



**POLICY ISSUE**  
(Information)

*Elaine*  
*26*  
*"Waterford"*

June 18, 1984

SECY-84-239

For: The Commissioners  
From: William J. Dircks  
Executive Director for Operations

Subject: WATERFORD UNIT 3

Purpose: To provide the Commission with information relating to potentially significant safety issues at the Waterford Unit 3 facility as presented to the applicant.

Discussion: On April 2, 1984, the staff began a major review effort, largely conducted on site, designed to complete those issues necessary for the staff to reach its licensing decision on Waterford Unit 3. These issues covered a number of licensing and inspection areas including allegations of improper construction practices at the facility. The staff completed its field work on May 25, 1984, after six weeks on site, and has identified a number of items that could potentially affect the safe operation of the plant. The issues represent an extensive audit of information related to the plant. They were presented to the applicant for action before the staff publishes its SSER which will document its assessment of these and all of the other areas examined. This meeting was held on June 8, 1984.

The issues, summarized by topic, were presented at the meeting and are provided as Enclosure 1. A transcript of the meeting was made and is also enclosed (Enclosure 2) for your information. In addition, Enclosure 3 is a recent letter to LP&L formalizing the staff's questions for the utility.

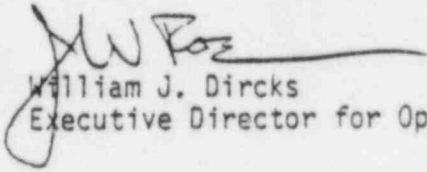
CONTACT:  
D. Eisenhut, NRR  
Ext. 27672

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The Commissioners

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The applicant has been requested to propose a program and schedule for a detailed and thorough assessment of the concerns, addressing both their root cause, the generic implications and the proposed applicant action to preclude such problems in the future. The applicant's proposed program will be evaluated by the staff before consideration of issuance of an operating license for Waterford Unit 3.

  
William J. Dircks  
Executive Director for Operations

Enclosures:

1. Summary of Meeting Issues
2. Transcript of Meeting
3. Letter to J. M. Cain from  
D. G. Eisenhut dated  
June 13, 1984

ENCLOSURE 1

SUMMARY OF MEETING ISSUES

INQUIRY TEAM

- 0 CONSTRUCTION MATERIAL TESTING (CMT) PERSONNEL
- 0 UNDERSIZED WELDS
- 0 SYSTEMS TRANSFERS WITHOUT ADEQUATE CLOSEOUT OF LP&L QA CONSTRUCTION  
WALKDOWN FINDINGS



CIVIL/STRUCTURAL AND PIPING/MECHANICAL TEAM

•O BACKFILL SOIL DENSITY

O CADWELDS

O WELDING INSTRUMENTATION CABINET SUPPORT

•O INSPECTION OF SHOP WELDS DURING HYDRO-TESTS

O STRUCTURAL INSPECTORS QUALIFICATIONS

O INSPECTION RECORDS ON MAIN STEAMLINE RESTRAINT FRAMING

O SPEED LETTERS AND ENGINEERING INFORMATION REQUEST (STRUCTURAL AREAS)

O WELDS ON CONTAINMENT SPRAY PIPING SUPPORTS

QA RECORDS REVIEW TEAM FINDINGS

- 0 UNQUALIFIED OR INCORRECTLY CERTIFIED QA/QC INSPECTION PERSONNEL
- 0 INADEQUATE OF MISSING QA DOCUMENTATION (RECORDS)
- 0 INADEQUATE REVIEW OF QA DOCUMENTATION
- 0 INADEQUATE DISPOSITION AND CLOSURE OF NONCONFORMANCE REPORTS
- 0 WELDER QUALIFICATION AND WELDING PROBLEMS
- 0 LOWER TIERED CORRECTIVE ACTION DOCUMENTS WERE NOT UPGRADED TO NONCONFORMANCE REPORTS
- 0 VENDOR DOCUMENTATION/CONDITIONAL RELEASE SYSTEM
- 0 QA PROGRAM BREAKDOWN BETWEEN EBASCO AND MERCURY COMPANY

EI&C

0 NON-SEISMIC EQUIPMENT (Category 2) INTERFACE WITH SAFETY EQUIPMENT  
(Category 1) DURING SAFE SHUTDOWN EARTHQUAKE.

0 EXPANSION TYPE ANCHORS IN CONCRETE FOR CATEGORY I STRUCTURES

ENCLOSURE 2

TRANSCRIPT OF MEETING

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1 ORIGINAL  
2 UNITED STATES OF AMERICA  
3 NUCLEAR REGULATORY COMMISSION  
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6 In the Matter of:

7 WATERFORD STEAM ELECTRIC STATION  
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19  
20 Location: Bethesda, Maryland Pages: 1 - 52  
21 Date: June 8, 1984  
22  
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1 UNITED STATES OF AMERICA  
2 NUCLEAR REGULATORY COMMISSION  
3 WATERFORD STEAM ELECTRIC STATION  
4  
5

6  
7 Nuclear Regulatory Commission  
8 7920 Norfolk Avenue  
9 Room P-118  
10 Bethesda, Maryland

11 June 8, 1984

12 The Commission met, pursuant to notice, at  
13 12:30 p.m.

14 SPEAKERS AND ATTENDEES:

15 MR. COLLINS  
16 MR. DENTON  
17 MR. CRUTCHFIELD  
18 MR. HARRISON  
19 MR. SHAO  
20 MR. THATCHER  
21 MR. PERANICH  
22 MR. EISENHUT  
23 MR. LEDDICK  
24 MS. GUARD  
25

PROCEEDINGS

1  
2 MR. DENTON: This is a meeting between  
3 the NRC staff and the management of Louisiana Harbor --  
4 to discuss the results of our special review team. I  
5 know we've had an unprecedented effort going on at  
6 your facility the past few months.

7 The people I have with me here at the table  
8 are -- Eisenhut, Director of the Division of Licensing,  
9 John Collins, the Regional Administrator, -- Jim  
10 Taylor, Deputy Director of the Division of Special  
11 Enforcement, -- Crutchfield on my left, who's --  
12 review team.

13 The heart of this meeting is being transcribed.  
14 So, I'd like to request that anyone that wants to  
15 comment, identify themselves so that the Reporter can  
16 know who you are.

17 I want to turn the meeting at this point  
18 over to Darryl Eisenhut, who will describe in more  
19 detail what we hope to accomplish.

20 MR. EISENHUT: As you all know, there are  
21 a number of issues --

22 (BAD TAPE - CHANGED TAPES)

23 MR. EISENHUT: Those relate to the classical  
24 FSAR issues. There's a few of those. There's a major  
25 effort underway reviewing base mat (Phonetic). There's

1 a number of areas before the Hearing Board, I guess  
2 a couple of areas, at least, principally the base mat  
3 there. And we've had a number of efforts going on  
4 at the plant, that is the review team that was going  
5 forth, both in the areas of, of what I'll call routine  
6 matters, routine inspections and what I'll call the  
7 special review team effort.

8 Today's focus is principally that special  
9 review team effort. Denny Crutchfield, who has been  
10 identified previously over on the left here, was a  
11 couple of months ago appointed the overall principal  
12 manager to orchestrate, guide and direct all agency  
13 matters relating to the NRC's functions on, on  
14 Waterford, that is the licensing matters, all hearing  
15 matters, investigation matters that from a technical  
16 standpoint, inspection matters and a special review  
17 team.

18 The special review team was an effort the  
19 staff undertook. It was a, basically, staff initiated  
20 effort that was layed out taking information that  
21 we had gleamed from various sources, information we'd  
22 received from the Office of the Investigations.

23 The staff went and sought out that infor-  
24 mation in somewhat of a new / novel approach. Today  
25 we're here to try to summarize the principal problems



1 that have been identified as a result of that effort.  
2 We do -- I say the potential significant issue because  
3 they're really in a form where there are now questions  
4 back to the utility. And you're going to have to --  
5 we'll put, put the questions to the utility. Some are  
6 potentially significant. But we felt we didn't want  
7 to delay any further. These things are falling out of  
8 our review. We will put these questions together in  
9 a formal letter to LP&L. We will be drafting and  
10 putting together a staff safety evaluation, summarizing  
11 a lot of the details we looked at, including these  
12 areas.

13 We'll be putting all that together. As  
14 Harold mentioned, we're, we're keeping a transcript of  
15 the meeting today to facilitate going forth with the  
16 details of that.

17 Today we're going to really concentrate  
18 on those areas where we have identified problems which  
19 require information back from the utility. And we're  
20 not trying to resolve them today. We're trying to  
21 just identify those.

22 The meeting today will follow sort of the  
23 standard policy. At the end of the meeting, I'll give  
24 anyone, interested parties, members of the public,  
25 an opportunity to make a short statement. It won't be

1 in the form of questions and answers or a dialogue.

2 It will be basically a short statement.

3 The meeting today has two parts. The first  
4 part is the review task team effort. This is the  
5 special review team, the questions. Again, I want to  
6 concentrate -- these are by no means the full scope  
7 we looked at, but these are the areas we want to  
8 emphasize today with questions.

9 The second part is the staff has some  
10 major questions we'd like to put to LP&L today on how  
11 LP&L has been going about handling safety concerns  
12 that have been raised within their own company. That  
13 will be the second part, though.

14 And at this time, I'd like to turn the  
15 meeting over to Mr. Crutchfield who has been managing  
16 and directing this overall activity, and I'm sure  
17 he'll introduce the rest of his staff and go forth  
18 from there.

19 MR. CRUTCHFIELD: Thank you. What we  
20 have done is identified four teams on-site that we  
21 had look into specific areas. These teams were led  
22 by Mark Peranich at the far end of the table, who is  
23 from I&E Headquarters. He was looking into the inquiry  
24 team which is a number of quality assurance, quality  
25 control areas specifically identified last summer.

1 Larry Shao from our Office of Research looked into the  
2 civil structural of piping and mechanical errors. Jeff  
3 Harrison from Region III, right here on my immediate  
4 left, is looking into the quality control, quality  
5 assurance aspects. Dale Thatcher, the third person  
6 down there, is from NRR Headquarters. He looked into  
7 the instrumentation and control areas.

8 What I'd like to each of them do now is  
9 to summarize for LP&L the findings of their team  
10 efforts to date. I'd like to start with Mark, if  
11 you would, please.

12 MR. PERANICH: All right. The, the inquiry  
13 team conducted inspections on the period. A majority  
14 of these findings will be addressed in the inspection  
15 report that will be released through Region IV offices.  
16 There are a number of areas, though, each week, the --  
17 licensing needs to follow-up and to insure proper  
18 disposition.

