

21192

DOCKETED

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

'00 FEB -1 P5:08

ADJ. CLERK

Title: CAROLINA POWER & LIGHT COMPANY
(Shearon Harris Nuclear
Power Plant)
HEARING

Docket No.: 50-400-LA

ASLBP No.: 98-762-02-LA

Location: Rockville, Maryland

Date: Friday, January 21, 2000

Pages: 190 - 442

ANN RILEY & ASSOCIATES, LTD.
1025 Connecticut Avenue, N.W., Suite 1014
Washington, D.C. 20036
(202) 842-0034

TR01

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

-----X

In the Matter of: :

CAROLINA POWER & LIGHT COMPANY : Docket No. 50-400-LA

(Shearon Harris Nuclear : ASLBP No. 98-762-02-LA

Power Plant) :

-----X

Third Floor Hearing Room, Room 3B-45
White Flint Building 2
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, Maryland
Friday, January 21, 2000

The above-entitled matter came on for hearing,
pursuant to notice, at 9:30 a.m.

BEFORE:

THE HONORABLE G. PAUL BOLLWERK, Administrative
Judge

THE HONORABLE DR. PETER S. LAM, Administrative
Judge

THE HONORABLE FREDERICK J. SHON, Administrative
Judge

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1025 Connecticut Avenue, NW, Suite 1014
Washington, D.C. 20036
(202) 842-0034

1 APPEARANCES:

2 On Behalf of the Licensee:

3 JOHN O'NEILL, Esquire

4 BILL HOLLAWAY, Esquire

5 ShawPittman

6 2300 N Street N.W.

7 Washington, D.C. 20037-1128

8
9 STEVEN CARR, Esquire

10 Carolina Power & Light

11 P.O. Box 1551 (CBP 13A2)

12 Raleigh, North Carolina 27602

13
14 On Behalf of the Nuclear Regulatory Commission:

15 SUSAN UTTAL, Esquire

16 ROBERT WEISMAN, Esquire

17 Office of General Counsel

18 11555 Rockville Pike

19 OWFN 15E-8

20 U.S. Nuclear Regulatory Commission

21 Washington, DC 20555

22
23
24
25

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1025 Connecticut Avenue, NW, Suite 1014
Washington, D.C. 20036
(202) 842-0034

1 APPEARANCES: [Continued]

2 On Behalf of the Intervenor, the Board of Commissioners of
3 Orange County, North Carolina:

4 DIANE CURRAN, Esquire

5 Harmon, Curran, Spielberg & Eisenberg

6 1726 M Street, N.W.

7 Suite 600

8 Washington, D.C. 20036

9

10 DR. GORDON THOMPSON, Ph.D.

11 Executive Director

12 Institute for Resource and Security Studies

13 27 Ellsworth Avenue

14 Cambridge, Massachusetts 02139

15

16 DAVID LOCHBAUM

17 Nuclear Safety Engineer

18 Union of Concerned Scientists

19 1616 P Street, N.W.

20 Suite 310

21 Washington, D.C. 20036

22

23

24

25

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1025 Connecticut Avenue, NW, Suite 1014
Washington, D.C. 20036
(202) 842-0034

P R O C E E D I N G S

[9:30 a.m.]

1
2
3 JUDGE BOLLWERK: Good morning. Pursuant to Title
4 10 of the Code of Federal Regulations, Part 2, subpart (k),
5 we are here today to conduct an oral argument in the
6 Carolina Power & Light Company proceeding. Although the
7 subpart (k) has been available for nearly 15 years, they
8 have not been utilized with any frequency. Accordingly, for
9 the record, I would like to take a few moments to review how
10 we came to this procedural point.

11 This proceeding began when in response to a
12 January 13th, 1999 notice of opportunity for a hearing which
13 was published in Volume 64 of the Federal Register at pages
14 2237 and 2241 Intervenor Board of Commissioners of Orange
15 County, North Carolina requested a hearing to challenge the
16 December 23rd, 1998, application of Carolina Power & Light
17 Company to amend the operating license for its Shearon
18 Harris facility to add spent fuel rack modules to Spent Fuel
19 Pools C and D and place those pools in service.

20 Thereafter, in early April and May 1999 the Board
21 of Commissioners submitted eight proposed issues for hearing
22 and CP&L and the NRC Staff filed responses to those issue
23 statements as well as the Board of Commissioners' arguments
24 about why it had legal standing to be a party to this
25 proceeding.

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1025 Connecticut Avenue, NW, Suite 1014
Washington, D.C. 20036
(202) 842-0034

1 On May 13th, 1999 we conducted a day long
2 prehearing conference in Chapel Hill, North Carolina, during
3 which these participants had an additional opportunity to
4 make oral presentations regarding the issues of Petitioner
5 Orange County's standing to intervene and the admissibility
6 of its eight proffered contentions.

7 Based on the parties' filings in this oral
8 argument on July 12th, 1999, in a ruling reported in Volume
9 50 of the Nuclear Regulatory Commission Issuances beginning
10 at page 25, we concluded that Orange County had standing to
11 intervene and had provided two admissible contentions or
12 issues so as to warrant its admission as a party to this
13 proceeding.

14 These two issues, designated as Technical
15 Contentions 2 and 3, or TC-2 and TC-3 for short, concern,
16 respectively, the adequacy of the measures proposed by CP&L
17 to prevent criticality in Spent Fuel Pools C and D and as to
18 the efficiency of CP&L's quality assurance measures relative
19 to the piping and equipment for those pools.

20 Generally following such a ruling on standing and
21 contentions, the parties would proceed under the agency's
22 rules in 10 CFR, Part 2(g), which provide for a formal
23 trial-type hearing.

24 In this instance, however, because the CP&L
25 amendment request involves the expansion of its spent fuel

1 pool capacity any of the parties could invoke a separate set
2 of procedural rules found in subpart (k) of Part 2 of the
3 Commission's regulations. These rules provide for a 90-day
4 period for discovery among the parties followed by
5 simultaneous written submissions by the parties and an oral
6 argument before the Board addressing the central issue of
7 whether relative to the admitted contentions there are any
8 disputed issues of fact or issues of law that require an
9 evidentiary hearing.

10 Considering the parties' filings in the oral
11 argument, the Board is then to issue a decision that
12 designates those matters that require an evidentiary hearing
13 and dispose of any issues that do not require such a
14 hearing.

15 As was its right, CP&L invoked the use of the
16 subpart (k) procedures. As a consequence, pursuant to a
17 Board-established schedule the parties engaged in discovery
18 regarding the admitted contentions and provided the Board
19 with their written submissions on January 4th, 2000, which
20 include affidavits of supporting witnesses and documentary
21 and videotape materials.

22 Counsel for the parties now are before the Board
23 to present oral argument regarding the substantive validity
24 of the admitted contentions and whether any further
25 evidentiary proceedings are required.

1 Before we begin the hearing the parties' oral
2 arguments on these matters, I would like to introduce the
3 Board members.

4 To my right is Frederick J. Shon. Judge Shon, a
5 nuclear engineer, is a full-time member of the Atomic Safety
6 and Licensing Board panel.

7 To my left is Dr. Peter Lam. Judge Lam is a
8 nuclear engineer and a full-time member of the panel.

9 My name is Paul Bollwerk. I am an attorney and
10 the Chairman of this Licensing Board.

11 At this point I would like to have counsel for the
12 parties identify themselves for the record. Why don't we
13 start with counsel for Orange County and then move to
14 counsel for the Applicant, Carolina Power & Light Company,
15 and finally to the NRC Staff counsel. Ms. Curran.

16 MS. CURRAN: Good morning. I am Diane Curran.

17 JUDGE BOLLWERK: Those are very directional
18 mikes, so make sure they are in front of you.

19 MS. CURRAN: I will. I am Diane Curran, here
20 representing Orange County, North Carolina. With me today,
21 on my left is David Lochbaum, of the Union of Concerned
22 Scientists, and on my right Dr. Gordon Thompson of the
23 Institute for Resource and Security Studies --

24 JUDGE BOLLWERK: All right, thank you.

25 MS. CURRAN: -- who are the county's experts in

1 this proceeding.

2 JUDGE BOLLWERK: All right.

3 MR. O'NEILL: Good morning. My name is John
4 O'Neill. I am a partner with ShawPittman, representing
5 Carolina Power & Light Company, the Applicant in this
6 proceeding.

7 To my immediate left is my colleague, Bill
8 Hollaway, and also at counsel table is Assistant General
9 Counsel, Carolina Power & Light, Mr. Steven Carr.

10 JUDGE BOLLWERK: All right. For the Staff?

11 MS. UTTAL: Good morning. I am Susan Uttal. I
12 am representing the NRC Staff. I am with Bob -- Robert
13 Weisman, who is also representing the NRC Staff.

14 JUDGE BOLLWERK: All right, thank you.

15 As to the order of presentation by the
16 participants in this oral argument, normally the moving
17 party, that is the party requesting some type of action from
18 the Board, would make the first presentation. In the
19 context of this subpart (k) oral argument, however, exactly
20 which party is the moving is not readily apparent since, as
21 directed by Section 2.111(3)(a) all the parties filed
22 simultaneously.

23 In an unpublished January 13th, 2000 memorandum
24 and order, while noting that Carolina Power & Light as the
25 licence amendment applicant, has the burden of proof with

1 respect to any merits resolution of the substantive matters
2 at issue in this proceeding, the Board also observed that
3 section 2.1115(b) makes it clear that a central question for
4 our consideration and resolution in the context of this oral
5 argument is whether there are any disputed factual issues
6 concerning the county's contentions that are appropriate for
7 examination in an evidentiary hearing.

8 In this regard, we noted that the Commission had
9 declared in the Statement of Considerations accompanying the
10 adoption of subpart (k), which can be found in Volume 50 of
11 the Federal Register at page 41,667 that the burden is,
12 quote, "on the party requesting adjudication."

13 From the parties' January 4th, 2000 written
14 summaries it is apparent that the County is requesting that
15 an evidentiary hearing be conducted on one or more aspects
16 of the admitted contentions, a suggestion opposed by both
17 CP&L and the NRC Staff. As a consequence, the Board
18 concluded that in the context of this subpart (k) proceeding
19 Orange County should make the initial presentation, followed
20 by responsive arguments from CP&L and the NRC Staff and then
21 a reply presentation by the County.

22 At this point do any of the counsel have any
23 comments on this order of presentation?

24 [No response.]

25 JUDGE BOLLWERK: All right. Two other points

1 deserve mention before we move into the parties' oral ,
2 argument on the pending contentions.

3 In our January 13th issuance, we noted that CP&L
4 and the Staff had utilized several documents that
5 purportedly contain 10 CFR Section 2.790 proprietary
6 information and request that a joint report from the parties
7 advising us whether that information would be the subject of
8 discussion so as to require the Board to close all or
9 portions of this proceeding.

10 On January 19th, counsel for CP&L provided the
11 Board with a letter stating that none of the parties
12 intended to refer to any proprietary information during the
13 course of the argument. The Board currently does not
14 contemplate referring to such information either.
15 Accordingly, we see no basis for closing any portion of this
16 argument, although we request that the parties, particularly
17 CP&L and the Staff, remain alert and advise the Board
18 immediately if they perceive any problems concerning the
19 disclosure of proprietary information.

20 Finally, we noted in our January 13th memorandum
21 an order that the Staff had challenged the status of Orange
22 County witnesses Dr. Gordon Thompson and Dr. David
23 Lochbaum as experts and asked to have their written
24 declarations in support of the County's position on its
25 contentions stricken from the decisional record.

1 We indicated that Orange County counsel will have
2 an opportunity to respond to the Staff request during this
3 argument.

4 Also, we asked that the parties should be prepared
5 to identify and discuss any other particular challenges that
6 may have to the evidentiary materials filed by other
7 parties.

8 At this point I would like to poll the parties to
9 see if in fact they wish to interpose objections to
10 evidentiary materials provided by either of the other
11 parties, and following the order of presentation established
12 by the Board, I will go first to counsel for Orange County.
13 Ms. Curran.

14 MS. CURRAN: No, the County doesn't intend to do
15 that.

16 JUDGE BOLLWERK: All right. CP&L, any other
17 objections that you have in terms of evidentiary materials?

18 MR. O'NEILL: Not on evidentiary materials, Mr.
19 Chairman, but we did raise in a letter to you, and we'll
20 press at the appropriate time the fact that the submittal
21 raises new contentions or attempts to dramatically expand
22 the bases of admitted contentions which we believe are
23 inappropriate and we shouldn't be discussing them today.

24 At some point either preliminarily or if you would
25 prefer during each of the contentions we will want to raise

1 that issue, including the new contention on whether or not a
2 construction permit is required, which is the first time we
3 heard about that, so we would think that at some point it
4 would be appropriate to address those issues, as you
5 indicated in your order indicating the order of preference.

6 JUDGE BOLLWERK: All right, but in terms of
7 evidentiary materials you have no further -- nothing you
8 wish to object to?

9 MR. O'NEILL: Not with respect to evidentiary
10 materials.

11 JUDGE BOLLWERK: Okay, and of course the NRC
12 Staff had raised the question about the affidavits of Mr.
13 Lochbaum and Dr. Thompson. Any other materials you wish to
14 object to?

15 MS. UTTAL: The only materials that the Staff
16 would object to are materials that support the arguments
17 that we consider to be an expansion of the contentions and
18 we can address that in that context and documents that we
19 have objected to in discovery.

