a significant number of missing documents and consequently the records at the site are incomplete. Describe the program that you have to verify that the records packages are complete. Have you performed a 100% review of the document packages, using qualified staff, to assure that they are complete.

1) Valid:	Y	N *
2) Significant:	Y	N *
3) Generic:	Y	N *

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis:

At this time, the review of safety related contractor's installation records is essentially complete. There are some number of construction activities still in process with the Q.A. review of records for these completed construction activities ongoing.

The records review program at Waterford 3 is a multi-phase system as defined in QAI-9 and ASP-IV-50. Ebasco Site Office Engineering, in conjunction with LP&L Startup, developed and issued, to all site contractors and QAIRG, the Specification Drawing List which itemized all drawings, specifications, Field Change Requests, and Design Change Notices applicable against a startup system. This document was used by QAIRG to verify that all records required from the contractor had been submitted for review.

Prior to reviewing records, QAIRG developed supplemental instructions which were contractor specific. These instructions defined the specific contractor quality records which are required in each individual records package submitted for review. Through this program, Ebasco Q.A. records review personnel became knowledgeable of the documents (drawings, FCR's, DCN's, Specifications) and the forms and format required to be submitted by each contractor for review.

At system turnover, the records were statused in accordance with QAI-9 and/or QAI-9A and deficiencies were identified. Records statusing was required to support startup system testing by LP&L.

At system construction completion, the completed documentation was turned over by the contractor to QAIRG for final review. Final review included a review for construction completion documentation, deficiency closure documentation and repair or rework documentation. Upon review and acceptance by QAIRG, the records were submitted to LP&L Construction Q.A. for a system turnover audit and finally to the Ebasco Q.A. Records Vault for permanent filing.

Upon receipt in the Ebasco Q.A. Records Vault, a check is made by vault personnel for the required review checklists. Prior to turnover of the records to LP&L per ASP-IV-75, a verification by records vault personnel is made to assure that the necessary review checklists are attached to the documentation.

Inconsistencies during the records review process are formally dispositioned.

At various stages of the records review process, there have been occasions in which records were thought to be missing. Such "missing" documents were most often located in different files. The records of some demobilized contractors were at the time of receipt by Ebasco Q.A., filed by contractor and by record type. These had to be rearranged into record packages reflecting the construction, testing, and inspection activities, involved in the installation.

Significant Construction Deficiency No. 78, and the following NCR's address "missing" documents:

NCR-W3-7431	NCR-W3-3165	NCR-W3-7355
NCR-W3-5564	NCR-W3-7302	NCR-W3-7423
NCR-W3-5973	NCR-W3-7514	NCR-W3-7154

Item 14.J of LP&L letter W3K84-0842 to the NRC concerning the Construction Appraisal Inspection also discusses what appears to be isolated cases of missing or misplaced records.

Except for records relating to construction in process, these reviews are complete and have been performed by qualified records review personnel using approved procedures.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that in some cases non-safety grade was used in safety systems, but that the material certs or heat numbers that were listed on the documents were those of other safety related components.

1) <u>Valid:</u>	Y <u>*</u>	N <u> </u>
2) <u>Significant:</u>	Y <u> </u>	N <u>*</u>
3) <u>Generic:</u>	Y <u> </u>	N <u>*</u>

Response:

1) Evaluation of Validity

Conclusion: Valid.

Basis: N/A

2) Safety Significance

Conclusion: No impact on safety.

Basis:

In the absence of specifics, the following is submitted:

In mid 1983, QA record reviewers identified a situation wherein instrumentation installation documentation for a small amount of $\frac{1}{4}$ " tubing was modified in an unauthorized and unacceptable manner. This problem was documented on NCR-W3-6623 and the subject tubing was cut out and replaced.

Additionally, a similar allegation was received by Ebasco Q.A. from a former instrumentation contractor employee in late 1982. The alleged improper scribing of heat numbers on tubing without proper authorization and documentation is addressed on Mercury NCR-2323 and Corrective Action Report (CAR) 134. The improper heat number changes were resolved by cutting out the old tubing and replacing with new tubing as documented on NCR-2323. CAR 134 documented the training of craftsman in the proper method of scribing heat numbers on tubing. The identified instance was properly investigated, documented, and resolved in accordance with Quality Program requirements.

3) Generic Implications

Systems: N/A

Contractors: N/A

How were the problems identified in W3 QAIRG-0393 dealing with welding procedure impact test requirements resolved?