19 The first of those areas pertains to the  
20 qualifications of the concrete material -- personnel.  
21 This relates to a problem that was first identified  
22 as far as a generic problem by the LP&L QA task force  
23 verification effort. The matter was addressed  
24 through your system of NCR's and disposition.

25 Our particular area of concern relates to the

1 dispositioning of certain personnel that were  
2 qualified by written statements by their supervisors,  
3 managers or co-workers. We feel further follow-up  
4 on your part is necessary in that area.

5 The other matter pertains, generally, to  
6 the LP&L QA construction status and transfer findings.  
7 In particular, walk-down findings associated with 15  
8 systems that was being reviewed by your general  
9 contractor during the last week of our inspection for  
10 adequate disposition of the LP&L QA walk-down findings.

11 These involved undersized wells which was  
12 being handled separate from the general undersized well  
13 problem which the staff found acceptable. You were  
14 dispositioning those separately on another NCR.  
15 You require follow-up to disposition that and provide  
16 a supplement to your current SED 74.

17 The other area pertains to the remaining  
18 hardware findings and any other effect that their  
19 disposition may have on systems already transferred  
20 to operations.

21 Those are the three areas or two general  
22 areas in three categories that the inquiry team  
23 findings indicates you should take relatively  
24 immediate action on. The other findings of the inquiry  
25 team will be discussed in the inquiry team report.

1 MR. EISENHUT: Let's see, Mark, if I could.  
2 Let me make sure I put this in the proper context.  
3 These are questions that we believe LP&L needs to  
4 follow-up on, give us your answer to, either lay out  
5 a program, lay out your -- how you're going to  
6 address these questions, and this happens to be one  
7 of the simplest, smallest areas of the four we're  
8 addressing, but I want to make sure you understand  
9 that these are matters which we feel must be addressed  
10 to our satisfaction prior to a licensing decision on  
11 this plant.

12 MR. PERANICH: I understand.

13 MR. EISENHUT: So, I think as we go from  
14 area to area to area, I want to make sure that you  
15 have a good appreciation of exactly what the issue  
16 is as best we can do today, so that you'll know what  
17 you should, should embark upon.

18 You will be getting a detailed report,  
19 as I mentioned earlier. You will be getting a letter  
20 from me, but to facilitate timewise, we wanted to  
21 make sure, you know, if you have any questions, to  
22 explore this, to make sure you understand, now is  
23 the time to do it as we go from one area to another.

24 MR. LEDDICK: Let me, let me -- as I understand  
25 it, two areas that you're talking about. One was

1 -- concerning the qualification of some of the  
2 personnel that were involved in the inspection and  
3 testing back years before.

4 MR. PERANICH: Yes -- concrete material  
5 -- prior to 1982, at which time appropriate corrective  
6 action was taken by your subcontractor, Geo Testing.  
7 Prior to that time, there were a number of their  
8 personnel that were reviewed for qualifications. There  
9 was a lack of documentation pertaining to training  
10 or certification.

11 MR. LEDDICK: Okay. I'm familiar with this  
12 issue. I think you talked to our people at the time.

13 MR. PERANICH: Yes.

14 MR. LEDDICK: The second one is the one I'm  
15 not quite sure I understand. And I believe that  
16 you're dealing with the walk-down procedures that  
17 have been taken place prior to the -- of transfer?

18 MR. PERANICH: Yes. LP&L have performed  
19 walk -- well, status and transfer views. LP&L and  
20 Ebasco. The LP&L QA construction groups had identified  
21 certain hardware findings which were transmitted to  
22 Ebasco for disposition. There's a question on whether  
23 these hardware findings were adequately dispositioned  
24 at the time these systems were transferred back to  
25 LP&L construction and onto to LP&L QA operations and



1 accepted by the operation staff.

2 One area pertains to the undersized wells  
3 which is being handled, I believe on NCR separately  
4 from the basic one which evaluated the broad problem  
5 with undersized wells. And the other pertains to  
6 just the -- assuring the appropriate disposition of  
7 the hardware findings and whether, if any, they affected  
8 any of the testing that occurred.

9 MR. LEDDICK: The time frame that you're  
10 talking about when these various things took place,  
11 that's what, I guess, I need to --

12 MR. PERANICH: Okay. The time frame of  
13 when they took place were in the '83/'84 period when  
14 these systems were transferred.

15 MR. LEDDICK: All right.

16 MR. PERANICH: Would, would it help you  
17 if I gave you the system numbers?

18 MR. LEDDICK: Anything you've got would be  
19 helpful to pin this down.

20 MR. PERANICH: Uhm --

21 UNIDENTIFIED SPEAKER: Are you talking  
22 about mainly hangars?

23 MR. PERANICH: Nope. I -- this occurred  
24 during the last week of inspection. We did not get a  
25 time to complete our total review of the findings, but

1 there were hardware findings such as missing bolts  
2 from gear boxes, missing bolts from valves, high  
3 pointin instrumentation lines, that sort of thing.

4 MR. CRUTCHFIELD: Mike, we'll be giving  
5 you additional details in a letter that comes to you,  
6 identifies specifically what time, what systems are  
7 involved in situation --

8 UNIDENTIFIED SPEAKER: -- additional under-  
9 sized wells that you're talking about.

10 MR. LEDDICK: Well, anything I can get in  
11 a timely fashion which I need -- that's been my  
12 problem for a long time is getting information so I  
13 can deal with it.

14 MR. CRUTCHFIELD: I understand. Okay.  
15 The next area I think we'd like to have addressed  
16 is a civil structural in the piping mechanical area.  
17 And Larry Shao, who is the Deputy Director of Research  
18 Division over there will summarize those issues for  
19 us.

20 MR. SHAO: The civil structural -- mechanical  
21 piping team investigate about 90 allegations -- 90  
22 allegations. We feel most of the allegations can be  
23 closed, but we do have a few open items. And let me  
24 highlight these open items.

25 The team cannot locate certain soil density



1 testing records for certain layers of soil, and as I  
2 understand, LP&L is looking at this record right now.  
3 The safety issue in this area is the seismic response  
4 may be influenced by soil densities.

5 MR. EISENHUT: Let's see. Larry, let me  
6 ask you. As I understand it, the original allegation  
7 was that there were missing test records for soil  
8 relating to soil backfill. I think the staff conclusion  
9 was that, that allegation has been substantiated,  
10 at least the soil records today haven't been located.  
11 So, I think that leaves you with some -- with some  
12 options and that is either you can find the records.  
13 I mean that's obviously a -- on a number of the  
14 allegations we looked at where there were questions  
15 relating to records being missing, one of the options,  
16 obviously, is if you can find the records, that could  
17 go a long way to resolving the matter.

18 However, correct me, my technical staff --  
19 but this is a question about the soil backfill  
20 capability under an earthquake situation and the seismic  
21 response to that.

22 This is sort of a -- I interrupted because  
23 this is sort of a typical kind of question we have.  
24 We have not been able to conclude the adequacy of  
25 the soil's backfill question because there are missing

1 test records about the densities. Therefore, the  
2 question will be to you folks to come back to us with  
3 how are you going to address this problem.

4 UNIDENTIFIED SPEAKER: I understand.

5 MR. EISENHUT: And all I want to do today  
6 is lay the problem on, on your menu, so to speak. This  
7 is another matter. It's a kind of matter where you're  
8 going to have to address to our satisfaction prior to  
9 us going forth with the license. I said, obviously,  
10 you can -- there are different ways to address these  
11 problems. This one actually from a technical or  
12 technology standpoint is one of the easier ones. You  
13 can conduct a review of the soil packages and go out  
14 and find the documents. You can go back and conduct  
15 testings of the soil in the areas where the records  
16 are missing. You could conduct analyses to justify  
17 that the soil density is not a critical factor in  
18 the overall seismic response to the building or the  
19 site or the area where this is questioned. So, there's  
20 a number of different ways that you can approach these  
21 problems.

22 I think the key element is, though, on a  
23 number of these just like on Mr. Peranich's area and  
24 as we get into some of the more detailed ones, we can  
25 highlight the problem to you. We can identify the

1 issues. The balls in your court, so to speak. I  
2 wanted to make sure we all understood where we are  
3 on these kinds of issues.

4 MR. LEDDICK: May I make a generic response  
5 -- based on this particular -- I think this particular  
6 issue is one that we can deal with. I think that we  
7 can find backup records. The biggest problem we've  
8 been facing is related to the way that allegations  
9 are dealt with. It's been very, very difficult for  
10 us to know what the allegation was, and we're not  
11 terribly interested in who that, but we're terribly  
12 interested in knowing what is the allegation. And  
13 that has been a very difficult thing for us to deal  
14 with.

15 MR. DENTON: Right. I can appreciate that.  
16 It's been a difficult subject for us, too, but as I  
17 mentioned, in the first place, in this project we did  
18 it a little different.

19 Usually we have the situation where  
20 someone brings us a box of allegations or a box of  
21 affidavits and said, those are my allegations. This  
22 project we didn't. Generally, these allegations are  
23 what I'll call internally generated questions. We  
24 sought out people. We talked to people. We followed  
25 up every possible lead we had. We didn't want to say,

1 here's 500 questions for you. We looked at them and  
2 followed up on all of them, but we came down to the  
3 conclusion these are the areas where we believe there  
4 is a technical question that you need to answer.

5 And I appreciate it's taken some time.  
6 We've had a -- Denny didn't mention it, but I think  
7 we've had something on the order of anywhere from 40  
8 to 60 people working a large fraction of their time  
9 at the site and going through records and going through  
10 documents, doing field walk-downs, doing physical  
11 inspections of poor components, and it just took this  
12 long to get to the point where we are now down to  
13 these issues.

14 As I said, the review process is not  
15 completed. Mr. Peranich mentioned, for example, that  
16 he hadn't gotten to following up on some of his items.  
17 But these are the issues identified to date, and we  
18 wanted to bring this list to you as soon as we  
19 could. By no means -- I don't want to infer this is  
20 the whole list. There may well be other matters  
21 coming to you as we wrap up our review but, certainly,  
22 this is the principle matters that we're aware of,  
23 that we're trying to identify.

24 MR. LEDDICK: I understand and I --

25 MR. DENTON: The process just is a very

1 thorough process.

2 MR. LEDDICK: I don't want to be critical of  
3 the individuals, Bob, because I think they really gave,  
4 gave it their all. I'm really critical of the process,  
5 though, where so much time and effort is spent protecting  
6 the allegeders, many of who which I would have pinned  
7 a medal on if I could have identified them, for  
8 telling me in a timely fashion what problems I might  
9 have had, that it's been hard, hard to communicate.