20 JUDGE BOLLWERK: All right, so again your
21 objections are basically the same as Mr. O'Neill's --

22 MS. UTTAL: Yes.

23 JUDGE BOLLWERK: -- in terms of the scope of the
24 contentions. All right.

25 Let's begin then with the presentation by counsel

1 for Orange County regarding Contention TC-2, inadequate
2 criticality prevention, and I should advise the parties that
3 it is the Board's current intention not to take a luncheon
4 break until we have finished the discussion regarding this
5 contention, so if that is a goal, we will look at it that
6 way, and I will leave it open to you whether you wish to
7 just talk about your witnesses at this point or you want to
8 leave that for some other point in the discussion.

9 It is sort of your option, however you feel the
10 best way to proceed is.

11 MS. UTTAL: Okay.

12 MR. O'NEILL: Mr. Chairman, excuse me. I would
13 like to make a proposal with respect to Contention 2, just
14 for ease of how we might address it. There are two clear
15 bases, one which is noted as a legal argument, the second
16 one, which is Basis 2, which is more of a technical
17 argument.

18 If the parties would find it convenient we would
19 think that it might be easier to engage the issues if we
20 take them seriatim and deal first with the legal argument
21 perhaps or -- I don't care which order -- and then with the
22 second one, and I have a particular reason to do that is
23 that I have -- my colleague Mr. Hollaway will address Basis
24 2 and I will address Basis 1, since they are segregable.

25 JUDGE BOLLWERK: All right.

1 MR. O'NEILL: So if that would not be
2 inconvenient, I would prefer to segregate that contention.

3 JUDGE BOLLWERK: All right. Ms. Curran, do you
4 have any problems with that?

5 MS. CURRAN: I would prefer to address the whole
6 contention at once because some of the issues are somewhat
7 overlapping and I think it would be more efficient that way
8 for me.

9 JUDGE BOLLWERK: All right. Does the Staff have
10 any preference?

11 MR. WEISMAN: This is Bob Weisman. I will be
12 addressing Contention 2. The Staff doesn't have any
13 objection to separating the -- addressing each basis one at
14 a time.

15 JUDGE BOLLWERK: All right. Let's do it this
16 was. If Ms. Curran has prepared her argument that way,
17 let's stay with her argument.

18 I will obviously allow either of you at the
19 appropriate time, if you want to divide your argument then
20 between the two of you, I take it no one else has an
21 objection to that in terms of allowing both counsel to speak
22 on the same contention. Why don't we go ahead and proceed
23 that way. Ms. Curran?

24 MS. CURRAN: I just wanted to tell you that what
25 I am anticipating in terms of time management is taking

1 about a half an hour and assuming that each of the other
2 sides will take a half an hour and then a half an hour for
3 reply and if things don't seem to be going that way maybe we
4 can do a time check.

5 JUDGE BOLLWERK: All right.

6 I have a preliminary matter that I would like to
7 raise before I launch into this, and this may not be the
8 appropriate time, but I don't want to lose it.

9 That is the difficulty that I have had with the
10 filing of exhibits electronically and also the receipt of
11 exhibits electronically.

12 JUDGE BOLLWERK: Okay.

13 MS. CURRAN: Is this a good time to mention that?

14 JUDGE BOLLWERK: About as good as any time.

15 MS. CURRAN: As you probably know, I have not yet
16 been able to file the County's exhibits electronically. I
17 am going to try to do that in the next week or two. What I
18 am planning to do is see what exhibits that we are relying
19 on have already been filed electronically by other parties
20 and making sure that we get you electronic copies of
21 anything that is left over, but I wanted to let you know
22 that the process of filing such massive exhibits by e-mail
23 turned out to be a total disaster.

24 JUDGE BOLLWERK: All right.

25 MS. CURRAN: To the point that not only did my

1 computer freeze and I had to call an independent consultant
2 to come in and reroute my e-mail to his computer so he could
3 get it, but he told me that in spite of the fact that his
4 computer system is quite sophisticated, the process of
5 receiving CP&L's exhibits almost crashed his computer, and I
6 wound up making an arrangement with Bill Hollaway that he
7 would give me a zip disk with all this information, so I
8 would just like to suggest that in the future for this
9 quantity of material that process be avoided.

10 JUDGE BOLLWERK: All right. Well, I think there
11 is always the option when you are filing electronic
12 materials if it appears we are going to have this sort of
13 problem to go ahead and do exactly what you have done, which
14 is file a zip disk, put it on CD Rom if that is available to
15 the parties, a lot of diskettes, although that could get
16 somewhat cumbersome as well, but yes, that is something I
17 certainly don't have a problem with in terms if you can work
18 it out and make sure that the filings are getting to the
19 other person promptly.

20 MS. CURRAN: It is also for informational
21 purposes, too. I don't think any of us realized that that
22 was going to happen so just so that you know it is a
23 problem.

24 JUDGE BOLLWERK: Right. I appreciate your raising
25 this because this is going to become a matter as come to

1 move along we are looking toward going actually to
2 electronic filing in the agency in toto at some point, so
3 all these types of matters, I do appreciate your bringing
4 that to our attention.

5 MS. UTTAL: Your Honor, if I might, the Staff was
6 unable to file its exhibits electronically. Even though we
7 are just in the next building our computers could not carry
8 those large disks, and as you know, we made one CD Rom,
9 which took awhile to make, and we have not attempted to make
10 any more CD Roms of the exhibits. They are so massive that
11 if the Board believes that it is necessary to make the CD
12 Rom though I will see what I can do, but the files that are
13 formed in our scanning machine are huge, so I don't know --

14 JUDGE BOLLWERK: One of the things I have
15 actually done is arrange with the agency, although this is a
16 pre -- quote/unquote "ADAMS" proceeding, to actually put
17 all of these documents at some point into the ADAMS system
18 whether it then be accessible to the public and to the
19 parties through the ADAMS server, website, so the answer to
20 that may be you ought to look toward that because that is
21 one of the intentions and in fact the agency has given us in
22 theory the money to do that at some point.

23 Any other questions about electronic filing? --
24 and again I appreciate your bringing that to our attention.

25 MS. CURRAN: Okay.

1 JUDGE BOLLWERK: The floor is yours.

2 MS. CURRAN: All right. I will begin by
3 addressing the NRC Staff's challenge to Dr. Thompson's
4 qualifications. As you know, Dr. Thompson is Orange
5 County's expert witness on the issue of criticality
6 prevention.

7 According to the Staff, Dr. Thompson's testimony,
8 his contribution to Orange County's summary, should be
9 stricken from the record because he has no training or
10 previous experience in criticality analysis. According to
11 the Staff, Dr. Thompson does not possess as much
12 qualifications as the Board and therefore cannot assist the
13 Board. In fact, the Staff asserts that Dr. Thompson is no
14 more qualified than any other layperson.

15 Orange County submits that these claims are
16 baseless. Dr. Thompson is a highly qualified scientist
17 through his experience in nuclear engineering and physics,
18 through his training as a scientist, and through his
19 application of scientific principles to the facts of this
20 case.

21 His expert qualifications are well established by
22 his curriculum vitae, which is attached as an exhibit to the
23 "No Significant Hazards" comments that Orange County filed
24 as an attachment to its contentions in I believe April of
25 this year.

1 His qualifications are also supported by his,
2 deposition testimony, which is attached in its entirety as
3 Exhibit 11 to CP&L's summary.

4 As Dr. Thompson's resume shows, he has a Ph.D.
5 in Applied Mathematics and his graduate work involved
6 complex analyses of thermonuclear plasma physics. He has 25
7 years of experience in evaluating nuclear safety and waste
8 disposal issues including analyses of standards for
9 radioactive waste disposal and numerous analyses of accident
10 risks from nuclear power plants.

11 In his deposition testimony Dr. Thompson referred
12 to his basic expertise in scientific principles and
13 analytical principles, and his general experience with
14 engineering, and also with nuclear power plant engineering.
15 As Dr. Thompson states in his deposition testimony, he has
16 become familiar with details of numerous nuclear facilities
17 including nuclear power plants and other types of nuclear
18 facilities in several countries. This is at page 30 of his
19 deposition testimony.

20 As a scientist Dr. Thompson has always taken
21 pains to acquire the necessary familiarity with the details
22 of the design and operation of a facility in order to
23 support his claims, and he has the experience and background
24 to allow him to do this.

25 Dr. Thompson's deposition testimony also showed

1 that he is familiar with the basic scientific principles
2 involving criticality analysis. He demonstrated an
3 understanding of reactivity, neutron multiplication factors,
4 and the physical factors that influence reactivity levels.
5 He is obviously very familiar with principles of nuclear
6 physics, which is an essential element of nuclear
7 criticality analysis.

8 It is notable that neither the Staff nor CP&L
9 challenged the accuracy of Dr. Thompson's discussion of
10 these scientific principles involving reactivity at pages 62
11 to 66 of this deposition transcript.

12 Dr. Thompson's qualifications are also
13 demonstrated by the quality and detail of the technical
14 information and discussion contained in Orange County's
15 summary, which has been filed before this Board.

16 Moreover, although Dr. Thompson is generally
17 familiar with the principles of critical analysis through
18 his understanding of nuclear engineering and physics, it is
19 not necessary for him to be familiar with the precise
20 methodology used by CP&L's consultant, Holtec, for
21 performing criticality calculations in this case. In this
22 proceeding Dr. Thompson is not challenging the methodology.
23 However, if the assumptions that go into the analysis are
24 incorrect then the analysis will not have any value. It is
25 these assumptions that Dr. Thompson is challenging.

1 We would also point out that Dr. Thompson was
2 previously qualified as an expert regarding the non-accident
3 related aspects of a spent fuel pool expansion proposal in
4 Vermont Yankee Nuclear Power Corporation, regarding the
5 Vermont Yankee Nuclear Power Station LBP 89-18, 29 NRC 539
6 at page 542 -- the year is 1989.

7 The Staff has cited a number of cases in which
8 various proposed witnesses were excluded as not having
9 adequate qualifications. Neither of the cases involved
10 experts with the kind of background and experience in
11 nuclear power plant safety and engineering that Dr.
12 Thompson has. One, for instance, was an art therapist.

13 The question remains as to what weight should be
14 accorded to Dr. Thompson's technical contribution to Orange
15 County's summary. We submit that Dr. Thompson's testimony
16 should be given considerable weight. He is highly qualified
17 in the field of nuclear engineering and physics and also in
18 the application of sound scientific principles to nuclear
19 safety analysis.

20 He has immersed himself in the field of
21 criticality analysis and the details of CP&L's license
22 amendment application and provided a thorough analysis of
23 the history of criticality prevention, the principles behind
24 the regulatory requirements, the industry's experience with
25 criticality control and the CP&L proposal.

1 In fact, Dr. Thompson has proved himself to be
2 much more disciplined than either CP&L or the NRC Staff in
3 applying the regulatory principles of general design
4 criterion 62 and the double contingency principle to CP&L.
5 He has argued a systematic approach to identifying the
6 conditions that can lead to criticality, relating these
7 conditions to GDC-62 and the record of criticality relevant
8 incidents at U.S. nuclear power plants.

9 He has also examined the manner in which a
10 criticality accident would unfold. This analysis appears to
11 be the first truly disciplined study of the subject in many
12 years and sheds significant light on issues that have been
13 simply ignored by the Staff and the industry in the past.
14 Therefore, his testimony should be given substantial weight.

15 JUDGE BOLLWERK: All right. Any questions by the
16 judges panel for Ms. Curran?

17 JUDGE SHON: No.

18 JUDGE BOLLWERK: All right. Does the staff wish
19 to make any kind of response or reply?

20 MS. UTTAL: Well, Your Honor, I think that the
21 staff's brief thorough discussed our position in this area.
22 Dr. Thompson, in his deposition, said that he would --
23 excuse me -- he would apply general scientific knowledge in
24 evaluating this proposal.

25 It is the staff's position that general scientific

1 knowledge of mathematics and perhaps physics is not
2 sufficient to make one an expert in a complicated field such
3 as criticality analysis. It may be that Dr. Thompson as
4 learned a lot during the period that he is on this case, but
5 I don't know that qualifies him as an expert. And if the
6 Board chooses not to exclude his testimony, and strike his
7 testimony, then it is the staff's belief that his testimony
8 should be given little or no weight in the decision on this
9 matter.

10 JUDGE BOLLWERK: All right.

11 JUDGE LAM: I have got a question for Ms. Uttal.
12 Ms. Curran has said that Dr. Thompson is not challenging
13 the detail specific of the criticality calculations, instead
14 he is simply challenging the assumption. If that is the
15 case, would you still object to Dr. Thompson's
16 qualification?

17 MS. UTTAL: Yes, because I think that his lack of
18 knowledge of criticality analysis causes him to -- can you
19 hold on for a second?

20 [Pause.]

21 MS. UTTAL: I think that part of the analysis in
22 this area of how the criticality -- how criticality is used
23 or how criticality is prevented in the spent fuel pools
24 requires a knowledge of the areas of criticality. And to
25 say that I am going to come in and just challenge your

1 assumptions and then raise all these other assumptions, that
2 may or may not have anything to do with the topic points out
3 the lack of expertise. And I think that it shows that very
4 little weight should be given to his testimony.

5 JUDGE LAM: Thank you.

6 JUDGE SHON: I, too, have a question for Ms.
7 Uttal. Ms. Curran suggested that at his deposition, Dr.
8 Thompson's deposition, nothing was brought out that would
9 have suggested he had no familiarity with the way in which
10 the inputs influence the outputs in criticality. Is that
11 correct?

12 MS. UTTAL: I'm sorry, I don't understand the
13 question.

14 JUDGE SHON: Ms. Curran suggested that at Dr.
15 Thompson's deposition, there were no questions asked of him
16 that suggested he did not have a grasp of what the situation
17 was regarding criticality. Is that correct?