1) <u>Valid:</u>	N/A
2) <u>Significant:</u>	N/A
3) <u>Generic:</u>	N/A

Response:

- 1) Evaluation of Validity - N/A
- 2) Safety Significance - N/A
- 3) Generic Implications - N/A

Response:

This item is not considered an "allegation" but rather a request for information; therefore, validity, significance, and generic implications are not addressed. The following information is provided:

In April 1983, a review of the welding procedures and their application to site installation welds was performed by Ebasco Engineering. This review indicated that the welding procedure qualification impact data satisfied the applicable code requirements for the installation welds on which they are used.

Impact test data is required for Main Steam and Feedwater Pipe Material and welding procedure qualification, as required by Ebasco specification LOU-1564.100, is an integral part of Contract W3-NY-11. To assure that installation welding procedures met impact test requirements, an evaluation was conducted to verify that only approved procedures, with the associated impact test data, were used for welding of the Main Steam and Feedwater systems between the steam generator nozzles and containment isolation valves. This evaluation concluded that no procedures were used which did not have the appropriate charpy impact qualification documentation.

(34) Sheet 1 of 1

Are certs of materials used in non-safety grade systems maintained and traceable?

1)	<u>Valid:</u>	N/A
2)	<u>Significant:</u>	N/A
3)	<u>Generic:</u>	N/A

Response:

- 1) Evaluation of Validity - N/A
- 2) Safety Significance - N/A
- 3) Generic Implications - N/A

Response:

This item is not considered an "allegation" but rather a request for information; therefore, validity, significance, and generic implications are not addressed. The following information is provided:

There is no requirement to maintain certs for non-safety materials, nor to maintain traceability of such documentation.

However, as a Waterford 3 practice, non-safety related manufacturing documentation was retained. Additionally, traceability does exist for a significant portion of the unique "engineered" (conceptual design as opposed to standard off-the-shelf) items. These records are filed in the Ebasco QA Vault, but are not required to be indexed or entered into the QA Records Log.

It has been alleged that there are safety related plate materials inside of the containment that do not have material traceability because, EBASCO did not require that CB&I have such information. When asked CB&I could only narrow the heats down to a certain number rather than any specific heat. How are you sure that the proper material was used in those fabricated items?

1) <u>Valid:</u>	Y <u> </u>	N <u> *</u>
2) <u>Significant:</u>	Y <u> </u>	N <u> *</u>
3) <u>Generic:</u>	Y <u> </u>	N <u> *</u>

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis:

From the wording of the allegation, it appears that material discussed is that which is classified by CB&I as "Class D Material."

Material traceability exists for this material via CB&I's Bill of Material and release for shipment documentation.

Direct heat traceability to a Certified Mill Test Report does not exist for this material nor is it required by the approved CB&I Quality Assurance program. This situation has been addressed on NCR's W3-5313 and W3-6224.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that the QA reviewers were denied access to documentation areas previously inspected by the NRC. How did you assure that all QA reviewers were allowed access to all documentation that they needed to complete their reviews?

1) Valid:	Y	N *
2) Significant:	Y	N *
3) Generic:	Y	N *

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis:

Access to documentation was not denied to QA reviewers. However, at one point in time there was a large volume of unreviewed records and it was determined that the available record reviewers should concentrate on the unreviewed records before re-reviewing previously reviewed records. The records to which reviewers were allegedly "denied access" had been reviewed by Ebasco Q.A. in accordance with an approved records review program. The physical locations of the various types of records within the vault made it difficult to produce complete packages and it was known that a re-filing effort was necessary prior to any re-review.

The portion of the allegation regarding previous NRC inspection of the documentation appears to be out of context with the actual statement that may have been made to the reviewers. The statement probably made is that the NRC was on-site during the time that early civil construction activities were in process and therefore monitored those activities. The statement, if in fact made, related to NRC inspections of the construction activities and not to the documentation.

The manager of the review group was obligated to assure that the records reviewers were performing all required reviews. Ebasco Q.A. Management felt that the records not reviewed by QAIRG had a higher priority while the construction, craft, QC and engineering personnel who generated the records, were still available to effect resolution of deficiencies. It was in this context that the review schedule was defined. At this time, the subject records have been re-filed as necessary and the re-review effort is essentially complete.