10 MR. EISENHUT: That's why Item 2 is on the  
11 agenda because the basic contention that I have, which  
12 is my contention, is that much of this information  
13 was available to you for several months if you had  
14 followed up on it adequately, but we'll -- that's  
15 Item 2 in the agenda.

16 Larry, I interrupted you.

17 MR. SHAO: Okay. The second item, we had  
18 trouble in finding out the exact number of -- wells  
19 used, the number of -- wells tested and the number of  
20 -- wells rejected in each structure. I understand  
21 the LP&L is working on this subject.

22 MR. LEDDICK: Certainly, certainly, our, --  
23 we are going to be providing a great deal of data that  
24 you don't have, providing -- we're assembling  
25 information that's presently in our records in a -- in



1 a fashion that it can be used for an analysis.

2 UNIDENTIFIED SPEAKER: Good.

3 MR. SHAO: Okay. The data is -- the  
4 information will be used to evaluate the testing  
5 results. That's the purpose of this -- getting this  
6 information.

7 The third item is we cannot locate records  
8 to show the shop wells of TMB piping we inspected  
9 during hydrotests. The piping was manufactured by  
10 -- hydrotest, put it together and do the hydrotest, but  
11 there were records that showed that the field -- but  
12 there were no records to show the shop wells were  
13 inspected. According to NRC Code, you have to inspect  
14 all wells during hydrotest.

15 MR. EISENHUT: Either in the shop where  
16 they're fabricated or if you deferred in the shop,  
17 they would be inspected during the field hydrotest.

18 In this issue, it's my understanding that  
19 on based/information we've seen, is that when it was  
20 fabricated by Dravo (Phonetic) in the shop, the  
21 inspection of the wells during a hydrotest were  
22 deferred to the field hydrotest, but in the field  
23 hydrotest, the only records that exist are the records  
24 for the check of the wells that were field fabricated,  
25 not the shop fabricated wells.

1 MR. LEDDICK: I understand the question,  
2 but I don't believe the problem is quite in that  
3 fashion, but that's one we'll have to respond to.

4 MR. EISENHUT: That is our understanding  
5 of the problem as we see it. That is there's --

6 MR. SHAO: I suspect you have inspected, but  
7 so far, we haven't come upon the records.

8 MR. EISENHUT: And I think the ASME require-  
9 ment that you have inspected both the shop and the field  
10 wells during a hydrotest. And I'm not addressing --

11 MR. LEDDICK: No, I'm --

12 MR. EISENHUT: -- the, the significance of  
13 the test on the findings of the test or what it really  
14 means. There might be --

15 MR. SHAO: It's most likely -- it's most  
16 likely when an inspector inspects wells, he wouldn't  
17 inspect every well -- inspection of field wells. So  
18 far we didn't come upon the records.

19 MR. CRUTCHFIELD: It's a question of  
20 documentation.

21 MR. LEDDICK: But it's not -- I'm familiar  
22 enough with this one is that it's not missing documen-  
23 tation. It's interpretation of the documentation we  
24 probably have. That's the issue.

25 MR. CRUTCHFIELD: The documentation that

1 we have from Thompkins and Beckworth is a certifica-  
2 tion that the wells were, indeed, inspected. The  
3 procedure that they called out that they utilized was  
4 to inspect field wells only.

5 And, therefore, if we put the documenta-  
6 tion together, we don't see evidence that a hydrotest  
7 was visually inspected for the shadow wells, but  
8 that's the documentation these were missing.

9 MR. SHAO: Yeah. The procedure only called  
10 for inspection of field wells, were silent on the --

11 MR. LEDDICK: This has a potential for a lot  
12 of argument, but I think we will or I will try to  
13 answer it --

14 MR. CRUTCHFIELD: You understand the issue?

15 MR. LEDDICK: I do understand the issue.

16 MR. SHAO: The next item something similar  
17 to -- we have -- 6 out of the 13 structure inspector  
18 review for qualifications, do not have the proper  
19 certification.

20 MR. LEDDICK: Sorry, which --

21 MR. SHAO: These are the inspectors, the  
22 -- inspector for J.A. Jones --

23 MR. EISENHUT: This is a question about the  
24 size of the welding or --

25 MR. LEDDICK: No, this is -- J.A. Jones --



1 but these are the inspector for J.A. Jones and -- work  
2 on -- and J.A. Jones work on general soil and concrete.

3 The next one, we find -- we found out that  
4 incomplete inspection record related to both -- main  
5 stream line -- and I understand your staff is working  
6 on this method.

7 MR. LEDDICK: Would you please repeat the last

8 --

9 MR. SHAO: That incomplete inspection  
10 records relating to the -- main stream line restrain  
11 framing. The main stream line restrain framing.

12 The next one is we know that Ebasco is  
13 reviewing the speed letters related to J.A. Jones and also  
14 the engineering information requests for items that  
15 safety impact. We -- allowed them to complete a  
16 review for license.

17 The next item is the welding and the  
18 inspection records for wells on the containment spray  
19 piping supports are not complete. Again, I think your  
20 staff is working on the subject.

21 MR. LEDDICK: Would you repeat it, please?

22 MR. SHAO: It's a weld on the containment  
23 spray piping supports. The welding and the inspection  
24 records are not complete.

25 MR. LEDDICK: This is a documentation

1 problem?

2 UNIDENTIFIED SPEAKER: Well, it might be a  
3 safety problem.

4 MR. LEDDICK: I'm trying to understand what  
5 he said.

6 MR. SHAO: Yes, if we came upon the record, we  
7 can evaluate the --

8 MR. LEDDICK: Record, missing record, is  
9 that what -- missing record, all right.

10 MR. EISENHUT: Let me -- being passed out  
11 now is a typed up list of the billets of the items  
12 we're going through. We're not going through them  
13 in exactly the order on the pages here. So, it's a  
14 little bit difficult, but all the items are here. That  
15 happens to be the -- on Page 2, the last item on the  
16 typed up list. This is just a list which will help  
17 you for the ease of reference and keep track, keep track  
18 where we are.

19 MR. SHAO: These are all the items I have.

20 MR. CRUTCHFIELD: Let's see, there's a  
21 follow-up --

22 MR. SHAO: There's one more item. There's  
23 one more item. We could not find documentation of the  
24 welding on the instrumentation cabinets supports.

25 MR. EISENHUT: It's the third item on

1 Page 2 there. As I understand this, there was a  
2 question of the adequacy of the welding on the  
3 instrument cabinets, cabinets supports inside, inside  
4 the containment building.

5 It appears the documentation was just  
6 missing, which means there's no way to determine  
7 the welding was adequate or not adequate. Again, you  
8 could either locate the welding records. You could  
9 cut out the wells, rework the -- I mean there's a  
10 number of solutions to the problem.

11 MR. SHAO: Well, you can't -- to see whether  
12 the weld is okay.

13 MR. LEDDICK: Yeah, I'm familiar with this.

14 MR. EISENHUT: Okay, but I think the point  
15 is, again, all of these issues, and I think we should  
16 have touched on all the issues on Page 2, I think all  
17 of these issues you ought to understand. They are all  
18 in a mode of where we don't feel we have an adequate  
19 technical bases from a safety standpoint to go forth  
20 and following up on our previous dialogue. It really,  
21 at this point, has nothing to do with an alleged --  
22 these are questions that I feel I need to adequately  
23 address prior to going forth.

24 UNIDENTIFIED SPEAKER: Larry, did you cover  
25 all the --

1 MR. SHAO: I covered --

2 MR. LEDDICK: To the best of my knowledge,  
3 corrective action was flowing on all of these. I --  
4 however, I am not personally acquainted with some of  
5 these, but as far as I can determine, those that I am  
6 aware of, corrective action has been underway for a  
7 considerable period of time.

8 MR. EISENHUT: Well, then, gee, your  
9 previous comment that not knowing the issue and the  
10 allegation was a big impact, really must not have been  
11 a big impact up to this point, at least.

12 MR. LEDDICK: I said there was a generic  
13 statement. In fact, let me just clarify. During the  
14 time that the construction appraisal team was on site,  
15 that was very easy for us to communicate, and we did I  
16 think a marvelous job of communicating.

17 When the allegation team was on site, the  
18 rules that they were operating under made it very  
19 difficult for them to communicate to us and vice  
20 versa. I'm not sure how many surprises there were, but  
21 I think it's the rules that you're operating under  
22 that bothered me and I'm sure they bothered you, too.

23 MR. CRUTCHFIELD: Before we go onto to Jay  
24 Harrison, Mark has identified those systems, Mike,  
25 that you're interested in. He'll give you the system

1 numbers now.

2 MR. PERANICH: They're either systems or sub-  
3 systems. And the numbers are 18-3, 36-1, 36-3, 43(b),  
4 43(b)(9), 46(c), 46(e), 46(h), 55(a), 56(a), 59, 69(b),  
5 71(b)(2), 72(a) and 91(e).

6 Now, our, our interest in this area is to  
7 assure that the LP&L hardware walk-down findings were  
8 either adequately dispositioned or adequately  
9 identified on the Ebasco and LP&L status and transfer  
10 letters to the operation staff.

11 And if they were not, what effect, if any,  
12 which they may have on the activities that occurred  
13 within operating such as testing?

14 MR. CRUTCHFIELD: Okay. Anything else?  
15 Thank you, Mark. Jay Harrison from Region III was  
16 in charge of our quality assurance and quality control  
17 team, and he'll summarize the findings to date of his  
18 efforts at the site.

19 MR. HARRISON: In response to -- first of  
20 all, in response to Mr. Leddick's comment that we  
21 didn't pass all the information along as we normally  
22 would have done in an inspection, I'd like to say that  
23 the majority of our findings were passed onto the team  
24 escorts interface people in most cases.

25 We did plan to have a couple of meetings

1 with Mr. Leddick during this review which we did not  
2 have. I did meet with some LP&L and Ebasco management  
3 people and various supervisors about three weeks ago  
4 and did highlight my problem areas or the areas that  
5 my team found and did provide them a list of various  
6 nonconformance reports, welders that we had problems  
7 with as far as qualifications. So, all the specific  
8 information you need on people's names, welder's  
9 numbers and so forth was all given to your staff about  
10 three weeks ago.

11 In reviewing the, the areas that we looked  
12 into, we ended up with approximately eight findings as  
13 of today, eight major findings. And the first issue  
14 was on inspection personnel, in that we found that the  
15 credentials on quality assurance and quality control  
16 inspectors had not been verified by their employers  
17 to assure that the backgrounds and education met the  
18 requirements of the agency standards.