18 MS. UTTAL: I don't recall the actual details.
19 He did make some statements regarding how criticality works,
20 and he has made some statements regarding his analysis of
21 this double contingency rule. The staff finds that that is
22 incorrect, that he has misinterpreted the double contingency
23 rule. But I don't recall the details of that particular
24 portion of his testimony, I'm sorry.

25 JUDGE BOLLWERK: All right. Anything further

1 from the Board at this point?

2 [No response.]

3 JUDGE BOLLWERK: All right. Ms. Curran, do you
4 want to say something about Mr. Lochbaum at this point, or
5 do you want to --

6 MS. CURRAN: I think I will wait.

7 JUDGE BOLLWERK: All right.

8 MR. O'NEILL: Mr. Chairman, do I have an
9 opportunity to address the issue?

10 JUDGE BOLLWERK: This wasn't your motion. If you
11 would like to say something, I will let you go ahead, but I
12 will allow Ms. Curran an opportunity to respond then.

13 MR. O'NEILL: Sure. If this were a subpart (g)
14 proceeding, we would certainly support or move to strike Dr.
15 Thompson's testimony as an expert. It is not a subpart (g)
16 proceeding, this is not -- testimony will not be presented
17 at this oral argument. So, consequently, while we are
18 sympathetic certainly with the substantive points made by
19 counsel, we believe the appropriate treatment of Dr.
20 Thompson's lack of expertise is in evaluating the issue
21 before the Board, which is whether or not an adjudicatory
22 hearing is appropriate. Indeed, whether or not this is a
23 type of dispute that can be accurately resolved only with --
24 only with the traditional adjudicatory procedures.

25 One of the issues that would impact on that is

1 whether or not the sole expert that is being proffered, by
2 BCOC could contribute to such a hearing, and we submit that
3 the review of the deposition of Dr. Thompson, particularly
4 at the pages we have cited in our pleadings, would suggest
5 that he would have very little to contribute. While it is
6 true that he may have immersed himself in this area for the
7 last six months, certainly Dr. Turner, who submitted an
8 affidavit here, has immersed in this area for over 40 years.
9 His first criticality analysis was done in 1957, which I
10 note was before Dr. Hollaway was born. He may have been on
11 Mt. Sinai advising Moses with respect to the burning bush,
12 I am not sure, but he has been around for some time. And,
13 certainly, Dr. Kopp, who is the expert for the staff, has
14 equally significant expertise in this area.

15 I believe that the statements by Dr. Thompson
16 show his naivete and his lack of familiarity with the
17 practicalities of how a nuclear power plant works, who spent
18 fuel is stored, how criticality is controlled, and, thus,
19 his own statements indict his expertise. And I note
20 specifically to Footnote 122 in our submittal, which refers
21 to the deposition transcript, which demonstrate he has no
22 training or experience with criticality control systems, no
23 experience with criticality control regulation, no
24 experience with nuclear power plant licensing, nuclear power
25 plant operations, or nuclear power plants as a general

1 matter, although he did say he had toured a number of fuel
2 handing buildings over the years.

3 So I submit that that should be given the weight
4 that it deserves, which is very little, and specifically
5 goes to this Board today as to why an adjudicatory hearing
6 could not be the only way that this issue could be resolved.

7 JUDGE BOLLWERK: All right. Do other Board
8 Members have anything for Mr. O'Neill?

9 [No response.]

10 JUDGE SHON: No.

11 All right. Ms. Curran, I will allow you an
12 opportunity?

13 MS. CURRAN: I would just like to respond for the
14 moment.

15 JUDGE BOLLWERK: Surely.

16 MS. CURRAN: First of all, it is important to
17 point out that the Board could decide on the basis of this
18 oral argument in favor of Orange County, as well as deciding
19 in favor of CP&L. And Dr. Thompson has demonstrated that
20 he has the training and expertise necessary to critique the
21 criticality analysis that was done by CP&L and performed by
22 the staff in this case. He also has the expertise necessary
23 to support Orange County's argument that, as a matter of
24 law, CP&L does not comply with General Design Criterion 62.

25 Mr. O'Neill talks about Dr. Thompson's naivete

1 in thinking apparently that the regulations are something
2 that need to be complied with and that practicalities don't
3 surmount the requirements of the regulation. Dr. Thompson
4 is highly competent to evaluate the requirements of GDC 62
5 and the various staff guidance documents that implement it,
6 and evaluate whether GDC 62 is being complied with in this
7 case.

8 The fact that CP&L's and the NRC staff's witnesses
9 have been around for a long time, approving the kind of
10 license amendments, and promoting the kind of licensing
11 amendments that CP&L seeks here does mean that they are --
12 their qualifications are so much superior to his that Dr.
13 Thompson's should be given no weight in comparison.

14 What we have here, and what we have laid out
15 before the Board is a long road in which both the industry
16 and the NRC staff have strayed further and further from the
17 requirements of GDC 62 and the service of the expediency of
18 the nuclear industry. It is valuable to the Board that a
19 person with experience in nuclear engineering, which Dr.
20 Thompson does have, and experience in nuclear safety
21 analysis, which he does have, and experience in nuclear
22 physics and scientific analysis, applying principles of
23 nuclear physics, is able to take a look at this issue and
24 give a fresh perspective on something that has not been
25 addressed for a long time.

1 JUDGE BOLLWERK: All right.

2 MS. CURRAN: Okay.

3 JUDGE BOLLWERK: Any other questions from the
4 Board?

5 [No response.]

6 JUDGE BOLLWERK: All right.

7 MS. CURRAN: Okay. I would like to start by
8 addressing CP&L's argument which was made in its January
9 12th letter that Orange County has attempted to reformulate
10 its contention by arguing that rather than constituting
11 physical systems and processes, the measures the county is
12 advocating are some form of alternative administrative
13 procedures. CP&L appears to base this argument on a portion
14 of Orange County's summary in which the county explained
15 what the distinction is between -- the basic distinction
16 between physical systems and processes in administrative
17 measures.

18 In that discussion, which appears at pages 21 to
19 24 of Orange County's summary, Orange County, in part,
20 responds to what I think was a question from the Board
21 during the oral argument, which was -- Doesn't every
22 physical system or process have some administrative
23 component? And the answer is, yes, that there is, of
24 course, if you are going to -- if you are going to build a
25 rack that has a certain degree of spacing, it is

1 administrative in nature for someone to design the rack and
2 build it. But there is really distinctive difference
3 between the kind and degree of administrative activity that
4 is required to do that and the kind of administrative
5 activity that is required to implement the kind of measures
6 that are proposed by CP&L in this case.

7 So we have not changed the contention. We have
8 merely clarified that there is a qualitative distinction
9 between physical systems and processes and administrative
10 measures, even though each of the involves to some degree a
11 little bit of the other, but they are still quite distinct.
12 So we have not amended or attempted to amend our contention
13 without leave of the Board.

14 The first basis of Contention TC 2 boils down to a
15 legal dispute about what is a physical system or process as
16 the term is used in GDC 62. And I would like to address
17 some of the arguments that are made by the other parties and
18 just kind of go through them. I realize that the Board does
19 not want me to repeat all our arguments, but to try to join
20 the arguments of the other parties and illuminate as best I
21 can what I think is the dispute and what is the answer.

22 I would like to point out first that there is some
23 inconsistency in the staff's position. At first the staff
24 says that fuel burnup, which is the chief measure relied on
25 by CP&L for criticality prevention, is a physical process.

1 But then apparently realizing that the real question is how
2 do you characterize the control of fuel burnup, the staff
3 then admits that CP&L proposes to use administrative
4 measures to verify that a fuel assembly has achieved the
5 requisite degree of burnup, and this is also reflected in
6 the affidavit of Dr. Kopp.

7 CP&L also concedes that what it is proposing to do
8 involves administrative measures, but argues that, as a
9 practical matter, every method available for spent fuel pool
10 criticality prevention is a physical system or process that
11 is implemented by some administrative measures.

12 CP&L then goes on to list five measures for
13 criticality prevention and lists all as physical systems or
14 processes that are implemented by some administrative
15 measures. That is true but only up to a very limited point,
16 and I think that if you go to the Orange County summary at
17 pages 21 to 24, we set forth there the fundamental
18 qualitative difference between what is a physical system or
19 process and what is an administrative process.

20 Administrative measures require repeated human
21 actions over a long period of time and, thus, are far more
22 prey to human error. There is a significant distinction
23 between the type of administrative action required for
24 geometric separation and solid neutron absorbers than for
25 soluble neutron absorbers or control of burnup.

1 In building a rack, after the rack is built to a
2 certain specification, there is little or no administrative
3 action that is needed after that to make sure that that rack
4 functions as it is supposed to function to prevent
5 criticality.

6 In contrast, where a licensee relies on control of
7 burnup, every time fuel is moved in or out of the fuel pool,
8 that requires some human action, some intervention by a
9 human being to make sure that that action is being taken
10 care properly. So that the fundamental nature of that
11 action doesn't have to do so much with the characteristic of
12 the fuel, but whether the human beings who are responsible
13 for putting the fuel in the right places do their job
14 properly. That is an administrative measure and that is the
15 kind of measure that is not allowed by GDC 62.

16 JUDGE LAM: If I may interrupt, Ms. Curran.

17 MS. CURRAN: Yes.

18 JUDGE LAM: I think this is a key point in this
19 contention. Now, the whole industry, according to the
20 staff, has been using these type of administrative measures
21 for the past 20 years. If your interpretation of GDC 62 is
22 correct, and if the staff's statement is correct, are you
23 saying the whole industry for the past 20 years was allowed
24 to operate in violation of GDC 62?

25 MS. CURRAN: Yes, and I am not sure that it has

1 been -- you could say that this has been going on uniformly
2 for the last 20 years. What we have set forth in our
3 summary is an evolutionary process that relates to the
4 buildup in the inventory of spent fuel at nuclear power
5 plants and the pressure on licensees to pack nuclear fuel
6 into denser and denser configurations.

7 The original wording of GD 62 did not contemplate
8 that particular contingency -- was not planning on that.
9 The original guidance that was issued in 1978, several years
10 after GD 62 -- GDC 62 came out, which was 1971, did not
11 contemplate the kind of reliance on administrative measures
12 that CP&L is proposing here and that the NRC staff has been
13 approving in recent years.

14 So, in our view, and we have tried to set this out
15 in our summary, there has been a movement, a slow and steady
16 movement of the NRC staff away from the original guidance of
17 GDC 62, the requirement of GDC 62, and the guidance of the
18 1978 Grimes letter.

19 JUDGE LAM: Thank you.

20 MS. CURRAN: I would also like to address a
21 little further this issue of the history of the staff having
22 approved, I believe the staff said that they have approved
23 at least 50 of these applications that would rely on burnup
24 credit.

25 Dr. Kopp, in his affidavit, says that the

1 licensees have established ways to predict the burnup level
2 in fuel, and that that has gotten more sophisticated over
3 time. But what he doesn't address, which is very important,
4 is whether there has been a systematic way of keeping track
5 of licensee experience with administrative measures. And to
6 our knowledge, the staff has not done this.

7 The staff has basically anecdotal information,
8 some of which it provided to us and we cited in our Appendix
9 B to our summary. But the staff has not made a systematic
10 analysis of what is licensee experience in relying on
11 administrative procedures for criticality control. And as
12 our Appendix B shows, there have been instances of
13 misplacement of fuel assemblies and, on occasion, there have
14 been instances where a single error resulted in multiple
15 misplacements of fuel assemblies. There has also been at
16 least once instance of a problem with maintenance of soluble
17 boron levels.

18 But these, again, are in anecdotal reports. We
19 were not able to get any kind of systematic analysis of the
20 staff of what is the history of licensee experience relying
21 on these administrative measures.

22 I would like to talk about the history of GDC 62,
23 which is very important, and each party has addressed it in
24 their summaries. The staff and CP&L claim that the
25 rulemaking history supports their view that GDC 62 allows

1 the reliance on administrative measures. They put a lot of
2 stock in a 1967 draft version of GDC 62, which I believe was
3 then denominated 66.

4 That draft version proposed to required
5 criticality prevention methods as follows: Criticality in
6 new and spent fuel storage shall be prevented by physical
7 systems or processes. Such means as geometrically safe
8 configurations shall be emphasized over procedural controls.

9 In their view, the fact that procedural controls
10 were mentioned in the same context as physical systems and
11 processes indicates the Commission's intent to include
12 procedures as part of physical systems and processes. But
13 the really important thing to bear in mind with respect to
14 this is that reference to procedures in connection with
15 physical systems and processes has now disappeared, and that
16 appears to have been taken out by the Commission in response
17 to a particular comment by Oak Ridge National Laboratories
18 on the proposed rule.

19 Oak Ridge said, "We do not understand the
20 implication of," quote, "or processes," close quote, "at the
21 end of the first sentence. Nor do we believe that it is
22 practical to depend on procedural controls to prevent
23 accidental criticality in storage facilities of power
24 reactors." Hence, the last sentence of this criterion should
25 be changed to read as follows: "Such means as

1 geometrically safe configuration shall be used to ensure
2 that criticality cannot occur." This letter is attached as
3 Exhibit 13 to Orange County's summary.

4 CP&L is incorrect when it argues that ORNL
5 requested the removal of the term "processes." ORNL merely
6 asked the Commission for clarification, implicitly asked the
7 Commission for clarification of what the term meant. This
8 request was not granted by the Commission, but it is not the
9 case that the Commission refused to delete the language.

10 CP&L also both claim that the Commission rejected
11 ORNL's comment, but the Commission did respond to ORNL's
12 implicit request -- the Commission did respond to ORNL's
13 request to completely remove any reference to procedural
14 measures as an acceptable means of criticality prevention.
15 That is extremely important.