The records that are stored in the Ebasco Q.A. Records Vault are subject to access controls established by QAI-1 and ANSI N45.2.9. Any records reviewers requiring access to these records were allowed access as deemed necessary by the Ebasco Quality Program Site Manager or the QAIRG Manager and the Q.A. Records Supervisor. Similarly, each site contractor established controls regarding access to quality records and the accessibility or availability of the records to Ebasco Q.A. for review.

Each QAIRG review group had control numbers issued by Document Control which allowed records reviewers to request and receive necessary engineering documents.

The records reviewers were at all times allowed access to records within the boundaries established by site programs and the necessary review schedules.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that the material traceability on tube tracks was lost and consequently the materials may not have been appropriate for their use.

1) <u>Valid:</u>	Y	N *
2) <u>Significant:</u>	Y	N *
3) <u>Generic:</u>	Y	N *

Response:

1) Evaluation of Validity

Conclusion: Invalid

Basis:

The design specifications did not require material traceability by heat number. The specifications required only that Certificates of Compliance be provided by the manufacturer who supplies the tube track materials. Hence, all tube track materials, except for fittings, were purchased as "safety-related" from Ebasco approved vendor - J.C. White. Certificates of Compliance for the material were provided.

Tube track fittings (i.e., tees, elbows, etc.) were not supplied with Certificates of Compliance. Fitting material was subsequently qualified for use by chemical and physical property tests, as documented in Significant Construction Deficiency No. 35.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that bearing values on the hangers were incorrect because the concrete wall behind the supports was uneven and no epoxy was used.

1) <u>Valid:</u>	Y	N *
2) <u>Significant:</u>	Y	N *
3) <u>Generic:</u>	Y	N *

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis:

The above allegation applies to exposed base plates installed at Waterford by various contractors.

Contractors who installed exposed base plates had procedures that required Quality Control Inspection of the bearing surface between the plate and the concrete to values prescribed by the Design Engineer (Ebasco). Plates that failed to meet the established criteria were reworked or grouted until the bearing contact was correct, or evaluated and accepted by the Design Engineer.

To verify that pipe hangers did have the required bearing, Ebasco performed a walkdown of 200 hangers and documented, on NCR W3-6726, that 7 did not meet the bearing area criteria. As part of the disposition to this NCR, Ebasco performed a survey of an additional 400 anchor plates for bearing area between the plate and concrete. During this survey five (5) additional anchor plates that did not meet the criteria were identified. These, along with the first 7, were analyzed by Design Engineering and found acceptable without any rework required.

On the basis that the pipe support anchor plates surveyed represented the most sensitive installations involving use of anchor plates, and that all such plates surveyed were acceptable without rework. It was determined that there was no need for further investigation and that the anchor plate installations were acceptable.

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A

It has been alleged that the containment interior coatings did not have any records that the material was acceptable for the intended service.

1) <u>Valid:</u>	Y	N *
2) <u>Significant:</u>	Y	N *
3) <u>Generic:</u>	Y	N *

Response:

1) Evaluation of Validity

Conclusion: Invalid.

Basis:

Manufacturer records of coating materials are not required per FSAR, Section 6.1, Engineered Safety Feature Materials, Paragraph 6.1.2.1, Protective Coatings states:

"Partial compliance with ANSI Standards N101.2, N5.12, and N101.4. In this category, materials used were DBA tested and qualified but did not have retrievable manufacturer records. Shop and field application had not been subject to QA, as per the Purchase Order. Verbal statement of compliance with the manufacturer's recommendation have been obtained. Shop and field application procedure had been reviewed and approved. Subsequent repair and touch-up work comply with ANSI Standards N101.2, N5.12, and N101.4."

In the absence of specifics, the following is provided:

- a) Significant Construction Deficiency No. 56 identified coating deficiencies in the Waterford #3 containment building. At that time, questions were raised regarding the integrity of the coating system.
- b) As part of the corrective action outlined in NCR-W3-3648, it was decided to simulate a Field Design Basis Accident (DBA). The DBA test is the major qualification test described by ANSI N101.2, "Protective Coatings (Paints) for Light Water Nuclear Reactor Containment Facilities"
- c) Based on the test results, described in NCR-W3-3648 Attachment No. 7, it was concluded "that the coating system... is suitable to withstand the Waterford #3 SES design basis accident test."

2) Safety Significance

Conclusion: No impact on safety.

Basis: N/A

3) Generic Implications

Systems: N/A

Contractors: N/A