19 The specific findings were 37 of 100  
20 mercury inspectors fall in this category, that is,  
21 were not qualified to have been certified. And,  
22 additionally, 38 Thompkins Beckworth inspectors were  
23 reviewed, and 14 of those were also found not to have  
24 been qualified to have been certified.

25 Additionally, we could find no evidence



1 that background checks had been performed for any  
2 QA/QC personnel at the site. There's an IE circular  
3 80-22 that makes the -- a requirement that some type  
4 of action be taken by the utility to assure these  
5 checks are done.

6 LP&L did respond to this finding, but --

7 MR. LEDDICK: Would you give me the number,  
8 again, please?

9 MR. HARRISON: 80-22 circular. LP&L did  
10 respond to this circular, but it appears that the  
11 response only encompassed personnel working in the  
12 operation area, not the construction area. We feel  
13 this is significant because unqualified inspectors  
14 reviewing and accepting construction work activities  
15 could have accepted work that is unacceptable.

16 The second area or the second problem  
17 that we found a major problem is missing instrumenta-  
18 tion documentation. The Ebasco spec originally  
19 required that certain instrumentation be installed  
20 to a code, to be 31.1 in lieu of ASME. We have no  
21 problem with that since the design considerations are  
22 the same; however, it appears that no records were  
23 ever generated for these installations for local men  
24 and instruments.

25 The type of records that we could find no

1 evidence of would be things like base materials,  
2 welding material, inspections, etc. Some of the  
3 systems affected were safety injection, charging.  
4 I think that's the only, only examples I have are  
5 those two systems.

6 MR. LEDDICK: What systems, please?

7 MR. HARRISON: Safety injection and  
8 charging.

9 MR. LEDDICK: Nothing about local mounted  
10 instruments?

11 MR. HARRISON: Yes. It's where there's a  
12 double isolation valve and from the second isolation  
13 valve for the instrument, there appears that no  
14 records were ever generated or inspections were ever  
15 performed.

16 MR. LEDDICK: And there's a requirement  
17 for that?

18 MR. HARRISON: Yes.

19 MR. LEDDICK: In 31.1?

20 MR. HARRISON: No. In Appendix B. The  
21 commitment was to -- was to -- 50 Appendix B. And  
22 B 31.1 does not require -- now, LP&L discovered this  
23 problem, I think it was in 1982, and had the require-  
24 ment changed to ASME code requirement, to require  
25 records. So, I'm not sure -- I can't tell from looking



1 now many instruments are affected, but we do have some  
2 examples that -- I think there were five instruments  
3 that, specifically, are affected.

4 MR. LEDDICK: Are these safety related  
5 instruments?

6 MR. HARRISON: Yes. The third major  
7 problem was instrumentation expansion loop separation.  
8 On the reactor cooling system, instrumentation lines  
9 ran in -- were installed in a tube track for a supporting  
10 purpose and also a separation criteria purpose, where  
11 you had installed expansion loops in the system or  
12 loops for expansion and where the tubing exited and  
13 reentered the tube track, a separation criteria  
14 violation. This is on a reactor cooling system,  
15 though. People when we left were looking at the  
16 problem to see if it was generic or if it was an  
17 isolated case.

18 The fourth area is lower -- corrective  
19 action documents were not being upgraded to non-  
20 conformance reports. And that is that field change  
21 requests, design change notices, engineering deficiency  
22 notices which are a design type of document were  
23 being issued for after the fact nonconformances in, in  
24 lieu of a before the fact design change.

25 Also, that the discrepancy notices of

1       Thompkins Beckworth were not upgraded to Ebasco NCRs as  
2       required by the procedures. They don't get upgraded.  
3       They don't get the requirement for affordability  
4       review of 50.55(e).

5               I gave a -- about three weeks ago I gave  
6       a list of all these reference examples, problems to  
7       your staff. So, they know which ones that we used as  
8       examples.

9               MR. EISENHUT: And let's see, Jay, we're  
10      going to put in the letter we send you, we will  
11      identify the sample -- we looked -- sample size we  
12      looked at. We'll identify the sample number where  
13      we found, for example, field changes, changes that  
14      should have been upgraded to NCRs in our opinion, .  
15      and we'll give you a sample listing or example list  
16      of the -- of such cases. We won't necessarily give  
17      you all of the ones we've identified, but we'll  
18      certainly give you enough that you can adequately  
19      know what the problem is so you can go out and devise  
20      a program to address that kind of an element.

21              MR. HARRISON: Let me just give you one  
22      example so you'll understand where we're coming from.  
23      One of these changes identified a problem with a  
24      snubber and -- as non safety related, installed on a  
25      reactor cooling system. It's a standard snubber. And

1 the thing was issued and closed out by engineering.  
2 We could find no evidence that the problem of the  
3 procurement and installation of a non-safety --  
4 snubber on a reactor cooling system was ever properly  
5 identified, disposition and closed out. That's just  
6 one example.

7 A fifth major problem area is a problem  
8 with a vendor documentation, in that the conditional  
9 release system, as described in Ebasco program, was  
10 not complied with and that equipment furnished by  
11 combustion engineers or the NSSS System was released  
12 to the site conditionally; however, the conditional  
13 release at the site by the vendor was not picked up  
14 in your systems. During our review, we determined  
15 that one problem, for example, was the reactor  
16 vessel and internals, there was some missing documenta-  
17 tion of problems with tech manual not furnished,  
18 as-built drawings not furnished. This missing  
19 documentation, supposedly, was received before we  
20 left the site, however, we did not review it as far  
21 as I'm aware.

22 So, by not putting this in your system,  
23 there's no way that we can tell if all problems were  
24 identified and if the problems were properly corrected.

25 The sixth item is the disposition of non-

1 conformance reports. The staff found that a large  
2 percent -- and the numbers will be in the letter when  
3 you get it or in the report -- of nonconformance  
4 reports were not properly dispositioned in that they  
5 either did not address the nonconformance itself or  
6 they did not address the nonconformance corrective  
7 action properly or that the close-out of the non-  
8 conformance was not documented. If a resinspection  
9 was required, there were no records to substantiate  
10 the reinspection was ever performed.

11 MR. EISENHUT: And, and, Jay, I guess the  
12 point you made is we're giving -- these, these are  
13 some large numbers. In the letter that we send you,  
14 we've given you -- we're going to give you a list of  
15 examples. The list of examples is on the order of 25,  
16 and those are examples.

17 The same thing holds, I think back when  
18 we were talking of field change requests that should  
19 have been NCR's, etc. I don't want to leave the  
20 impression that these are a few isolated cases we  
21 found. I'm just looking at the field change requests.  
22 We reviewed 63 FCRs and 21 revisions, and out of those  
23 63, it appears 35 should have been NCRs, in our  
24 opinion.

25 Another one, just looking at engineering

1 discrepancy notices. We reviewed 66 -- 76. Of the  
2 76, it appeared that 51 should have been NCRs. So,  
3 I'm -- I want to leave the impression that this  
4 potentially is a -- is not an isolated case and these  
5 are some significant issues and significant problems  
6 and questions that are before you to, to address.  
7 These are pretty broad kind of numbers --

8 MR. LEDDICK: I understand. Some of this  
9 is debatable, too. I hope you understand that.

10 MR. EISENHUT: Oh, I appreciate that, and  
11 that's --

12 MR. LEDDICK: It's a matter of opinion, much  
13 of this.

14 MR. EISENHUT: That's why I --

15 MR. LEDDICK: Not all of it but much of  
16 it.

17 MR. HARRISON: We -- as you know, from  
18 about four or five man years in these efforts. So,  
19 you'll find elaborate substantiation I think behind  
20 all of these, and they do indicate, you know, a very  
21 serious problem for you.

22 MR. LEDDICK: We are taking it serious.

23 MR. HARRISON: I would hope so. I would  
24 also like to give you one example of an NCR that  
25 we feel was improperly dispositioned.

1           There was NCR written on a problem that  
2 welds were painted prior to the initial inspection  
3 being performed. A letter was written to justify  
4 the reinspection of these welds. The welds were  
5 inspected through paint. So, you've got some source  
6 of a primer on a well that never received divisional  
7 inspection. We, we feel that the painting of wells  
8 could mask all types of visual defects, cracks,  
9 porosity, etc. The letter said you only had to strip  
10 paint off one well out of X number of hundreds of wells.  
11 And we feel that that's totally unacceptable.

12           The next issue is that NCRs were missing.  
13 Some NCRs were written and were never included into  
14 the NCR system. We found -- I think there were around  
15 12 NCRs that were missing and had never been placed  
16 in the file or ever in a log book but they had been  
17 either been destroyed, thrown away or couldn't be  
18 located. We could not determine, but there was no  
19 evidence that these NCRs still existed. An NCR, once  
20 it's written, is a historical record. It's very  
21 difficult for us now to determine if this may have  
22 any impact on the integrity or the safety of the  
23 system.

24           The next area was -- we have a problem with  
25 welder qualifications and some welding problems aside



1 from the welder qualifications. This issue mainly  
2 evolves around the Mercury Company and lack of proper  
3 action to correct those problems. For example, we  
4 found welders were not qualified to correct welding  
5 procedure. The welder qualifications did not reflect  
6 that a welder was a qualified to a process, although  
7 he took tests. I don't know if it's a record keeping  
8 problem. The Mercury records were -- some of them were  
9 very difficult to go through and determine was  
10 everything there that was required, as were the welder  
11 qualification records.

12 Additionally, we found that the requirement  
13 for the rebaking of low hydrogen electrodes was not  
14 being complied with in accordance with ASME and  
15 and AWS codes. That is that the required temperature  
16 and time frames and the site required procedures  
17 was different than the codes.

18 We brought this up the first week of our  
19 inspection, and we asked that if you did something  
20 different, to provide justification. And we're down  
21 the road now over two months, and I've not seen anything  
22 yet from anybody at LP&L or Ebasco.

23 Additionally, we also discovered or  
24 observed doing this review that even though you had  
25 -- the rods were being rebaked at a lower temperature



1 for a longer period of time, in the Ebasco warehouse  
2 that the electrodes were being issued out of the rebake  
3 open while they supposedly they were in a rebake cycle.

4 And the final item that I have is a --  
5 we looked into the QA breakdown -- QA program breakdown  
6 between Ebasco and Mercury Company, and we found that  
7 even though the NRC had identified this problem and  
8 had taken enforcement action in the form a civil  
9 penalty in 1982, that the corrective action committed  
10 to by LP&L was not followed up on or was not completed.

11 We also found that the audit program for  
12 the site for Ebasco or any contractor that we looked at,  
13 which was many, had never been completely audited for  
14 the -- for the history of the project. In other  
15 words, you had an audit schedule, and that schedule  
16 was not complied with.