16 Now, whether, in the proposed rule, the Commission
17 intended that procedures would be part of physical systems
18 and processes, or whether the Commission didn't realize that
19 the two terms were internally inconsistent, the important
20 thing is that the Commission took the language out. It took
21 out the reference to procedures when it promulgated the
22 final rule.

23 It is also important to note that it is clear that
24 GDC 62 intended by the use of the phrase "physical systems
25 and processes" to restrict the scope of measures that would

1 be allowed under GDC 62, that the term "physical systems and
2 processes" has to mean something, some limited category of
3 measures that doesn't include the whole universe of things
4 one could do to prevent criticality. Otherwise, the
5 Commission would have just said in GDC 62, criticality shall
6 be prevented, period.

7 Neither CP&L, nor the NRC staff has explained what
8 is excluded by this rule. As far as they are concerned, any
9 measure for criticality prevention is permitted by GDC 62.
10 They don't provide a single example of something that
11 wouldn't be allowed. So, under their interpretation, the
12 restriction of GD 62 -- GDC 62 to physical systems and
13 process doesn't have any meaning.

14 JUDGE BOLLWERK: Let me ask, I guess, a variation
15 on the point that you brought up. In terms of physical
16 systems and processes, you said they haven't told you what
17 is excluded. Maybe I can ask you what is included other
18 than physical separation, at least the way you are reading
19 it?

20 MS. CURRAN: There is two things that are
21 permissible. One is physical separation, the other is the
22 physical inclusion of boron in the structure of the rack.

23 JUDGE SHON: Ms. Curran, may I ask whether you
24 make a distinction between, for example, boral and boroflex?
25 There was a considerable amount of experience with boroflex

1 a while ago in which it deteriorated and came out, and it
2 would require someone to look every now and then, one way or
3 another, to see whether it was still there. Boroflex is an
4 inclusion of boron in the racks, but it certainly requires
5 checking from time to time to make sure it is still there.
6 Do you see what I mean?

7 MS. CURRAN: Yes. Yes.

8 JUDGE SHON: Do you consider that these two
9 methods of introducing boron into the racks are, one of
10 them, an administrative thing, and the other a solid
11 reliable thing?

12 MS. CURRAN: Well, again, this gets back to the
13 issue of, is anything ever purely physical? And the answer
14 is no, there is always something that has to be done by a
15 human being. But it is a question of degree, and the degree
16 is significant. For any piece of equipment that is used in
17 a nuclear power plant, periodic inspection of the integrity
18 of the equipment is required, that is a given. But that
19 doesn't take away from the fact that that physical thing is
20 -- it is a thing, that it is engineered to be that way, and
21 it is going to stay that way, and it doesn't depend for its
22 functioning on continual human intervention.

23 Contrast that with putting boron in the pool, that
24 requires a human being, or some human beings to constantly
25 be adding boron to the pool, measuring the boron levels,

1 making sure that they are adequate. That is an ongoing need
2 for human intervention that is not contemplated by the
3 regulation.

4 Another piece of evidence that is important to
5 look at regarding the meaning of GDC 62 -- I have trouble
6 with that "C" -- is the contemporaneous staff guidance or
7 the most contemporaneous staff guidance that was issued, and
8 that is the 1978 Grimes letter. The Grimes letter contains
9 two provisions that are consistent with CP&L's and the
10 staff's position.

11 First, the Grimes letter lists a number of
12 accidents that must be considered in a criticality analysis.
13 They include dropping of a fuel assembly, dropping a cask,
14 earthquakes or other events causing deformation of the rack
15 or the loss of cooling water. That is the list given in the
16 Grimes letter.

17 It is really important to note that all of these
18 failures that have to be analyzed under the Grimes letter
19 are failures of a physical system or process. They do not
20 include the misplacement of a fresh fuel assembly. They
21 don't include an error in the boron, in maintaining boron
22 levels in the spent fuel pool.

23 The Grimes letter also assumes that under normal
24 conditions, there is (a) no soluble born, and (b) the
25 presence of, quote, "the most reactive fuel authorized to be

1 stored in the facility." In other words, the Grimes letter
2 does not contemplate that any administrative measures will
3 be taken to control either soluble boron levels or burnup
4 levels.

5 The staff places a great deal of importance on the
6 use of the word "preferably" in the phrase "preferably by
7 the use of geometrically safe configurations" as it is used
8 in GDC 62. The staff interprets the use of this word
9 "preferably" to mean that other things like procedural
10 measures are allowable. This is not the inevitable
11 inference of the use of the word "preferably." As I just
12 mentioned to Judge Shon, there are other physical systems
13 besides spacing that could serve the purpose or assist in
14 preventing criticality, and that would include the
15 introduction of boron into the racks themselves.

16 The staff cites a number of cases in which
17 Licensing Boards have approved spent fuel pool expansion
18 involving the use of administrative measures. In only one
19 of these cases, the Big Rock case, however, did the
20 Licensing Board address whether a proposed measure was
21 physical or not. The other cases simply didn't attempt to
22 address the meaning of GDC 62 or what constitutes a physical
23 measure.

24 As discussed in Note 24 of our summary, Orange
25 County disagrees with the Board's conclusion in Big Rock

1 that a remotely controlled makeup line constituted a
2 physical measure. But it needs to be observed that in that
3 case, the Board found that no one had provided evidence
4 suggesting that the makeup line was not a physical measure.
5 We didn't have time to go back into the evidentiary record
6 of that case, but, certainly, the Board didn't see any
7 reason why not to call this a physical measure.

8 Orange County has provided the basis for making
9 that kind of a distinction here. A makeup line is something
10 that has to be operated on a routine basis by the use of
11 administrative procedures by a human being. That, under
12 Orange County's interpretation, that is not a permissible
13 interpretation of GDC 62. But it is also notable that Big
14 Rock concerned the storage of high reactivity fresh or
15 nearly fresh fuel assemblies, and considered their
16 hypothetical exposure to a particular accident scenario,
17 which is boiling water, foam or mist, so it is not
18 necessarily applicable to this case.

19 In the event the Board does consider this case to
20 be applicable, the Board may and should choose to disagree
21 with it, Orange County submits.

22 I would like to turn to the other regulations
23 besides GDC 62 which deal with criticality control. The NRC
24 staff and CP&L have stated that 10 CFR 50.68(b), which has
25 subsections 1, 2 and 3, permit reliance on administrative

1 measures for criticality prevention. Orange County strongly
2 disagrees with that characterization of the regulations, and
3 we believe that we have set forth in great detail in our
4 summary our reasons for believing that these regulations do
5 not condone such administrative measures. I would be glad
6 to go through them if the Board wishes, but this is at page
7 30 to 37 of our summary. But I feel that we have laid this
8 out very thoroughly.

9 We have also discussed another regulation that is
10 found at 10 CFR 72.124 which deals with criticality control
11 at independent spend fuel storage facilities.

12 One of the arguments that the NRC staff makes is
13 that administrative measures are allowed by one of the ANSI
14 standards, the standards of the American Nuclear Society,
15 this is standard 8.1-1983. We would point out that this
16 particular ANSI standard is very general, it applies to all
17 fissionable materials, including, for example, fuel
18 fabrication where quantities of fissionable material are
19 typically much smaller. In any event, an ANSI standard
20 constitutes industry guidance, it is not a regulation, so
21 that the General Design Criterion would trump any reference
22 to an ANSI standard.

23 The NRC's staff also makes an argument that it
24 doesn't make sense to interpret GDC 62 as restricting
25 licensees solely to physical systems and processes because

1 GDC 62 applies to fuel handling systems that may move only
2 one fuel assembly at a time, and administrative controls
3 must be used to prevent temporary storage of multiple
4 assemblies in close proximity.

5 We have already acknowledged that there are some
6 unavoidable administrative measures that have to be taken in
7 preventing criticality. Someone has to put the fuel in the
8 pool, for instance, and could drop it. But to argue that
9 this allows administrative criticality prevention measures
10 on a general and broad basis, it is really an absurd
11 interpretation of the rule.

12 CP&L makes the argument that because the staff has
13 been granting spent fuel pool expansion applications that
14 rely on control of burnup levels for a long time, its
15 position should be accorded considerable weight. Orange
16 County would submit that the fact that the staff has been
17 doing this for a long time shows that there is a
18 considerable problem here. Continuous repetition of an
19 action that is not permitted by the regulations doesn't give
20 it any particular weight. The staff is also just another
21 party to this proceeding and its position is not entitled to
22 any more weight than any of the other parties here.

23 I would like to move on to basis 2 of the
24 contention. CP&L argues that the county has attempted to
25 impermissibly expand the scope of Contention TC 2 in several

1 respects. First, that we have -- we argue that the
2 applicant failed to evaluate the universe of two or more
3 concurrent accident conditions. That we argue the applicant
4 failed to evaluate the likelihood and independence of each
5 accident condition. We argue the applicant failed to
6 demonstrate that fuel assembly misplacement is an unlikely
7 event. And that we argue the applicant assumed a single
8 error will lead to only one fuel assembly misplacement.

9 This gets to the question of whether the only
10 issue that the Board is going to hear with respect to
11 application of the regulatory guidance in this proceeding is
12 whether the single misplacement of a single fuel assembly
13 would lead to a criticality accident.

14 Orange County believes that the general intent of
15 the Board in admitting in basis 2 was to allow an inquiry
16 into whether the standards set forth in Draft Reg. Guide
17 1.13 and NRC staff guidance is met by CP&L's proposal even
18 if GD 62 can be interpreted to allow reliance on
19 administrative measures. Orange County believes it is
20 reasonably within the scope of basis 2 to inquire whether
21 the double contingency principle has been applied properly
22 to the CP&L license application, even if one assumes that
23 administrative measures for criticality prevention are
24 permissible, but it is also important, regardless of how the
25 Board comes down on the scope of basis 2.

1 Our summary on the application of the regulatory
2 guidance to CP&L's license amendment application deals in
3 large part with the appropriate interpretation of the double
4 contingency principle. And as we have set forth in our
5 summary, the double contingency principle is the basic
6 guidance that was first set forth in the Grimes letter for
7 interpreting General Design Criterion 62. It has been
8 considerably watered down as the staff has gone through the
9 process over the years of conceding more and more ground to
10 utilities that have been under pressure to find more space
11 at their nuclear power stations to spent fuel in denser and
12 denser configurations.

13 Regardless of how the Board rules on basis 2, it
14 is very important to understand that the double contingency
15 principle is a part of -- an important part of the
16 interpretation of General Design Criterion 62. If the Board
17 were to rule that CP&L is restricted to physical systems and
18 processes such as separation of the fuel and the use of
19 solid boron in the racks that would not be the end of CP&L's
20 obligation under NRC guidance for the implementation of GDC
21 62. CP&L would also have to apply the double contingency
22 principle to evaluate whether those physical measures are
23 adequate to prevent criticality --

24 MR. THOMPSON: Accidents.

25 MS. CURRAN: Criticality accidents. And as

1 Orange County sets forth in Appendix A to its summary,, the
2 double contingency principle is a different principle than
3 the single failure principle, although the staff has later
4 attempted to reduce it to a single failure principle. That
5 is a very -- it is very important to recognize that that is
6 an important part of the staff's guidance in implementing
7 GDC 62.

8 We would also like to point out that even
9 accepting the proposition that basis 2 is strictly limited
10 to the consideration of the misplacement of a single fuel
11 assembly, as argued by CP&L and the staff, Orange County has
12 presented evidence that places into substantial dispute
13 whether CP&L has met this so-called single failure
14 criterion, as articulated by the Licensing Board in its
15 decision in the contention.

16 CP&L has done a criticality calculation which
17 shows that if a single fresh fuel assembly were misplaced in
18 pool C or D, the criticality level would be 0.7783, assuming
19 the presence of 2,000 PPMs of soluble boron. CP&L has
20 calculated that the criticality level would be 0.9352,
21 assuming the presence of 400 PPMs of soluble boron, and then
22 it would be 0.9932, assuming soluble boron is not present.
23 This is at the CP&L summary at page 60.

24 Thus, CP&L asserts that pool C or D would be
25 subcritical assuming misplacement of a single fresh fuel

1 assembly even if no boron were present.

2 Now, Orange County, as we have stated previously,
3 does not either accept or reject the validity of this
4 calculation. We accept it for purposes of this argument.
5 Our concern is with the assumptions that go into the
6 calculation. The assumptions, or the results of the
7 calculation, just taking the results, without questioning
8 the calculation as done by CP&L, the results of CP&L's
9 calculation does not show that CP&L is not able to satisfy
10 NRC and industry guidance for prevention of criticality in
11 its spent fuel pool.

12 At page 4-1 of enclosure 7 to the license
13 amendment application of December 23rd, 1998, CP&L asserts
14 that the K effective value for criticality in the spent fuel
15 pool must be less than 0.95, with a 95 percent probability
16 at a 95 percent confidence level.

17 CP&L also claims that the standards that are
18 applicable to it with respect to criticality prevention
19 include the Grimes letter, which also sets a K effective
20 standard of 0.95, including all uncertainties under all
21 conditions. The Grimes letter is also quoted in paragraph
22 14 of the affidavit of Dr. Lawrence Kopp, the staff's
23 witness.

24 CP&L also asserts that in its license amendment
25 application, enclosure 7, the criticality standards that are

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1025 Connecticut Avenue, NW, Suite 1014
Washington, D.C. 20036
(202) 842-0034

1 applicable to it include ANSI standard 57.2-1983, which is
2 entitled "Design Requirements for Lightwater Reactor Spent
3 Fuel Storage Facilities at Nuclear Power Plants." We do not
4 necessarily agree with everything in ANSI 57.2, but because
5 CP&L has committed to this standard, it must meet it, and
6 CP&L does not meet the standard.

7 There are two portions of the ANSI standard that
8 have to be looked at together. First, Section 6.4.2.2.3
9 requires an adequate margin of subcriticality under the
10 operating limits in any plant condition, and shall assume a
11 value of 0.05 unless a smaller value can be justified. In
12 no case shall a value of delta K-M, which the marginal K
13 effective value would be less than 0.02. So this is
14 basically adopted the same standard as the Grimes letter,
15 which is a K effective of no more than 0.95, but allowing
16 some room for movement there, up to 0.98 at the very most.

17 There is another part of ANSI standard, of the
18 ANSI 57.2 that also comes into play here. Under Section
19 6.4.2.2.9, the presence of soluble boron cannot be
20 considered in the evaluation of K effected -- K effective
21 for Plant Conditions 1, 2 and 3, as they are described in
22 the ANSI standard.

23 In the analysis for Plant Conditions 4 and 5, the
24 initial presence of soluble boron may be assumed. PC1
25 events are those events that are expected to occur regularly

1 or frequently in the course of normal operation at the,
2 facility. PC2 events are those with an estimated frequency
3 of at least 1 per 10 reactor years. PC3 events are those
4 with an estimated frequency of at least 1 per 100 reactor
5 years, but less than 1 per 10 reactor years.

6 PC4 and 5 events are not expected to occur during
7 the life of the facility, but they are postulated because
8 their consequences would include the potential for the
9 release of significant amounts of radioactive material.
10 Their estimated frequency is between 1 per million reactor
11 years and 1 per hundred reactor years. An example of PC4 or
12 5 event would be a loss of offsite power for up to seven
13 days.

14 So CP&L can only assume that soluble boron is
15 present if it can show that the misplacement of a single
16 fuel assembly is unlikely enough to fall into category PC4
17 or 5, but CP&L has done nothing to demonstrate that
18 misplacement of a single fuel assembly is so unlikely as to
19 fall into either of those categories, and, in fact, as
20 demonstrated by the examples of misplacement of fuel
21 assemblies that are listed in Appendix B to our summary, the
22 misplacement of one or more fuel assemblies is actually a
23 likely event and has happened in the past.

24 Given CP&L's failure to demonstrate the extremely
25 low likelihood of the misplacement of a single fuel

1 assembly, it isn't entitled to assume that soluble boron is
2 present in the pool, and, therefore, its calculation of the
3 K effective if a single spent fuel assembly is misplaced,
4 the calculation for the conditions of the pool with no boron
5 has to be the calculation that governs here, and that
6 calculation is above the limit. It is above the limit of
7 0.95 and it is also above the outer limit of 0.98.

8 As a result, Orange County has demonstrated that
9 there is a significant and material factual issue as to
10 whether a single misplacement of a spent fuel pool assembly
11 would result in criticality above acceptable levels under
12 standards that have been adopted by CP&L as applicable to
13 its facility.

14 That is all I have, and I see that I have taken
15 more time than I thought I would.

16 JUDGE BOLLWERK: Did you have anything?

17 JUDGE SHON: No.

18 JUDGE BOLLWERK: Well, let me just -- okay, you
19 have mentioned there is -- you have identified a
20 significant factual issue. Is that one requires that
21 requires an evidentiary hearing though? I mean from what
22 you have presented here, it strikes me what you are saying
23 is you win. Or, alternatively, tell me what, in terms of a
24 significant factual issue, if we go to an evidentiary
25 hearing on this, what would you -- you know, where are we

1 going? What additional evidence are we going to take?
2 What witnesses are we going to hear? What information is
3 going to be presented?

4 MS. CURRAN: Yes, I would have to say I think we
5 win based on that.

6 JUDGE BOLLWERK: All right.

7 MS. CURRAN: I'm sorry. Excuse me.

8 JUDGE BOLLWERK: Sure.

9 [Pause.]

10 MS. CURRAN: If this did go to a hearing, we
11 would anticipating looking at, in more depth, at the
12 procedures proposed to be used by CP&L for controlling
13 acceptable burn-up levels, and also the history of
14 experience of other licensees with this. Because, what
15 we've tried to do in Appendix B to our summary is, using
16 what little information is available to us, demonstrate that
17 it's not only likely, but that it's happened that fuel
18 assemblies are misplaced.

19 We would anticipate that if this went to a hearing
20 that we would go into more detail about what that likelihood
21 is and explore at greater depth what the industry experience
22 has been.

23 JUDGE BOLLWERK: All right. Let me ask you two
24 questions about that. First, what are their acceptable
25 burn-up levels and how -- I mean, my understanding is,

1 you're saying that's an administrative measure and you're
2 really talking about spacing and boron placement; those are
3 the only two measures they can use, or am I
4 misunderstanding?

5 MS. CURRAN: Basis two of the contention is
6 really an alternative argument --

7 JUDGE BOLLWERK: All right.

8 MS. CURRAN: -- that if the Board accepts CP&L's
9 and the Staff's proposition that administrative measures are
10 acceptable under GDC-62, then Basis 2 applies the regulatory
11 guidance to that concept.

12 JUDGE BOLLWERK: All right, in terms --

13 MS. CURRAN: But we would -- you know, the
14 fundamental --

15 JUDGE BOLLWERK: Right.

16 MS. CURRAN: -- and most important aspect of our
17 case is in Basis 1, which asserts that GDC-62 would not
18 permit the measures proposed by CP&L, and we believe the
19 Board can rule for us as a matter of law on that issue.

20 JUDGE BOLLWERK: You talked about the history,
21 and obviously in terms -- it strikes me at least -- in terms
22 of likelihood or significance and history, then what you
23 have to do is compare the number of incidents, for instance
24 -- or am I being too naïve or simplistic about this? -- for
25 instance, of the number of reactor hours, in terms of

1 reactor years of operation, how many of these occur? And,
2 I guess just off the top of my head, we have a lot of
3 reactor operation, and even what you've given us doesn't,
4 when you compare it to that, doesn't seem to be
5 "significant," and that's my question.

6 MS. CURRAN: Well, what we've been able to
7 provide you is clearly a partial record based on,
8 essentially, an anecdotal collection of information
9 maintained by the NRC staff. What we would expect to pursue
10 in discovery is, is the question of whether the Staff has
11 any basis one way or the other for reaching the conclusion
12 about the likelihood of fuel mishandling accidents, or how
13 quickly they're resolved.

14 There's a statement in one of the parties'
15 summaries that these problems are generally very quickly
16 noticed and resolved, which is contradicted by the
17 circumstances described in some of the licensee event
18 reports that, that we reviewed.

19 JUDGE BOLLWERK: All right, then ask me ask a
20 separate procedural question, and -- you mentioned
21 additional discovery, but at least in terms of the
22 procedures as I understand it, we would now go to an
23 evidentiary hearing, and I don't know that there'd be any
24 additional discovery. What would you -- I mean, are you
25 then trying to elicit this information on cross-examination

1 of the witnesses?

2 MS. CURRAN: My understanding -- and again, this
3 is, these roles are not crystal clear, but why would the
4 Commission give such an extremely abbreviated discovery
5 period in this proceeding prior to the oral argument unless
6 it -- that to me seems to be, the brief discovery period
7 seemed to be attached to the idea that you would get some
8 discovery, go to this oral argument, and see if the case
9 would, would go further. But --

10 JUDGE BOLLWERK: Well, another way to analogize
11 it is the general summary disposition, where you have your
12 discovery, you go to the summary disposition motion. If a
13 party for summary disposition loses, then the case goes to
14 an evidentiary hearing and proceeds from there, but that
15 doesn't necessarily mean you interpose more discovery into
16 the process.

17 MS. CURRAN: Yes, that's right, except that when
18 you have summary disposition, the rules regarding discovery
19 prior to summary disposition, they don't, they don't impose
20 a quantitative limit on the time for discovery. Basically,
21 the Board sets an appropriate amount of time for discovery
22 to fully ventilate the issues. And the Commission seemed to
23 have a different purpose in mind here, which was to make,
24 make things go quickly up to sort of a summary stage. So I
25 see a conceptual difference there. You know, I don't think

1 it's a hundred percent clear, but I would infer from the way
2 the rules are structured that the Commission wouldn't rule
3 out additional opportunity for discovery if it, if it were
4 needed.

5 JUDGE BOLLWERK: All right, let me go back to the
6 first point again, one more time. You've mentioned that I
7 guess the physical separation in the use of boral agents
8 attached to the fuel racks are the two things that you feel
9 fall within the interpretation that you've given it. If
10 that were the case, why didn't the Staff or the Commission
11 simply specify those two things if there wasn't anything
12 else?

13 MS. CURRAN: Because, at the time that GDC-62 was
14 promulgated, the most prevalent way of, of preventing
15 criticality was spacing of the racks, of the -- you know,
16 construction of the racks so that the assemblies would be
17 spaced far apart. At that point, I think the technology for
18 putting boral or boron panels in the racks may have been
19 just beginning.

20 [Pause.]

21 MS. CURRAN: But it seems that -- okay, the
22 Commission was well aware that spacing was the primary means
23 of doing this. Then I think the Commission left the
24 language general so that as technology developed -- I would
25 assume the Commission anticipated that technologies would be

1 developed to address this problem. And they might include
2 other things besides spacing or putting boron panels in the
3 rack.

4 [Pause.]

5 MS. CURRAN: All right. I think I've answered
6 it.

7 JUDGE BOLLWERK: All right. Any questions from
8 the other two Board members?

9 JUDGE SHON: Ms. Curran, I think your recent
10 dissertation on the ANSI standard was a little different
11 from the materials submitted earlier, in that it seems to me
12 that you proposed a sort of a clincher -- that is that the
13 standard requires that for Conditions 1, 2 and 3, one cannot
14 take credit for boron, and that it is only for Conditions 4
15 and 5 that one may take such credit, and that Conditions 4
16 and 5 are associated with very, very rare events, far rarer
17 than the misplacement of a fuel element, and that the
18 applicant's own figure -- .9932 -- exceeds either allowable
19 limit of .95 or .98, and therefore they in effect do not
20 meet the standard. Is that correct?

21 MS. CURRAN: That's right. And we did, we did
22 discuss the ANSI standard in Appendix A to our summary.

23 JUDGE SHON: I think in your summary you
24 suggested that there was some vagueness as to what the
25 conditions even meant, and now you seem to have quite a

1 fuller grasp of what each one means.

2 MS. CURRAN: Well, this, this particular field of
3 criticality analysis has many, many, many standards that are
4 not all consistent. But, you know, in the crucible of
5 preparing for oral argument, some things become quite, more
6 clear. And it seemed to me that the purpose of this oral
7 argument was to bring some of those things to the fore and
8 crystallize them.

9 JUDGE SHON: Oh, yes. That's quite correct. Yes.

10 JUDGE LAM: Judge Shon, are you done?

11 JUDGE SHON: Yes.

12 JUDGE LAM: Ms. Curran, may I follow up with a
13 question?

14 MS. CURRAN: Sure.

15 JUDGE LAM: With Judge Shon's remarks -- are you
16 saying the applicant must meet the 0.95 effective standard,
17 assuming misplacement of one fresh fuel bundle and absence,
18 the total absence of boron? Is that what you're proposing?

19 MS. CURRAN: In order to be consistent with the
20 requirements of the Grimes Letter and the ANSI standard,
21 which, to which, both of which the CP&L has committed to
22 comply, yes.

23 JUDGE LAM: Okay. Thank you.

24 JUDGE BOLLWERK: All right. At this point, it's
25 11 o'clock. Would you like to take a brief break before you

1 begin, or do you want to launch into your --

2 MR. O'NEILL: I'm ready to roll.

3 JUDGE BOLLWERK: All right. Why don't we go
4 ahead and do that then, and we'll see, when you're done,
5 then where we're at and perhaps take a break at that point.
6 Why don't you go ahead, sir.

7 MR. O'NEILL: Mr. Chairman, Judge Shon, Judge
8 Lam, I'd like to respond and break up my presentation in the
9 following respects.

10 First I'd like to address the substance of the
11 last question that Judge Bollwerk asked, which is how we
12 should deal with this contention. What should the Board be
13 doing? It's the first time we've had this proceeding; I
14 think it's appropriate to address that issue.

15 Second, I will address Basis 1.

16 Third, I will address the attempted expansion of
17 Basis 2. And I'll ask Dr. Holloway, since he is a nuclear
18 engineer qualified to do criticality analysis -- and I don't
19 want to not take advantage of the opportunity to address the
20 technical issues in the double contingency principle. He
21 may be in a better position to answer any questions that the
22 Board had on that area.

23 The reason we're here today is really because
24 Congress told us to be here. They told us to be here in two
25 respects. One, in the Nuclear Waste Policy Act of 1982,

1 specifically in Section, 42 U.S.C. 10.154, Congress
2 specifically recognized and encouraged the use of a number
3 of methods for effectively expanding spent fuel storage at
4 reactor sites, including "the use of high-density fuel
5 storage racks" and "transshipment of spent nuclear fuel to
6 another civilian nuclear power reactor within the same
7 utility system.

8 Why did Congress do that? Congress did that
9 because it did not pass legislation that had been proposed
10 for over five years by the industry and others in Congress
11 for a federal away-from-reactor central storage facility for
12 spent nuclear fuel while awaiting the repository to be sited
13 and constructed and operational. Congress understood it had
14 the obligation; it assumed that obligation and said okay,
15 with respect to spent fuel storage, utilities are gonna do
16 it on-site. You're going to expand your on-site storage
17 facility. That was a decision made by Congress.