17 Also, for what audits were done, corrective  
18 action recommendations were made, but that corrective  
19 action was not carried out and/or was not effective in  
20 that the problems continued to occur, to occur.

21 That's all I have.

22 MR. EISENHUT: Let's see. Does, does  
23 LP&L have any questions or clarifications, you know,  
24 of Mr. Harrison before we -- I guess -- otherwise,  
25 before we go to the next area?

1 MR. CRUTCHFIELD: The next area is Dale  
2 Thatcher, who had the instrumentation and control  
3 effort down to the site, roughly a dozen issues that  
4 he looked into down there. Dale?

5 MR. THATCHER: Okay. Out of those dozen  
6 areas, we found two major areas of concern. The first  
7 area, we -- that there was inadequate documentation  
8 demonstrating that the nonseismic equipment will not  
9 physically degrade the safety equipment as a result  
10 of an earthquake. This aspect of the design is  
11 covered by requirements in Regulatory Guide 129.  
12 And although we found that this area was considered,  
13 we concluded there was -- there was inadequate  
14 document to demonstrate that it had been adequately  
15 addressed.

16 The second area involved incomplete  
17 inspection of drilled in expansion type anchors  
18 concrete. It's the category one structures. The  
19 inspection that was done did not include certain  
20 attributes or characteristics of these type of  
21 anchors. And although it appeared that they were  
22 installed in these attributes or characteristics,  
23 the inspection that was done was not confirmed that  
24 it was so inspected. That's basically all we have.

25 MR. EISENHUT: Any questions on, on this

1 area? I started to say, I think, those are the only,  
2 only problem areas that we've identified, but I  
3 shouldn't say the only.

4 Let me -- let me follow-up on Mr. Harrison's  
5 comments. While as we went through a number of those  
6 areas, if you're not really sensitive to the overall  
7 area of QA/QC, they sound like an Item 1 and Item 2  
8 and an Item 3. There's another item, I guess, and  
9 that is the overall collective significance of what  
10 all of these QC findings tell you. And I certainly  
11 hope that when you're addressing these, one of the  
12 things we certainly will ask you in the letter we  
13 send you but I think it's something that you ought  
14 to be a lot more sensitive to and that is, you need  
15 to sit back and reflect that what does this all tell  
16 you about what's been going on in the overall area  
17 of quality control at your plant for the last few  
18 years, even if a small fraction of each of these  
19 items is borne out and we all agree to the problems.  
20 That is, I think you really need to look at what  
21 the root cause of these problems has been in the  
22 past, whether you think it's addressed today for  
23 looking in the future, whether you need to look back  
24 at it now and say, well, what impact did it have on  
25 the plant, physically and its bottom line safety.

1 That is as you look at one item and find one item,  
2 to look at the generic concern or the collective  
3 significance of this.

4 I must say that as I look at it, I --  
5 if all of these matters are borne out to come out  
6 as -- and everything stands up, which we don't expect  
7 every single item to be accurately come out in the  
8 end as being a deficiency, but if they did, even a  
9 large number of them, it would certainly look like  
10 this is a process programmatically where you've got  
11 a major generic question that's got to be addressed.  
12 So, I think you need to address that in your -- when  
13 you continue to evaluate each of these items. Fair  
14 enough, Jay?

15 MR. HARRISON: Yes.

16 MR. EISENHUT: Denny, are you going to go  
17 on to the second part of the agenda?

18 MR. CRUTCHFIELD: Okay. The second area  
19 of the agenda, if you will, we'd like to talk about  
20 is the process whereby the -- there were allegations  
21 available within the LP&L system, that we are  
22 concerned about the way they were handled.

23 Back in January of this year, Mr. Leddick,  
24 you issued a memo to all QA personnel on site,  
25 indicating to them that there would be surveys or

1 interviews with them over the next several weeks and  
2 exit interviews with them as they left the site after  
3 their term of employment or the job was done.

4 We broke that down into two parts and  
5 looked into that. The survey aspect of it, you looked,  
6 you talked to those folks. --You tried to categorize  
7 what the issues were. You went back to Mr. Barkhurst,  
8 Mr. Garretts, as well as Ebasco, to get them to  
9 assess the issues, responded to those issues and  
10 responded to the individual employees, individual  
11 QA folks with your assessment of it.

12 The second aspect was the conduct of the  
13 exit interviews. Those interviews occurred with  
14 some of your QA folks, at least two, talking to the  
15 people as they left the site. You documented the  
16 concerns that those folks had. You indicated what  
17 they were. And, again, your process is beginning to  
18 start whereby you send them out to Mr. Barkhurst,  
19 Ebasco and whoever to get the answers to those.

20 Now, one of the -- some of the problems  
21 we have identified are the following: You have not  
22 followed up in many cases the items that were listed,  
23 either on the survey or the exit survey. An issue  
24 was raised and it was dropped. There may have been  
25 some questions that could have elaborated the specific

1 issue or given you additional information to go track  
2 down potential problems. Instead of that, the, the  
3 issue was raised. In some cases you said not enough  
4 information, drop the issue. In other cases, you  
5 could have asked questions that would have elaborated  
6 and got you the information you needed to go forth.

7 One area, someone said there is an  
8 instrument line problem. There was no indication of  
9 any follow-up to that, that you went forward and did  
10 anything, to ask further questions or that you went  
11 out and checked what specific lines were involved.

12 There's a question about a possible forgery  
13 of an NCR. There's no indication that there was any  
14 follow-up activity there, to see whether, indeed,  
15 there was a forgery or whether there was not a forgery.  
16 And overall, we're concerned that you're handling  
17 those responses has not been adequate.

18 MR. EISENHUT: I guess Denny put it another  
19 way. Let me -- let me turn it around a little bit.  
20 We went back and I don't believe -- I don't have all --  
21 any of the literature. So, I don't remember the  
22 specifics. But it was something in the January time  
23 frame of this year.

24 In January, you undertook to say that you're  
25 going to conduct -- you asked everyone on your staff



1 the quality arena, do you have any concerns . You  
2 gave them something on a five or six point questionnaire  
3 to fill out. They all filled them out. They started  
4 coming back to you sometime in January.

5 It now appears to us in some of the very  
6 same questions we're now addressing, sitting here on  
7 June 8th, are some of the same questions that you had  
8 on your -- back in January. Certainly in January/  
9 February time frame you started getting those  
10 questionnaires back in.

11 And I think the basic concern we have is,  
12 and it's basically a question at this point is, how,  
13 you know, what have you put in place on how you're  
14 going to go about handling such concerns? Are you  
15 really committed to follow-up when you get a QC  
16 inspector or a QC personnel tell you, I have questions.  
17 This thing was not adequately followed up on. This  
18 thing was a forged document. This thing was not  
19 properly handled. When it appears to us that it took  
20 some months for those issues to be handled and followed  
21 up on.

22 So, I think one thing we're really looking  
23 to you for is, is give us a better feeling, a better  
24 handle on why we should have confidence now that the  
25 issues that we're bringing up really are going to be



1 adequately dealt with and resolved.

2 Now, it also appears and this is more in  
3 the form of a question. It's certainly -- we're  
4 not to the point where we come down definitively  
5 on any of this. It appears that we went in and did an  
6 audit internally of your questions or your interview  
7 sheets, survey sheets, and it appears that the staff  
8 may well have been there a month or so ago and we  
9 were there before LP&L management actually reviewed  
10 those detailed surveys and looked at the concerns.  
11 It just didn't seem to us like a QA process vigorously  
12 pursuing those kinds of issues as they arise in the  
13 organization.

14 Now, let me make it in the form of a -- of  
15 a question, and I think it's the kind of question  
16 you're going to have to come back to us with an answer  
17 that shows that the process is a lot more healthy  
18 than the bleak picture I painted, and I grant that  
19 Denny and I painted it as bleak as we saw it to be,  
20 but that's the facts as we see them today. And I  
21 think it behoove to you to put together the best  
22 possible argument, to show that this was -- it was  
23 and is a healthy process pursuing these kinds of  
24 concerns. It certainly shouldn't take the, the NRC  
25 to bring up the issue before they're dealt with and,

1 hopefully, you'll be able to demonstrate that, but I  
2 think that is something that you're going to have to  
3 address.

4 Now, I had the other question, you brought  
5 it up earlier today again, that, gee, you really don't  
6 know what these concerns are. The process has been a  
7 laborious time consuming process. It's been a process  
8 you can't get your hands around the concerns. It's,  
9 it's something that's been drawn out, but at the  
10 same time, I contend that many of these you had since  
11 January/February time frame.

12 MR. DENTON: Let me answer that one,  
13 Darryl. I missed the part of the discussion about  
14 the dates. Perhaps you've been too preoccupied  
15 with dates to realize the problems that have been  
16 brought to you.

17 I think where we go from here will depend  
18 on your response to the issues that we raised. We  
19 intend to tell you what we found and expect you to  
20 come back with a basis for demonstrating you  
21 meet the Commission's requirements. We don't find  
22 that you meet them today in a number of areas.  
23 Perhaps you've got more information, more records,  
24 more calculations that we haven't seen but, clearly,  
25 we wanted today to move the burden back to you, and I

1 don't see a lot of point in arguing over the time  
2 limits of these matters. They've been kicking around  
3 for sometime and have not been faced up to. So,  
4 today we told you what we found, and the next move  
5 would be up to you to either show us that we're wrong  
6 or come up with a remedial action.

7 MR. LEDDICK: I don't intend to sound as  
8 though I'm arguing about issues because I'm not.  
9 First of all, most of these things that -- we are  
10 trying to find out, have been trying to find out what  
11 the NRC considers to be issues for a long time; however,  
12 that doesn't mean we're ignoring the issues that we  
13 find.

14 I think that we've been vigorously  
15 attacking issues as we found them for -- ever since  
16 I've been out there and probably long before that.

17 One more thing, though, that is mitigating  
18 about the whole thing is that you really do have to  
19 -- have to put in context what's been going on at  
20 that site in terms of, of meeting inspection require-  
21 ments.

22 We had -- one thing that no one pays much  
23 attention to now, but we did have a construction  
24 appraisal that took place over a six week period, and  
25 we had to get ready for that and deal with it and then

1 resolve a corrective action plan after that. And I'm  
2 not sure that, that people realize how many people  
3 are involved in that sort of thing.

4 That was a massive inspection and we, in  
5 fact, had to use -- I think we figured that for every  
6 inspector involved in the construction appraisal,  
7 we had at least three or four of our quality assurance  
8 and engineering people involved on a daily basis  
9 dealing with that and that's --

10 MR. DENTON: Well, of course, we only send  
11 -- teams to plants where we think there's some  
12 indication they may not be meeting requirements. So,  
13 I agree it takes burden on, on you to respond but,  
14 nevertheless, here we are today. We've passed along  
15 our findings in dozens of areas. We'll formalize  
16 them next week, as soon as the team members can get  
17 their reports written and look forward to your  
18 response in these areas.

19 So, I think, you know, you're pushing  
20 toward an early licensing date is out the window  
21 until you've come back with an adequate response  
22 in each of these areas.

23 MR. EISENHUT: That's the point I was  
24 making. It's each of the areas address the collective  
25 judgments. And, thirdly, was the last issue -- got to

1 demonstrate that you have a, a program that you and  
2 we both can have confidence in pursuing these issues  
3 and other issues as we go forth.

4 Those are basically the elements you must  
5 address.

6 UNIDENTIFIED SPEAKER: -- ask if there  
7 are any other parties?

8 MR. DENTON: Yeah, I was going to. I  
9 wanted to make sure Denny and -- got anymore comments,  
10 questions or --

11 MR. EISENHUT: Any other members of the  
12 special team and also I wanted to ask John if he had  
13 any other comments, questions --

14 MR. COLLINS: Well, I'd, I'd like to say  
15 something with regards to the issues we're now talking  
16 about, particularly in the area that Jay worked  
17 through and Mark Peranich.

18 A number of those issues had a good  
19 corrective action program was put in place as a  
20 result of the civil penalty. These things would have  
21 either surfaced and been corrected or at least  
22 there would have been programs to correct them as they  
23 were identified.

24 I really feel that because you did not  
25 take strong corrective action, it caused a lot of



1 these to surface by us now. You should have surfaced  
2 them yourself for your own QA organization.

3 MR. EISENHUT: Let's see. I was going to  
4 ask if there's any other interested groups or parties,  
5 local organizations from around the plant, is there  
6 anyone else would like to make any comments -- conclusion  
7 of the meeting?

8 Miss Guard?

9 MS. GUARD: (INAUDIBLE).

10 MR. EISENHUT: Any others? If not, Miss  
11 Guard why don't you just go ahead.

12 MS. GUARD: I'm Billy Guard with Government  
13 -- I think my comments would like to, to start by  
14 saying that you stopped short of saying that what  
15 you've discovered is a QA/QC breakdown on this plant,  
16 but I think that's what you've described. You have  
17 not talked about any corrective action program and  
18 passed that back LP&L at this time.

19 And I'm not sure if, if in between the  
20 lines of what you've said, that's what you told them.  
21 I have to agree with the comment that Mr. Leddick  
22 made a little while ago, that he has a lot of  
23 problems with the procedures that this particular  
24 -- and I would like to agree with that, but, obviously,  
25 for different reasons.

1 I understand that the industry and the  
2 agency are facing a lot of serious problems at plants  
3 nearing completion and that the agency has sincerely  
4 been attempting to find solutions or what to do about  
5 those situations and that this team effort grew out of  
6 that recognition. And I think that that's a step in  
7 the right direction.

8 Being very familiar with what happened at  
9 Zimmer and Midland, I understand our plants arriving  
10 at the end of the rope with no adequate assurance that they're  
11 built the way they're supposed to be built has caused  
12 a lot of problems for a lot of utility companies.

13 And, so, I'm not objecting to the actions  
14 that you took in that regard. What I am objecting to  
15 is the fact that this experimental team effort was  
16 not covered under any procedures that let Mr. Leddick  
17 know when he was going to find out what he knew, that  
18 let the public know when Mr. Leddick found out details  
19 of what they were finding at the plant and that  
20 essentially has no accountability. And those are  
21 complaints that I passed on both to you and to Mr.  
22 Crutchfield. This is an animal without a name. It's  
23 not an inspection team. It's not an evaluation effort.  
24 There's no guarantee that what you found is going to  
25 be evaluated in a sense that enforcement action would



1 be evaluated in.

2 And so I see, Mr. Eisenhut and Mr. Denton,  
3 that essentially what this team is something that  
4 does an inspection or an investigation or some  
5 variation on that theme and puts it all in your lap.  
6 And I don't think the procedures in your agency were  
7 designed to let things like this fall into the laps  
8 of two or three people. I think they were designed to  
9 make sure that all of us felt very comfortable with  
10 what was going on.

11 I have no complaints with the team's  
12 effort. As you said, this is not an effort that  
13 resulted from a basket, a bushel basket full of  
14 allegations being layed at your doorstep, and you're  
15 responding to those in the regular way that you had  
16 to deal with that.

17 I think that the feedback I have gotten  
18 from on the site from the work force, the management  
19 people from others, is that this has been an extremely  
20 comprehensive effort and I congratulate Mr. Crutchfield,  
21 you and your team, for doing that.

22 I don't have any complaints or don't have  
23 any argument with what you have done. My argument is  
24 with how it was done and how it's going to be handled.  
25 I hope this experiment works because the effort that's

1 about to happen at Comanche Peak and other troubled  
2 plants like Grand Gulf, possibly Sharon Harris (Phonetic)  
3 and others are and may need this kind of effort. It  
4 isn't going to work if it entirely boils down to the  
5 decision that you have to make the night before one  
6 of these meetings about what you're going to say.

7 MR. DENTON: Thank you for your comments.  
8 It was -- I don't want to appear argumentative. It  
9 is an effort to integrate all of the offices of the  
10 Commission. And that's why we have -- region -- and  
11 we had OI involved heavily so that we wouldn't appear  
12 unccordinated, so that we could get everybody involved  
13 in determining whether this plant needs some Commission's  
14 regulations or not, not just the people.

15 MS. GUARD: I hope it works.

16 UNIDENTIFIED SPEAKER: Any other --

17 MR. COLLINS: Letme say something with  
18 regards to enforcement. All of the findings of the --  
19 of the inquiry team, task force, those will all be  
20 viewed in terms of potential enforcement actions along  
21 with the -- findings, along with the fire protection,  
22 protection inspection and along with continuing  
23 routine inspections. They'll all be viewed for  
24 potential enforcement actions.

25 Yes. So, I think -- pretty closely establish

1 policy, the staff doing an internal review. Do the  
2 safety review first and then decide what to do from  
3 an enforcement stand.

4 MR. DENTON: And there will be a detailed  
5 safety evaluation written that describes the actions  
6 of the review time. Would you like to have the last  
7 word --

8 MR. LEDDICK: Yes. I appreciate the  
9 professional efforts of the people around the site.  
10 They were very thorough, and I think that they did the  
11 best job they could possibly do.

12 The -- assure I give you the absolute  
13 assurance. I am trying to deal with some of these  
14 questions. I don't want to leave the impression that  
15 we don't take you seriously because we certainly do.  
16 Probably take you absolutely seriously. We must get  
17 a license and we must do it right. We have to do it  
18 right.

19 One of my problems is I cannot deal with  
20 the past other than to correct anything that needs  
21 correcting. There are two aspects of the past. One  
22 is did the plant get built properly and, two, are the  
23 records proper that support it? Both of those have to  
24 be looked at.

25 The point that Mr. Eisenhut is making,

1     though, is extremely important, and I, I think he  
2     already knows some of the things that we've -- deal  
3     with and that is the future operating with an operating  
4     license has to be done primarily by appointed staff to  
5     -- supporting cast and we have gone out of our way to  
6     assemble an experienced staff. We've gone out of our  
7     way to put together a good training program. We've gone  
8     out of our way to be thorough about dealing with our  
9     tech specs, our FSAR, our as-built condition of the  
10    plant, the procedures that we have to use to operate the  
11    -- that really worked -- and I think that we've got  
12    a lot to be proud of.

13           There are -- the way we do business in dealing  
14    with the problems is fairly standard and they've been  
15    looked at by a lot of people so far. We intend to  
16    excel that, that whole thing.

17           And once again, I can only deal with the  
18    present and the future. I untend to do that  
19    vigorously but we do take you seriously. No question  
20    about that.

21           MR. CRUTCHFIELD: Well, I think that will  
22    be all. Thank you very much for coming.

23           (Whereupon, the meeting was adjourned).  
24  
25

CERTIFICATE OF PROCEEDINGS

This is to certify that the attached proceedings before  
the NRC COMMISSION

In the matter of:

Waterford Steam Electric Station

Date of Proceeding: June 8, 1984

Place of Proceeding: Bethesda, Maryland

were held as herein appears, and that this is the original  
transcript for the file of the Commission.

Tom Berry

Official Reporter - Typed

*Tom Berry 1984*

Official Reporter - Signature

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ENCLOSURE 3

WATERFORD 3 REVIEW

Letter to J. M. Cain from D. G. Eisenhut, dated June 13, 1984

~~8406210344~~ 18pp.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

June 13, 1984

Docket No. 50-382

Mr. J. M. Cain  
President & Chief Executive Officer  
Louisiana Power and Light Company  
317 Baronne Street  
New Orleans, Louisiana 70160

Dear Mr. Cain:

SUBJECT: WATERFORD 3 REVIEW

On April 2, 1984, the staff began an intensive review effort largely conducted onsite, designed to complete those issues necessary for the staff to reach its licensing decision on Waterford Unit 3. These issues covered a number of areas including allegations of improper construction practices at the facility. As we indicated to you, the staff would promptly notify you of issues that could potentially affect the safe operation of the plant.

We have recently identified the items listed in the enclosure that have potential safety implications for which we require additional information. It should be noted that they are being provided to you before the NRC staff publication of its SSER which will document its assessment of the significance of these and all of the other issues examined. The issues in the enclosure represent an extensive staff audit of information related to the plant.

As a result, you are requested to propose a program and schedule for a detailed and thorough assessment of the concerns. This program plan and implementation schedule will be evaluated by the staff before consideration of issuance of an operating license for Waterford 3. This program plan should include and address the cause of each of these potential problems identified; the generic implications and the root cause of the concern on



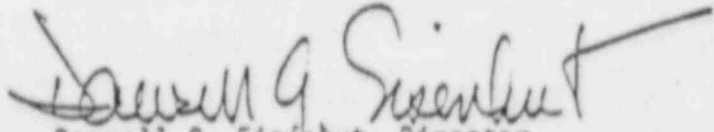
Mr. J. M. Cain

- 2 -

June 13, 1984

other safety-related systems, programs or areas; and the collective significance of these deficiencies. Your program plan should include the proposed LP&L action to assure that such problems will be precluded from occurring in the future.

Sincerely,

A handwritten signature in dark ink, appearing to read "Darrell G. Eisenhower", with a long horizontal stroke extending to the right.