18 Secondly, Congress said, we know that sometimes it
19 is difficult to get through license amendment proceedings
20 before the Nuclear Regulatory Commission, so we're going to
21 create a new procedure and we're going to expedite those
22 proceedings. And that led to Subpart K. So we're here
23 because CP&L is running out of spent fuel storage because
24 the Department of Energy has breached its contract, has
25 failed to develop a repository, and Congress did not mandate

1 away from reactor storage. They said to CP&L and every
2 other utility, do whatever you can to do it on-site.

3 And, Congress said to the NRC, come up with
4 regulations to do it in a more expeditious fashion. So
5 that's what we're about today, is doing what Congress told
6 us to do and electing a procedure that, that Congress had
7 suggested was the appropriate way to do it.

8 Now, I'd like to address Judge Bollwerk's question
9 as to what do we do with respect to these contentions. And
10 to go back a little bit as to the history of the development
11 of Subpart K and why the language is there the way we see it
12 today. We submit that after oral argument, the Board can do
13 one of two things with respect to each contention. One, it
14 can designate any disputed issue of fact together with any
15 remaining issues of law for resolution in an adjudicatory
16 hearing. Or, it can -- and we say here, should -- dispose
17 of any issues of fact or law not designated for resolution
18 in an adjudicatory hearing. So those are the two choices
19 that the Board has in this very different proceeding that
20 we're engaged in.

21 The rules provide details of what must be included
22 in the designation of an issue for resolution in an
23 adjudicatory hearing. For those contentions that do not
24 pass muster, for whatever reason -- and there's, as we've
25 set out in some detail in our submittal, there's a

1 four-pronged test that must be passed before the Board can
2 designate an issue for resolution in an adjudicatory
3 hearing. But regard to those issues not designated for
4 resolution in an adjudicatory hearing, the presiding officer
5 shall include a brief statement of the reasons for the
6 disposition.

7 Now, we wrestled with, for some time, what does
8 "dispose of" mean here? And we went back to the initial
9 proposed rules, and the proposed Option 2, which was
10 eventually adopted with a number of modifications. And the
11 proposed rule would have required much more. The proposed
12 rule in Option 2 would have required the Board to decide all
13 issues of fact or law not designated for resolution in an
14 adjudicatory hearing, setting forth fully the presiding
15 officer's findings and conclusions with the reasons or basis
16 for that. Now that is what originally was proposed.

17 The Edison Electric Institute, representing a
18 number of electric utilities -- I think forty or so -- and
19 others argued that this provision was inconsistent with the
20 Nuclear Waste Policy Act. The Act did not call for formal
21 findings and conclusions; the Act called for an expedited
22 proceeding. And the Edison Electric Institute argued that
23 the presiding officer should not be required to decide all
24 issues not designed for adjudication. Perhaps issues
25 determined to be insubstantial or inappropriate for

1 resolution by adjudication.

2 EEI noted that the presiding officer may decide to
3 simply dismiss such issues and refer them to the NRC Staff
4 for non-adjudicatory resolution, like every other issue that
5 the NRC looks at in connection with a license amendment
6 proceeding that's not the subject of a contention. EEI
7 advocated that the presiding officer's determination should
8 merely be supported by an adequate statement of reason.
9 Otherwise, EEI was concerned that this process could just
10 drag on, inconsistent with what Congress the NRC to do.

11 Now EEI proposed that the section be revised to
12 read, instead of "decide. . . ," "decide or dismiss all
13 issues of law or fact not designated for resolution in an
14 adjudicatory hearing, setting forth the reasons for such
15 action. Instead of "decide or dismiss," the Commission
16 decided to use the word "dispose." And we believe that
17 there's no difference. Those are the two, the only two
18 options you really have: decide the issue or dismiss the
19 issue.

20 In the statement of considerations in the final
21 rule, the Commission noted that five commenters had pointed
22 out that there was no need for formal findings of fact and
23 conclusions of law in the presiding officer's decision --
24 disposing of issues or designating them on the adjudicatory
25 hearing. The Commission agreed and stated, "For issues not

1 designated for adjudication, all that is required by the
2 Administrative Procedure Act is a brief statement of the
3 reasons for the denial of the request. Thus, the presiding
4 officer may simply dispose of issues not designated for
5 adjudication with an adequate explanation of the reasons why
6 a hearing is not required."

7 Thus, it's clear that the Board need not decide
8 each contention on the merits. All that is required is a
9 brief statement of the reasons why hearing is not required.
10 The Board must decide whether the contention meets the
11 strict threshold for an adjudicatory hearing, and if the
12 contention does not meet that strict threshold, we submit
13 that the Board has considerable discretion either to decide
14 an issue or dismiss it.

15 Now, with respect to Contention 2, our position is
16 that it is in the interest of the parties, it's in the
17 interest of the Commission or the Board to decide the pure
18 legal issue before you on Contention 1, Basis 1. We don't
19 think that the Commission's processes would be served any
20 other way, although we note that it is clearly not
21 permissible to hold an adjudicatory hearing on purely a
22 legal issue, as we note in our brief. What evidence would
23 we bring to bear? The Board made it quite clear is that
24 this is purely a legal issue and there's been no dispute of
25 that fact. Therefore, we would suggest that based on the

1 arguments and based on the papers before the Board that the
2 Board should decide this issue.

3 Step 1 would be to find that an adjudicatory
4 hearing is not required because it involves a question of
5 law. And Step 2 -- and by the way, the first criteria is to
6 be a question of fact in dispute, and there's no question of
7 fact in dispute. And Step 2 would be to issue a decision on
8 the legal question. I guess the other alternative is the
9 Board could elect, and has the power to elect or refer to
10 the Commission for decision, but it would appear, given the
11 amount of material that the Board has had a chance to
12 digest, that it would not be in the interest of judicial
13 economy just to pass the buck without issuing its decision.

14 On Basis 2, the fuel assembly misplacement
15 analysis, presuming that we are here before this Board on
16 the contention as admitted, we submit that this issue is
17 moot. And as we will discuss, there is no genuine dispute
18 of fact regarding whether a single fuel assembly
19 misplacement could cause criticality. That is conceded by
20 the BCOC, that the criticality analysis that was done
21 demonstrates that it would not cause criticality. That's
22 the contention. So we submit that this issue is really
23 moot, and it could simply be dismissed. And in fact the
24 NRC, of course, has performed a separate analysis, which
25 indicates that you could fill the entire pool, you could

1 fill the entire pool with fresh fuel and there would be no
2 criticality. Now that, we submit, is what the Board should
3 do with respect to Contention 2. And let me turn to address
4 Contention 2, Basis 1.

5 Basis 1, In the contention as adopted that CP&L's
6 proposed use of credit for burn-up to prevent criticality
7 and pull C and D is unlawful. Because GDC 62 prohibits,
8 prohibits, does not allow does not include a preference.
9 Prohibits the use of administrative measures. Not some
10 administrative measures all administrative measures. And
11 the use of credit for burn-up is an administrative measure.

12 That's why this contention was admitted in the
13 first place, because the board allowed as a legal contention
14 that if you read GDC 62 and read it only that GDC 62 says
15 criticality and the fuel storage and handling system shall
16 be prevented by physical systems or processes preferably by
17 the use of geometrically safe configurations. ECOC argued
18 that burn-up credit was not a physical system or process.

19 Therefore we didn't meet GDC 62. Therefore, there
20 was a contention because we could not have a, we were in
21 violation of the law, because as Ms. Curran said at the
22 pre-hearing conference what GDC 62 says is thou shall not
23 use administrative control. That was the contention they
24 admitted. That was the contention we ought to litigate.

25 As we went through the discovery process, and

1 pressed Dr. Thompson in his deposition on isn't it true
2 that administrative controls are required for every form of
3 criticality control; he had to concede that was true. And,
4 in deed, when we questioned Dr. Thompson and asked him
5 isn't it really true that every form of criticality control
6 involves a physical system or process. He had to concede
7 that was true.

8 I submit to the board, there is nothing left to
9 this contention. Because, you once you concede that, in
10 fact, there is no commandment, that says thou shalt not use
11 administrative control, but rather administrative controls
12 are part of every physical system or process.

13 Then there was no basis for admitting this
14 contention in the first place. So why are we here?

15 The new theory, having nothing to do with this
16 contention except that it relates to the same matter, is
17 well what this really means is that there are some physical
18 systems or controls that are okay because the administrative
19 measures are not as great as the other physical systems and
20 controls in pertinent processes which require more ongoing
21 administrative measures. That line, of course, is no where
22 in GDC 62. This is made up whole cloth, this is almost an
23 absurd contention, and sometimes the more absurd are more
24 difficult to respond to.

25 But let's analyze that proposition is Judge Shon's

1 questions starts to point out.

2 Well, how do you draw the line. Morale and
3 boraflex is okay because somehow those administrative
4 measures are less ongoing. As Judge Shon pointed out, not
5 true. There is, in fact, more difficult inspections as an
6 ongoing basis for certain licensees with boraflex then the
7 administrative measures require to identify what fuel
8 assembly is going to point "A" to point "B". So how does
9 that fit into this construct of which administrative
10 controls are okay and which administrative controls are not
11 okay.

12 So we submit that the contention as admitted, the
13 contention as admitted, has been conceded by BCOC. And now
14 what Ms. Curran is doing is arguing a whole new contention,
15 a different contention.

16 One that we submit that if we had an opportunity
17 to address at the contention stage, we would kept out.
18 Because there is simply no basis for that new construct that
19 Dr. Thompson and Ms. Curran have come up with. Where is
20 the basis for it?

21 What document would you point to say that these
22 are okay and these are not okay. None.

23 So we now address though the totality of the
24 argument which is okay, now having looked at our new
25 contention is there any legal basis for prohibiting burn-up

1 credit.

2 First of all, is that what the commission
3 intended. I will not repeat what I believe is a careful
4 discussion of the regulatory history of GDC 62.

5 We went through each of the subsequent drafts of
6 GDC 62. And I believe demonstrated that in each case, the
7 first sentence which said what was allowed, included
8 procedural controls which was in the second sentence as one
9 of the things that was a physical system or process.

10 So as you go through in each succeeding draft it's
11 fairly clear that at all times, what the commission had in
12 mind was allowing procedural controls or administrative
13 measures, same thing, there is no difference there. And the
14 only thing that happened when it was finalized, was in
15 response to, not the Oak Ridge National Laboratory comment,
16 but a separate comment that was not mentioned by Ms. Curran
17 initially, and is in our filing. There was a clear
18 preference for spacing not over procedural controls but over
19 anything. And if you look at the SECY letter which we point
20 out in our filing, it was clear that this was simply a
21 clarification, not a dramatic shift.

22 So we believe that a careful reading of the
23 regulatory history makes it very clear that the commission
24 was not changing GDC 62 to eliminate procedural controls or
25 administrative measures.

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1025 Connecticut Avenue, NW, Suite 1014
Washington, D.C. 20036
(202) 842-0034

1 Where this contention falls off the face of the
2 earth, however, is in looking at what the commission adopted
3 in 10CFR50.68. Once again that is discussed, I believe
4 carefully in our summary.

5 But to look at 50.68(b)4 which states, if no credit for
6 soluble boron is taken the K effective or the spent fuel
7 storage racks loaded with fuel of the maximum assembly
8 reactivity. If you are analyzing reactivity, what are you
9 analyzing? What are you taking credit for 1) enrichment 2)
10 run of credit. There is no dispute that those of the
11 components of reactivity.

12 So to the extent that the commission understands
13 that in doing the analysis, you will look at maximum
14 reactivity, you are looking at enrichment and burn-up
15 credit. And of course those are physical systems and
16 processes and of course it requires administrative controls.

17 So in adopting 50.68 and the companion section in
18 70.24 the Commission has endorsed what has been the practice
19 of the staff for many years which is to certainly allow
20 burn-up credit for criticality control.

21 Ms. Curran cited to the Big Rock case which she
22 suggested that you should ignore. I note it is a atomic
23 safety and licensing appeal board decision and there is two
24 particular things that are note worthy in there.

25 One is that what was done here which was to

1 endorse the use of a remotely controlled makeup line as part
2 of a physical system with administrative measures that were
3 deemed acceptable for criticality control suggest that the
4 appeal board in a case in which this issue is actually
5 raised certainly understood that GDC 62 allowed
6 administrative measures or controls. And importantly, which
7 Ms. Curran did not mention is that the appeal board in
8 doing this analysis indicated that we agree with the
9 licensing board the staff guidance and acceptance criterion
10 for spent fuel pool criticality is entitled to considerable
11 weight.

12 So while it is true that the staff is a party to
13 this proceeding it is also true that as a matter of
14 administrative law when interpreting a regulation you're
15 interpreting GDC 62 that the staff's interpretation, in
16 deed, the staff's interpretation for 20 years should
17 certainly be given considerable weight and in deed, as Dr.
18 Kopp indicated 50 licensees rely on burn-up credit for
19 criticality control.

20 Let me summarize our response to the arguments by
21 Ms. Curran on basis 1.

22 First, all methods of criticality control for
23 spent fuel pools, including fuel enrichment and burn-up
24 limits are physical systems or processes. The staff the
25 applicant and Dr. Thompson agreed to that factual

1 proposition.

2 Number two, all methods of criticality control for
3 spent fuel pools including fuel enrichment and burn-up
4 limits are implemented by using some administrative
5 measures. All parties agree to that.

6 Three. Fuel assembly reactivity includes the
7 effect of fuel burn-up. All parties agree to that.

8 The regulatory history of GDC 62 together with the
9 Commission's statements of consideration and promulgating 10
10 CFR 50.68 establish that GDC 62 permits the use of
11 administrative measures to implement physical systems or
12 processes used for criticality control including reactivity
13 which includes burn-up credit.