Darrell G. Eisenhower, Director  
Division of Licensing  
Office of Nuclear Reactor Regulation

Enclosure:  
As stated

cc w/enclosure:  
See next page

Mr. J. M. Cain

- 3 -

June 13, 1984

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POTENTIAL SAFETY IMPLICATIONS1. Inspection Personnel Issues

As a part of the NRC staff's review, the credentials of quality assurance and quality control inspectors were examined. Included in this effort were the verification of previous job experience and qualifications and certification of personnel as inspectors.

The following items were found:

- (1) NRC reviewed inspector certifications for 37 of the 100 Mercury QC inspectors, including certifications for all Level III personnel. Twelve inspector certifications were found questionable due to insufficient education or experience.
- (2) The certification records of 38 Tompkins-Beckwith (T-B) QC inspectors were selected at random and reviewed. Fourteen inspector certifications were found questionable due to insufficient education or experience.
- (3) A 30% sample by the staff of inspector certifications of the Mercury QC work force revealed that no verification of past employment was documented. A sample by the staff of inspector certifications of the Tompkins-Beckwith QC work force produced similar results.

The safety significance of these findings is that unqualified inspectors may have inspected safety-related systems, thereby rendering verification of the quality of these systems indeterminate. LP&L shall: (1) verify the professional credentials of 100% of the site QA/QC personnel, including supervisors and managers, (2) reinspect the work performed by inspectors found unqualified, and (3) verify the proper certification of the remaining site QA/QC personnel to ANSI N45.2.6-1973.

2. Missing N1 Instrument Line Documentation

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

Although ANSI B31.1 does not relate to records retention, 10 CFR 50 Appendix B does require special process controls, traceability, installation and inspection records. Therefore, for locally mounted N1 instruments, even though they were installed prior to April 7, 1982,

these records could not be located. Examples of the instruments lines with no supporting installation and inspection records for zones classified as ANSI B31.1 are LT-SI-0305B; LT-SI-0305D; PS-CH-0224X; PS-CH-0224Y and PS-CH-0224Z.

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

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

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

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

### 3. Instrumentation Expansion Loop Separation

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

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

### 4. Lower Tier Corrective Actions Are Not Being Upgraded to NCRs

The staff reviewed the Corrective Action system to verify if lower tier corrective action documents were being properly upgraded to NCRs as required by 10 CFR Part 50, Appendix B Criteria XV and XVI. Specifically the staff looked at a number of Field Change Requests (FCRs), Design Change Notices (DCNs), and Engineering Deficiency Notices (EDNs) selected

from printouts of safety-related equipment and systems document issuance logs. The selected documents were reviewed for content and basis for issuance (i.e., before the fact design change or after the fact nonconformance). Finally a walkdown was performed to verify proper identification and change control completion. In addition Tompkins-Beckwith (T-B) Discrepancy Notices (DNs) were reviewed.

As a result of its review the staff found that the following issues.

- a. Field Change Requests - Sixty-three FCRs and 21 revisions to FCRs were evaluated. It appears as though 35 should have been NCRs and another 4 reflected conditions that may have warranted an NCR. The list below provides examples of FCRs that should have been NCRs.

F-MP-1818	F-AS-1631
F-AS-3698	F-E-3089
F-AS-3648	F-MP-2138
F-AS-2338	F-MP-2151
F-MP-1434	F-E-2288

- b. Design Change Notices - Fourteen DCNs and 5 revisions to DCNs were reviewed. It appears as though 4 of those should have been upgraded to NCRs. Listed below are examples of these.

DCN-703 and Revision 1  
DCN-1C-478  
DCN-ME-30  
DCN-E-790

It appears as though the problems identified in DCN-703 are related to FCR-MP-2138 and may have been reportable under 10 CFR Parts 21 or 50.55(e).

- c. Engineering Discrepancy Notice (EDNs) - Seventy-six EDNs were reviewed for proper identification and control. Of those 76, it appears as though 51 of those should have been NCRs. Examples of these are listed below.

EDN-EC-1476  
EDN-E-1548  
EDN-EC-1502  
EDN-EC-1479

In addition during the review, another 35 were "voided" with no action taken. The voiding action was performed by a clerk. Examples of voided EDNs are as follows:

EDN-EC-0630  
EDN-EC-1175  
EDN-EC-1176  
EDN-EC-1140

- d. Tompkins-Beckwith - The staff reviewed a sample of the handling of information requests and Discrepancy Notices by Ebasco. As a result of that review it appeared that a number of these items should have been upgraded to NCRs. Examples of these are listed below.

W-6519	W-5755
W-6183	W-742
W-6322	W-5917
W-3656*	W-381
W-1876	W-5824*
W-4112	W-5047
W-5692	W-5416
W-6243	W-5916
W-6349	W-2105
W-728	W-4968*
W-4648*	W-4969*

The asterisked (\*) items all related to incorrect heat numbers being entered incorrectly or clerical errors being made on rod slips.

In summary, the staff found that the QA program requirements for nonconformance identification, control and proper action do not appear to have been complied with.

LP&L shall review all FCRs, DCNs EDNs, and T-8 DNs to assure that proper corrective action was taken, including an adequate review by QA. This action shall include the steps required by 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, and for Construction Deficiency Reporting, 50.55(e). Also included in this review shall be the examination of improper voiding of all other design changes or discrepancies notices that affected safety-related systems or that were misclassified as non-safety related.

5. Vendor Documentation - Conditional Releases

As a part of the staff review of the QA program, the staff evaluated the Ebasco vendor QA program. In assessing this program, the staff specifically looked at the receipt inspection program and the conditional release system.

As a result of its evaluation, the staff found certain deficiencies with the handling of conditional certification of equipment (C of E) for Combustion Engineering supplied equipment. For example, one conditional C of E for the reactor vessel and internals was issued because as-built drawings, material certifications, and the fabrication plans had not been forwarded when the equipment was delivered to LP&L in 1976. The missing documents were sent to Ebasco sometime in 1978, according to the Ebasco quality records supervisor, but were apparently lost prior to being placed in the Ebasco document control system. The conditional



certification of equipment was found when a check of all files was made in April or May 1984. The missing documents have been requested from CE, and a deficiency report was issued and placed on a master deficiency list. This problem has existed since July 20, 1976.

The safety significance of this is that problems with the vendor QA records could affect installed safety related equipment. LP&L shall examine their records and determine if all conditional certifications of equipment have been identified, reviewed, and promptly resolved.

6. Dispositioning of Nonconformance and Discrepancy Reports

The staff conducted a review of Ebasco nonconformance reports (NCRs) randomly selected from the Ebasco QA vault and the NCR tracking system. The selected NCRs were reviewed for content, compliance with procedures, accuracy, completeness of the disposition and final closure. Of the NCRs reviewed it is the staff's judgement that approximately one third contained questionable dispositions. Other NCRs were found still open.

The implied safety significance is that improperly dispositioned NCRs or lack of NCR closure could place the quality of installation in question.

For example, Ebasco NCR W3-5564 identifies that welds were painted before the final weld inspection was performed. The NCR was closed out with a letter stating that the final inspection will be performed to inspect only for undersizing and lack of weld material where installation drawing calls for weld material. No paint was to be removed therefore the inspector could not inspect for welding defects.

The NCRs reviewed by the staff dealt with a wide variety of issues. The following is a list of example Ebasco NCRs that the staff feels contain questionable dispositions or exceeded closure time requirements.

Ebasco W3 NCRs

NCR-7139	NCR-7177	NCR-3912	NCR-7182	NCR-5563
NCR-7181	NCR-7184	NCR-6159	NCR-6723	NCR-3919
NCR-7547	NCR-6221	NCR-1650	NCR-6511	NCR-6623
NCR-4219	NCR-5586	NCR-7432	NCR-7180	NCR-4137
NCR-6165	NCR-4088	NCR-7099	NCR-6786	NCR-6597
NCR-7533	NCR-7179	NCR-7140	NCR-5565	

The staff also found similar type problems related to Mercury NCRs in that the dispositions were questionable; supporting documentation could not be located; rework appears to have not been accomplished; NCRs were not processed; a sufficient basis was not provided; and closure basis was inadequate.



The following NCRs fall into these categories:

Mercury NCRs

180	420	528	568	625
255	429	540	591	656
268	438	554	594	658
363	487	560	595	
380	491	565	614	

Additionally during this review the staff found problems with Ebasco discrepancy reports (DRs) in that it appears some DRs should have been elevated to NCRs; closure references were incorrect or inappropriate; closure action was improper; documentation was inaccurate; closure was via a DR, should have been an NCR; disposition failed to address the discrepancy; and the disposition of "use-as-is" had insufficient basis.

The following DRs fall into these categories:

Ebasco DRs Related to Turnover Packages

Q2-CS-1C-27	BD-1C-1143
Q2/3-FW/1C-851	Q1-RC-LWS-RC-2
Q2-SI-1C-89	LW3-RC-29
QMC-APO-P47E	Q2-LW3-SI-10F/E
CH-1C-342	CC-1C-6

The staff concludes that some Ebasco and Mercury NCRs and Ebasco DRs were questionably dispositioned and that LP&L shall (1) Propose a program that assures that all NCRs and DRs are appropriately upgraded and adequately dispositioned and corrective action completed, and (2) correct any problem detected.

7. Backfill Soil Densities

The staff found that records are missing for the in-place density test of backfill in Area 5 (first 5' starting at Elevation -41.25'). These documents are important because the seismic response of the plant is a function of the soil densities.

LP&L shall (1) Conduct a review of all soil packages for completeness and technical adequacy and locate all records and provide closure on technical questions, or (2) conduct a review of all soil packages for completeness and technical adequacy and where soil volumes cannot be verified by records as meeting criteria, perform and document actual soil conditions by utilizing penetration tests or other methods, or (3) Justify by analysis that the soil volumes with missing records, or technical problems as defined after the records review, are not critical in the structural capability of the plant under seismic loads.

8. Visual Examination of Shop Welds During Hydrostatic Testing

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

9. Welder Certification

The staff reviewed the records for the installation of the supports for certain of the instrumentation cabinets in the Reactor Containment Building (RCB). The review included an examination of procurement records for the support material, weld rod control documents, welder certification records, and QC inspection records.

Based on the staff review it appears that documentation is missing on the support welds and it is not clear that the welders were certified for all of the weld positions used. Thus the quality of the supports for the instrument cabinets are indeterminant.

LP&L shall attempt to locate the missing documents and determine if the welders were appropriately certified. If the documentation cannot be located, appropriate action must be taken to assure the quality of the cabinet supports.

10. Inspector Qualifications (J. A. Jones and Fegles)

The NRC staff reviewed the qualification and certifications of QC inspectors in the civil/structural area. The review included the qualifications of four Ebasco inspectors, five J. A. Jones inspectors and eight Fegles inspectors. The inspector qualifications were compared against the requirements of ANSI N45.2.6 and the contractor's procedures.

The staff found that four of the five J. A. Jones inspectors and two of the eight Fegles inspectors failed to meet the applicable certification requirements related to relevant experience. Since these inspectors were involved in the inspection of safety-related activities, the fact that they may not have been qualified to perform such inspections, renders the quality of the inspected construction activities as indeterminant.

LP&L shall review all inspector qualifications and certifications for J. A. Jones and Fegles against the project requirements and provide the information in such a form that each requirement is clearly shown to have been met by each inspector. If an inspector is found to not meet the qualification requirements, the licensee shall then review the records to determine the inspections made by the unqualified individuals and provide a statement on the impact of the deficiencies noted on the safety of the project.

11. Cadwelding

The staff reviewed the Cadweld activities related to the deficiencies identified in NCR-W3-6234. The staff is concerned that the applicant has provided only limited data (in other than the raw form) to the NRC on the statistics of the Cadweld testing program conducted during construction. The data provided stated that for the base mat 3,673 splices were made with 81 tests run, showing an average strength of 95,397 psi with a range of 60,750 - 107,051 psi. For the entire project the applicant has stated that 14,293 splices were made of which 591 were tested with 6 of those failing to meet tensile requirements. It is noted that the above NCR has been reopened as a result of the CAT inspection and all issues have not been resolved.

LP&L shall provide the Cadweld data for the project in such a form that it can be readily compared to the acceptance criteria used for the Waterford 3 project. This will require breaking down the Cadweld data by building or structural element such as the base mat, NPIS walls that are not part of RAB or FHB, containment interior structures etc. Additionally, the data should be broken down by test program type (production or sister), bar size, bar position and cadwelder. Data shall be provided in each category on total splices made, visual rejects, production tests and failures, and sister tests and failures. Data shall also be provided on welder qualification and requalification including dates.

Based on discussions with LP&L representatives the NRC staff has been informed that efforts in this area are underway, but this information is needed for staff review.

12. Main Steamline Framing Restraints

As part of the NRC staff's review, the installation and inspection of the main steamline framing restraints above the steam generators was examined to determine if the as-built drawings reflect the actual installation. The NRC staff found no problems with as-built conditions, but found that several bolted connections had not been inspected (or documented) for the framing. The failure to perform (or document) the inspections render the quality of these framing restraints as indeterminant.

Based on discussions with LP&L representatives the staff was informed that the subject inspections are in progress. LP&L shall complete the inspections of the restraints and make the documentation of such inspections available to the staff.

13. Missing NCRs

During the NRC's review of Ebasco's NCR Processing System the card index file of NCRs was examined and the staff noted that there are missing reports in the consecutively numbered NCRs. Specifically W3-27, 814, 859, 981, 1053, 1102, 1109, 1228, 1349, and 1438 are missing from your card index file. Others were also noted to be missing from the Ebasco QA vault.

LP&L shall (1) obtain the missing NCRs, explain why these NCRs were not maintained in the filing system, review them for proper voiding, and (2) assure that when an issue is raised to an NCR, it is then properly filed for tracking and closure.

14. J. A. Jones Speed Letters and EIRs

During the Ebasco QA review of J. A. Jones speed letters and engineering information requests, several items that could affect plant safety were noted. Based on its sample of these actions, the staff does not expect that any of these items will significantly affect plant safety. Nevertheless, the applicant should complete the actions identified in these reviews and issues raised shall be resolved promptly.

15. Welding of "D" Level Material Inside Containment

The staff reviewed the welding of "D" level material for containment attachments. The containment spray system structural component welds were chosen for specific detailed review. The welds on the containment spray piping supports were checked for weld rod traceability and welder identification and certification. The applicant was unable to produce the documentation sought for the staff review.

The applicant shall (1) locate the documentation and verify the adequacy of the information, or (2) perform a material analysis and NDE work, or (3) rework the welds. The staff shall be promptly informed of the applicant's approach and the documentation shall be made available for staff review.

16. Surveys and Exit Interviews of QA Personnel

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

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

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

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

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



17. QC Verification of Expansion Anchor Characteristics

A review of Mercury Construction Procedure SP-666, Revision 8, "Drilled-In Expansion Type Anchors in Concrete for Category I Structures," revealed that it does not require QC verification of many characteristics necessary to ensure proper installation of concrete expansion anchors. These characteristics include:

- Spacing between adjacent anchors
- Spacing between an anchor and the edge of a concrete surface
- Spacing between an anchor and an embedded plate
- Minimum anchor embedment depth
- Grouting of unused/abandoned holes in the concrete
- Mounting plate size
- Size of holes in mounting plates and hole distance from plate edges

Although most of the above characteristics are addressed in Section 6.1 "installation," they are not included within Section 6.2 "Inspection," as items requiring QC verification. In addition, QC Inspection Report Form 277A, Rev. May 1982, "Equipment Installation (Anchors)," does not list these attributes as inspection points.

Therefore, Procedure SP-666 should be revised to include all necessary inspection attributes, and a reinspection program should be initiated. This program should be of sufficient size and scope to indicate whether these concrete anchors, in general, are able to perform their intended function. Detailed results should be made available to the NRC staff for review.

18. Documentation of Walkdowns of Non-Safety Related Equipment

A review of the design and evaluation of the non-safety instrument air piping, tubing, and their supports indicated that the general recommendations of Regulatory Guide 1.29, "Seismic Design Classification" were considered. This non-safety equipment is installed in areas with safety related equipment, such as the containment and auxiliary building areas. From the information provided relative to this system, it is apparent that the potential for system failure was considered in the design.

Also a number of procedures and controls were implemented to further assure that these non-safety related components would not affect safety related equipment. However, the followup documentation of the final walkdowns did not list the reviewed equipment in detail and therefore it could not be concluded that the instrument air piping and tubing (and their supports) had been adequately addressed regarding potential physical damage to safety-related equipment.



Therefore, documentation should be provided that clearly shows what equipment was reviewed during the walkdowns and on what bases it was concluded that the installation was acceptable.

19. Water in Basement Instrumentation Conduit

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

20. Construction Materials Testing (CMT) Personnel Qualification Records

The Inquiry Team effort included a review of the disposition of the generic problem identified during the LP&L Task Force verification relative to GEO Construction Testing (GEO) documentation for personnel qualifications in the area of CMT.

The utility should conduct a review of supporting documentation for GEO corrective action stated in Attachment 6 of NCR W3-F7-116 (Ebasco W3-6487). This review should focus on the identification of CMT personnel placed in GEO Categories 1, 2 or 3 who were apparently qualified solely on written statements by other individuals attesting to the individuals training and qualifications. For such individuals, the applicant should pursue any new information or evaluations which could provide further assurance in support of the actual past work experience and training referenced by the written statements.

21. LP&L QA Construction System Status and Transfer Reviews

The Inquiry Team assessment of the Ebasco QA disposition of LP&L QA Construction documentation and walk-through hardware findings for a sample of the sixty-seven systems transferred to LP&L operations resulted in NRC questions on the adequacy of Ebasco and LP&L QA Construction disposition of those findings. As a result of the NRC questions LP&L and Ebasco QA initiated a review to ensure that all LP&L QA Construction findings were adequately dispositioned. Ebasco QA had identified 15 systems or subsystems (Nos. 18-3, 36-1, 36-3, 43B, 43B9, 46C, 46E, 46H, 55A, 59, 69B, 71B2, 72A, and 91E) where the LP&L findings may not have been properly dispositioned during the transfer of these systems to LP&L operations.

Based on the above, LP&L is requested to complete the review of all significant LP&L status and transfer review findings, such as undersized welds and other hardware walk-through and documentation findings. This review should ensure that these findings have been properly closed out or identified to LP&L operations for their closeout. For any LP&L open findings not properly identified on the status or transfer letters to LP&L operations, LP&L should determine whether this condition adversely affected the testing conducted for those systems.

22. Welder Qualifications (Mercury) and Filler Material Control (Site Wide)

The staff reviewed inprocess weld records for the installation of instrumentation systems by Mercury Company. Systems reviewed included Reactor Coolant, Safety Injection, Component Cooling Water, Main Steam, Main Feed, and Charging Water. The staff selected welders from these records and reviewed their qualifications to the welding process used during the time frame of actual welding.

Based on the staff's review it appears that some Mercury welders were not qualified. Problems included: welders not qualified to the correct welding procedure; welders qualified for a specific process, even though they were not tested for that process; and actual dates on qualification records appeared questionable, the welder may have welded prior to being tested. The staff concludes that there are questions relative to the Mercury welder qualification status.

Also during this review the staff evaluated the controls being used to control filler material. The staff found that the requirements for "rebaking" of low hydrogen electrodes did not meet the requirement of the ASME and AWS Codes. The Codes require low hydrogen electrodes to be rebaked at temperatures of 450° to 800°F for two hours. The site practice for all site contractors was to rebake at 200°F for eight hours. Justification for this Code deviation has not been provided by LP&L .

LP&L shall (1) Attempt to locate the missing documentation and determine if the welders were properly qualified, or (2) If the documentation to support proper qualification cannot be located, LP&L shall propose a program to assure the quality of all welds performed by questionably qualified welders.

LP&L shall also provide engineering justification for the allowance of "rebake" temperatures and holding times that differ from the requirements of the ASME and AWS Codes.

23. QA Program Breakdown Between Ebasco and Mercury

The staff review included evaluation of the implementation of the QA programs of LP&L, Ebasco, and Mercury. The staff performed a followup on the previous 1982 NRC review that resulted in NRC enforcement action and a civil penalty. The most recent staff review indicated that LP&L, Ebasco, and Mercury did not followup on the corrective action commitments made to the NRC.

Additionally LP&L, Ebasco, and Mercury failed to audit the entire QA program as required (LP&L only performed one-third of their scheduled audits for a five year period). The audits that were conducted identified some problems, however the required corrective actions were not completed. Management audits, performed by outside consultants, identified problems and concerns that LP&L also failed to take corrective action on.

The results of the NRC task force effort indicate that an overall breakdown of the QA program occurred. Most problems identified by the NRC had been previously identified by the QA programs of LP&L, Ebasco, and Mercury. But the failure to determine root cause and the lack of corrective action allowed the problem to persist.

LP&L shall provide an assessment of the overall QA program and determine the cause of the breakdown, together with corrective action to prevent recurrence. This overall assessment is necessary to provide assurance that the QA program can function adequately when the plant proceeds into operations.