14 The NRC staff's consistent interpretation of GDC
15 62 should be accorded considerable weight. Particularly
16 where it's interpretation is the only one that could be
17 given practical meaning to GDC 62.

18 The position is BCOC here is made of whole cloth.
19 It's not practical, it doesn't reflect an understanding of
20 either the guidance documents the evolution of criticality
21 control or what is in fact done within the industry and done
22 in a safe manner.

23 Thus the Board should find as a matter of law that
24 GDC 62 permits the use of administrative measures to
25 implement criticality control methods. GDC 62 permits an

1 applicant to take credit in criticality calculations for
2 enrichment and burn-up limits in fuel and GDC 62 permits the
3 use of administrative measures to implement these limits.

4 I would like to turn to, unless the Board would
5 like to ask any questions on this part of this.

6 All right, Why don't we stop at this point.

7 JUDGE BOLLWERK: I just have one. I asked Ms.
8 Curran a similar question from a different prospective.
9 Given the way you are reading the regulation what does it
10 exclude, if any thing in terms of utilities ability to.

11 MR. HOLLOWAY: The answer to that question is
12 there are only a limited number of ways you control
13 criticality.

14 Number 1 is spacing.

15 Number 2 is boron dilution.

16 Number 3 is solid boral neutron absorbers.

17 Soluble neutron absorbers and reactivity which is enrichment
18 or burn-up credit. That's the universe.

19 None of those are prohibited by GDC 62. In deed,
20 if the Commission wanted to prohibit some method of
21 criticality control they certainly could have done so.

22 There is a preference. A clear preference.

23 Stated for spacing, but that preference now comes up against
24 what Congress directed that we do today and why we have
25 evolved which is for high density spent fuel storage racks.

1 High density spent fuel storage racks requires
2 more than spacing to accomplish it and that's why we CPL and
3 50 other licensees have gone to high density racks which use
4 among other things burn-up credit for criticality control.

5 So there is no prohibition of any of those means
6 of criticality control and in deed, if the Commission wanted
7 to do it, they would have said so and certainly two years
8 ago they would have not passed 50.68 which permits
9 reactivity as part of criticality control.

10 JUDGE BOLLWERK: All right, any other questions
11 from anyone. All right, Mr. Hollaway.

12 MR. HOLLAWAY: Actually, I am going to address
13 next the expansion of the basis two and then let Mr.
14 Hollaway address contention to basis two.

15 As admitted, contention two, basis 2 provides that
16 the use of credit for burn-up is prescribed because
17 regulatory guide 1.13 requires that criticality not occur
18 without two independent failures and one failure
19 misplacement of a fuel assembly could cause criticality if
20 credit for burn-up is used.

21 The Board clarifying this specifically stated the
22 question: will a single fuel assembly misplacement involve
23 in a fuel element of the wrong burn-up or enrichment cause
24 criticality in the fuel pool or would more than one such
25 misplacement or a misplacement coupled with some other error

1 be needed to cause such criticality.

2 That's the contention that we thought we were
3 litigating. BCOC has now attempted, we believe
4 impermissibly to expand the contention to include the
5 following arguments.

6 One: Applicant failed to evaluate the universe of
7 two or more concurrent accident conditions.

8 Two: Applicant failed to evaluate the likelihood
9 and independence of each accident condition.

10 Three: Applicant failed to demonstrate that fuel
11 assembly misplacement is an unlikely event and;

12 Four: Applicant assumed that a single error will
13 lead to only one fuel assembly misplacement.

14 We had no opportunity to address these contentions
15 and whether or not there was adequate basis and whether or
16 not five factors were met for late filed contention.

17 What the summary filed BCOC and the argument today
18 would do, is dramatically expand basis 2 because it's pretty
19 clear that basis 2 is moot and will be disposed of. We
20 submit dismiss.

21 So what the BCOC would have us do is as Ms.
22 Curran stated a few minutes ago, she believes that the
23 Board's intent was a general inquiry and that's reasonably
24 within the scope of basis two.

25 To look at the double contingency principle to the

1 entire application and whether CP&L meets the single failure
2 criterion not just for this one item that was part of the
3 contention but in the universe of issues.

4 We submit that the case law does not permit BCOC
5 at this stage of any proceeding, much less a subpart K
6 proceeding to expand the basis of the contention or to plead
7 new contentions.

8 And we direct the Board's attention to the Yankee
9 Atomic decision ALAB 919 cited in our summary that indicates
10 to permit reformulation of contentions every time their
11 proponents file another pleading would be tantamount to
12 rejecting all notions of an orderly and fair administrative
13 process.

14 In the Limerick case, Philadelphia Electric ALAB
15 819 the appeal board said an intervenor is bound by the
16 literal terms of its own contention. Thus, the intervenor
17 is not free to change the focus of its admitted contention
18 at will as the litigation progresses. That's what the BCOC
19 has attempted to do here.

20 The contention that they had admitted they found
21 out they didn't like because the answer is pretty clear. No
22 criticality, single assembly misplacement, end of issue.

23 BCOC does not want it to be the end of issue they
24 want to go into a general inquiry of the double contingency
25 principle. That is not permitted. So we would argue that

1 with respect to all arguments outside the scope of the,
2 contention, they can be readily disposed of, certainly there
3 shall not be any judicatory hearing and if at this time BCOG
4 were to want to put those issues in play, they would have to
5 submit a late filed contention.

6 They would have to demonstrate the five factors
7 and we could challenge the basis of such contention.

8 At this time if there is no questions, I would
9 like to ask my colleague Mr. Hollaway to address the
10 substantive issues raised by contention to basis two.

11 JUDGE BOLLWERK: Questions?

12 All right, Mr. Hollaway then.

13 MR. HOLLAWAY: I am going to address basis 2 of
14 contention 2. I will start out by addressing basis 2 as it
15 was admitted as it is written and I will also address the
16 four new issues that have been raised. We haven't had a
17 full chance to litigate or address those but we have looked
18 into those issues and we have something to say about them to
19 show why we believe even if they had been properly admitted
20 that they would not be appropriate subjects for a judicatory
21 hearing in any event.

22 First, basis two as it was admitted by the Board.

23 As written basis two says use of credit for
24 burn-up is prescribed because Regulatory Guide 1.13 requires
25 the criticality not occur without two independent failures.

1 And one failure misplacement of a fuel assembly could cause
2 criticality if credit for burn-up is used.

3 That's the contention basis that we have
4 addresses. There are only two material facts required to
5 dispose of basis two as it is written.

6 First, that the applicant has performed a
7 criticality analysis of a single fuel assembly misplacement
8 for Harris Pools C & B.

9 Second, that that criticality analysis
10 demonstrates that a single fuel assembly misplacement will
11 not cause criticality in Harris Pools C & B.

12 BCOC does not contest that those are the two
13 material facts required to dispose of basis two as it is
14 written. In response to the admission of basis two the
15 applicant has performed a supplemental criticality analysis
16 of a single fuel assembly misplacement for Harris C & B.

17 We have submitted that with our filing, I am not
18 going to get into any proprietary details of it but it is
19 there for your perusal.

20 The applicant supplemental misplacement analysis
21 shows that in fact Harris Pools C & B are subcritical
22 following a single fuel assembly misplacement with 2,000 PPM
23 of soluble boron with 400 PPM of soluble boron and in fact
24 not critical with 0 PPM of soluble boron.

25 That analysis used standard codes and methods

1 approved by the NRC staff was done in compliance with QA
2 procedures was independently reviewed, checked and verified.
3 I know that the intervenor is not challenging those
4 calculations, but to assure that there is no reason for any
5 further review of these in a judicatory hearing and that the
6 Board could use this to dispose of basis 2, this analysis,
7 and you can read the analysis yourself, was done in
8 compliance with all standard procedures, methodologies and
9 approaches.

10 BCOC in fact concedes the validity of the
11 calculation and the results in the calculation.

12 The supplemental analysis that the applicant
13 performed proves the two materials facts required to dispose
14 of basis 2 as it's written.

15 First, applicant performed a criticality analysis
16 of a single fuel assembly misplacement.

17 Second, criticality analysis demonstrates single
18 fuel assembly misplacement will not cause criticality.
19 Remember basis two said one failure could cause criticality.

20 The analysis we did unequivocally answers basis
21 two as it was admitted as it is written. Moreover, Gordon
22 Thompson has admitted that he is not qualified in any event,
23 in the event of a judicatory hearing to go into the details
24 of that calculation or challenge the calculations validity
25 itself.

1 Therefore, for basis two as it is written, there
2 is no need for a judicatory hearing and the Board should
3 dispose of basis two as written in the applicant's favor.

4 I will now turn to the four new basis, things that
5 have been introduced during the course of discovery in the
6 filing in fact here today that simply were not stated in the
7 proposed contention, or not stated in the admitted
8 contention, were not stated in the prehearing conference.
9 They have all been improperly raised new basis and in fact
10 new basis for an existing contention are treated the same
11 way as a new contention is under the late filing standards.

12 All four of the new basis are outside of the scope
13 of basis 2 as it is written and we have not yet had a chance
14 to challenge the admissibility of these basis.

15 I assure that the applicant would certainly
16 contest the admissibility of each of these four new basis
17 and will do so if afforded the opportunity..

18 First, the intervenor attempts to add a new basis
19 claiming that the applicant was required to analyze some
20 universe of two or more unlikely independent and concurrent
21 events that could lead to criticality.

22 Certainly basis two as admitted doesn't talk about
23 any universe or scenarios, it is specific about the scenario
24 to be looked at and moreover there is not commission
25 regulation requiring applicants to evaluate two or more,

1 two, three, four, five, six, seven, eight I don't know, where
2 it ends.

3 Unlikely independent postulated accidents, that's
4 simply not required by any regulation nor by staff guidance.

5 In fact, if you look at their filing, Dr.
6 Thompson effectively claims he would like to see the NRC
7 require applicants require to do a PRA analysis of spent
8 fuel pool criticality control.

9 There simply is no such requirement. In fact,
10 BCOC is asking to turn the double contingency principle on
11 its head. The double contingency principle has stated as
12 understood for 25 years means that those scenarios involving
13 two or more unlikely independent concurrent accident
14 conditions are what does not need to be looked at.

15 What the intervenor is telling us is that that is
16 precisely what does need to be looked at. That's simply not
17 what anyone whose been in this game for a long time has ever
18 understood this to mean.

19 In fact, the double contingency principle is an
20 NRC staff construct and I would urge the Board in
21 interpreting an NRC staff statement to look at the NRC staff
22 says about it.

23 In fact, in the Staff's most recent guidance, in
24 fact in 1998, late 1998, Staff's guidance regarding the
25 double contingency principle clearly says, quote, "Two

1 unlikely independent and concurrent incidents or postulated
2 accidents are beyond the scope of the required analysis." It
3 is very clear.

4 There is no support for BCOC's assertion that some
5 universe, undefined universe of scenarios need to be looked
6 at.

7 At any event, stating that some universe needs to
8 be looked at is just a theoretical discussion. The real
9 issue is, the practical issue is what scenarios haven't been
10 looked at for Harris. BCOC apparently erroneously assumed
11 and has stated that the Applicant considered only one
12 accident scenario, a single failure misplacement of a fuel
13 assembly. That is certainly what we have discussed in
14 response to Basis 2 because that is what Basis 2 says, but
15 certainly in doing analyses for the license application we
16 looked at other scenarios. We looked at normal conditions
17 with a single fuel assembly misplacement. We looked at
18 normal conditions with the loss of all soluble boron. We
19 looked at normal conditions with single fuel assembly
20 misplacement and the loss of 80 percent of the soluble
21 boron. We looked at normal conditions with a single fuel
22 assembly misplacement and the loss of all soluble boron.

23 Moreover, the NRC Staff evaluated an infinite
24 number of misplacements in the Harris pools. So many
25 scenarios have been looked at it is unclear what this

1 universe means in practical application to Harris because
2 that is what we are here for is Harris not some general
3 theoretical principle.

4 There isn't any basis in the regulations,
5 regulatory guidance or practice for this new assertion about
6 the universe of scenarios. It is certainly not worthy of
7 any further hearing in an adjudicatory hearing. We don't
8 believe it would even be admissible as a contention basis if
9 it were proposed.

10 The second new basis they have asked to include is
11 that the loss of soluble boron is a likely event at Harris.
12 You can read Basis 2, you can read the proposed contention,
13 read the prehearing conference transcript -- it didn't say
14 anything about "and we propose that loss of soluble boron is
15 a likely event at Harris." We would certainly have responded
16 to such a contention were it proposed.

17 Basis 2 never included anything like that. The
18 applicant's filing in any event demonstrates that loss of
19 soluble boron, the boron dilution event at Harris, is not
20 even credible and would be difficult to do physically even
21 if you wanted to. As a matter of physics it turns out that
22 when water is lost from the pools through evaporation or
23 some other scenario, this loss of water increases the boron
24 concentration in the pool. The water leaves. The boron
25 stays.

1 If anything, in practical application the
2 difficulty is keeping the boron level down. That is as a
3 matter of physics.

4 Moreover, by procedure at Harris, the issue here,
5 soluble boron level is checked every month, and prior to
6 every fuel movement. In fact, research of Harris records
7 demonstrates that there has never been a loss of soluble
8 boron event in the Harris spent fuel pools. It is not
9 likely, not credible. We don't even know how we do it to
10 get it down from 2000 PPM to zero. You would have to
11 somehow lose millions of gallons of water without knowing
12 it, and let it go on. Not credible.

13 Now Intervenor filed a bunch of stuff in if I
14 throw enough stuff at the wall maybe some of it will stick,
15 but it is not very sticky. You filed a bunch of paper here.
16 It is 19 LERs and Information Notices. It is Appendix B of
17 their filing. You read through it. Out of all this stuff,
18 they have had six months to look at this, out of everything
19 they looked at -- you've got 100 operating reactors, I don't
20 know what the average life of a reactor is currently, 15
21 years, reactor has been operating for close to 40 years --
22 they were able to find one event where spent fuel pool boron
23 was diluted at all, and it was diluted by a whopping 43 PPM
24 out of 2000 -- 2000 down to 1957. It wasn't at Harris, by
25 the way -- 43 PPM.

1 Our analysis shows we would be below K effective
2 of 0.95 with only 400 PPM of boron in the pool. You would
3 have to lose 1600 PPM of boron. Intervenor in the stuff
4 that they have showed us doesn't show anything like loss of
5 soluble boron would be a likely event at Harris. It just
6 doesn't show that. One event at some other plant does not
7 demonstrate that it is a likely, normal operating condition
8 at Harris.

9 Moreover, the issue of loss of soluble boron is
10 moot because the Applicant has performed critical analyses
11 to show that Pools C and D would remain subcritical even if
12 you did lose all the soluble boron, so it is a moot issue in
13 any event. There isn't any basis in fact for asserting that
14 loss of soluble boron is likely at Harris. This issue
15 certainly, based on what we have seen, is not worthy of any
16 further look in an adjudicatory hearing even if it had been
17 properly admitted before the Board.

18 Third new issue, similar vein, fuel assembly
19 misplacement is likely for Harris Pools C and D. Now you
20 could read Basis 2 again. It doesn't say anything about
21 fuel assembly misplacement and its likelihood. It says do
22 an analysis assuming a fuel assembly misplacement. That
23 says assume with certainty it happens, go do the analysis.
24 It doesn't say determine the likelihood of it -- it might be
25 likely, it might not be. That is simply not in the

1 contention.

2 However, even if the Board were to look at this
3 issue, we have shown in our filing all kinds of reasons why
4 a fuel assembly misplacement is highly unlikely at Harris.

5 There are a variety of physical reasons why
6 misplacing a fresh fuel assembly in Harris is unlikely.
7 First of all, fresh fuel at Harris is always handled dry,
8 not wet, until it is put into Pool A, 300 feet away from
9 Pools C and D, all the way on the other end of the fuel
10 handling building. There's a good reason it is put in Pool
11 A, because Pool A is the pool that is right near Unit 1.
12 There is no reason to put the fuel in somewhere 300 feet
13 distant from the reactor, so when fresh fuel is put into the
14 fuel pools it is put into Pool A, never -- no intent of ever
15 putting fresh fuel in Pools C and D. From there it is taken
16 a short distance into the reactor core, never comes anywhere
17 Pools C and D. This just is a physical matter.

18 It uses different equipment for handling,
19 different cranes. Fresh fuel is shiny, new, not red, not
20 blackened. In fact it is handled in the open air because it
21 is not radioactive or not significantly radioactive.

22 Moreover, as I said, it is never intentionally
23 placed in Pools C and D and in fact it is prohibited by tech
24 specs, the tech spec that is a part of the proposed license
25 amendment.

1 In addition, at any given time there are no more
2 than 57 fresh fuel assemblies at Harris. Why is that?
3 They are expensive. You don't buy them until you need them.
4 You buy them before you go into outage. They are brought
5 in. They are stored dry, not in the pools, and then when
6 you get ready to actually put them in the core, you take
7 them into Pool A, nowhere near Pools C and D, and they are
8 there for a very short time -- physical reasons why it is
9 highly unlikely that you would ever put a fresh fuel
10 assembly in Pools C and D, but those are just physical
11 reasons.

12 In addition to that being, a prudent licensee,
13 CP&L has engaged numerous safeguards, numerous other
14 safeguards to ensure that misplacement is highly unlikely if
15 even credible at Harris.

16 First of all, the fuel assembly information is
17 tracked by a QA database. The database itself is validated
18 and independently verified through two separate checks. The
19 information that goes into the database is independently
20 verified through two different checks. Information that
21 comes out of the database is independently verified by two
22 different checks. There is a tech spec requiring that only
23 proper assemblies be loaded into Pools C and D.

24 The proper location of a fuel assembly to be moved
25 is independently verified through two separate checks before

1 the assembly is even engaged. The proper destination ,
2 location for an assembly being moved is also independently
3 verified by two separate checks prior to placing any
4 assembly into a new location. Moreover, any time an
5 assembly is moved again, these processes are gone through
6 again. You have a whole other series of multiple
7 independent redundant checks, and these things are addressed
8 in our filing. There's a series of procedures. There is an
9 affidavit of Steven Edwards from the Harris plant attesting
10 to these different safeguards that are put into place over
11 and above the fact that it just wouldn't make any sense as a
12 physical matter to ever get fresh fuel into C and D. All
13 kinds of redundant, independent verifications have been put
14 in that make fuel assembly misplacement highly unlikely at
15 Harris.

16 Now these things are all in our filing and they
17 haven't been challenged by the Intervenor. More
18 importantly, as you might be wondering, all of these
19 safeguards and practical physical implementation issues bear
20 fruit in practice. At Harris, which is the subject of this
21 case, there has never been a fuel assembly misplacement in
22 the Harris spent fuel pools. It has never occurred, so it
23 does not look likely for Harris based on procedural
24 safeguards, physical reality and actual experience.

25 So we come again to this pile of stuff that was

1 filed by the Intervenor. We have gone through this and out
2 of the 19 LERs and Information Notices, six appear to
3 involve actual misplacement of a fuel assembly. None of the
4 six are applicable to Harris. Five of them relate to
5 loading fuel on a checkerboarded pattern where each
6 individual site is treated differently, each cell is treated
7 differently. There is no proposal in the license amendment
8 to do checkerboarding for Pools C and D. It doesn't apply.

9 The sixth -- that is five of the six -- the sixth
10 was a case where no independent verification of fuel move
11 sheets was included. That is not the case at Harris. We
12 have got independent verification of move sheets. I went
13 through that whole series of redundant checks.

14 This doesn't apply, so none of this stuff applies
15 to the specific conditions at Harris, which is the issue
16 here. These LERs and Information Notices do not demonstrate
17 that misplacement is a likely event at Harris that would be
18 expected to occur as a part of normal operating conditions
19 within the meaning of the double contingency principle.

20 Moreover, the Intervenor has filed this stuff,
21 none of which is Harris, none of which applies to Harris.
22 They haven't shown how such an event would be likely at
23 Harris in light of the magnitude of procedures, safeguards
24 and physical reality of the plant.

25 It simply is not likely at Harris that a fuel

1 assembly misplacement will occur as a part of normal
2 operating conditions. There simply has not been enough put
3 forth by the Intervenor even if this had been properly
4 admitted somehow as part of the contention to be worthy of
5 an adjudicatory hearing.

6 The fourth new basis asserted by the Intervenor is
7 that some undefined single error could lead to multiple fuel
8 assembly misplacements in Harris Pools C and D. Again, if
9 you read Basis 2 you just don't see anything about multiple
10 fuel assembly misplacements. It is pretty clear. It says
11 misplacement of "a fuel assembly," but if we were going to
12 address this to the extent that we have seen it thus far,
13 nothing they have put down demonstrates any single failure
14 that could lead to multiple fuel assembly misplacements at
15 Harris.

16 Again, each fuel assembly movement -- I have gone
17 through this -- is an independent action verified through a
18 series of independent checkpoints. There is no one failure
19 that could lead to any misplacement and there is no failure
20 at all that could lead to multiple misplacements, no known
21 single failure that could lead to multiple fuel assembly
22 misplacements for Harris Pools C and D.

23 In the generalized assertion that the Intervenors
24 made, they haven't identified what this single failure would
25 be so it is hard for me to engage in specifics because they

1 haven't put any one down. Probably the reason they haven't
2 put any one down is there isn't such a thing at Harris -- no
3 evidence a single failure could cause multiple misplacements
4 at Harris, which is Harris because of the issue here.

5 Moreover, the NRC Staff did an analysis where they
6 assumed every assembly in the pool was misplaced, an
7 infinite number of misplacements -- every assembly is
8 misplaced, every assembly is a fresh fuel assembly at 5
9 percent. Guess what? Subcritical. Therefore, even if
10 these things, general assertions, were correct, still a moot
11 point, so no reason for an adjudicatory hearing here. You
12 have a moot issue.

13 Besides the fact that it has been improperly
14 raised, it is moot and there is no basis whatsoever. We
15 don't believe this would even be an admissible contention
16 based on what was put forth here.

17 Now we'll also talk about yet again new issues
18 that have been brought forth today, and that is ANSI, ANS
19 57.2, 1983. Now we'll go back to Basis 2 again, as it is
20 written and it says "Regulatory Guide 1.13 requires
21 criticality not occur without two independent failures and
22 one failure misplacement of a fuel assembly could cause
23 criticality."

24 It doesn't say anything about ANSI, ANS 57.2,
25 1983. I don't ever remember seeing or hearing that in the

1 proposed contention, in the contention that was admitted,
2 but they have laid it out here, so we will talk about it
3 even though it is clearly not part of Basis 2 as written and
4 as admitted.

5 First of all, had they even proposed this as a
6 contention, what it says in essence is that the Applicant in
7 their estimation is not meeting some industry guidance. We
8 would have opposed this as a contention because the NRC does
9 not enforce meeting discretionary or voluntary industry
10 guidance. It enforces meeting the regulations. There isn't
11 any regulatory here. We are talking about industry
12 guidance.

13 It is an ANS standard. It is not even an NRC
14 Staff guidance.

15 Regulatory guidance -- regulatory guidance --
16 comes from the NRC. We have regulations. We have Staff
17 guidance.

18 Now if the Intervenor wants to talk about NRC
19 regulatory guidance, we can talk about NRC Staff guidance on
20 this particular issue, which was misplacement of an assembly
21 with soluble boron.

22 Now they have talked about a 1978 letter from
23 Brian Grimes to power licensees -- 22 years ago -- plucked
24 out one piece of Staff guidance from over two decades ago
25 and I guess choosing to ignore the rest of the Staff

1 guidance. I would submit you should look at all the Staff
2 guidance, particularly more recent Staff guidance. 1998
3 Staff guidance says the double contingency principle means,
4 and this is in our filing at page 64 out of the 1998 Staff
5 criticality guidance, the double contingency principle means
6 that a realistic condition may be assumed for the
7 criticality analysis in calculating the effects of incidents
8 or postulated accidents. Of course, a postulated accident
9 is single fuel assembly misplacement.

10 For example, if soluble boron is normally present
11 in the spent fuel pool water, the loss of soluble boron is
12 considered as one accident condition and a second concurrent
13 accident near not be assumed, so you look at soluble boron
14 or you look at fuel assembly misplacement. You are not
15 required to look at them together.

16 Therefore, credit for the presence of the soluble
17 boron may be assumed in evaluating other accident
18 conditions, so if you want to play on the turf of Staff
19 guidance, Staff guidance is very clear on this issue, but
20 there is even more of the story, the regulations, about the
21 Commission. Let's look at what they say, not some industry
22 discretionary guidance but we looked at the Staff guidance.
23 Let's look at what the Commission says.

24 10 CFR 50.68(b)(4) -- again, this is all assuming
25 this was even properly before us in the first place, which

1 we submit it's not -- but, you know, if we have to make due
2 at the last minute, we can always pull this out and talk
3 about it. 10 CFR 50.68(b)(4) -- I am going to read it. "If
4 no credit for soluble boron is taken, the K effective of the
5 spent fuel storage racks loaded with fuel of maximum fuel
6 assembly reactivity must not exceed 0.95 at a 95 percent
7 probability, 95 percent confidence level if flooded with
8 unborated water."

9 Now here is where it gets interesting. "If credit
10 is taken for soluble boron, the K effective of the spent
11 fuel storage racks loaded with fuel of the maximum fuel
12 assembly reactivity must not exceed 0.95." That is if you
13 are taking credit for soluble boron at a 95 percent
14 probability, 95 percent confidence level. Now remember, we
15 did an analysis that says with single fuel assembly
16 misplacement and soluble boron in the water in fact K
17 infinite was 0.78. Okay?

18 "If flooded with borated water and K effective
19 must remain below 1.0 subcritical at a 95 percent
20 probability, 95 percent confidence level, if flooded with
21 unborated water." We did an analysis with a misplacement and
22 flooded with unborated water, that was below 1.0
23 subcritical, so we would meet this.

24 Now I point out that under the double contingency
25 principles you don't even have to do this because when it

1 says maximum fuel assembly reactivity, and if you look, at
2 the Statements of Consideration it is talking about the
3 maximum reactivity that is proposed for the pool, which
4 would be stuff within the burnup and enrichment curve, and
5 under the double contingency principle you don't look at two
6 separate unlikely and independent and concurrent accidents,
7 but, you know, we did it anyway, and we are below 1.0
8 subcritical, so -- even if you look at what the Commission
9 says.

10 Again, it was instructive to read that, because it
11 talks about below 1.0 subcritical. If you go back to the
12 Basis 2 as it is written, it doesn't say stay below 0.95 or
13 below some margin or below some industry guidance. It says
14 "One failure could cause criticality." Criticality, as
15 everyone is agreed -- I think Dr. Thompson stated so in his
16 deposition -- criticality means K effective of 1.0. That is
17 what the contention says as it was admitted. Our analysis
18 shows we meet this a variety of different ways but surely in
19 the latest version, which is a single fuel assembly
20 misplacement plus loss of all soluble boron, two independent
21 accidents, but even then that would not cause criticality,
22 so that meets Basis 2 as well.

23 JUDGE SHON: Mr. Hollaway?

24 MR. HOLLAWAY: Sir?

25 JUDGE SHON: I notice that there are additional

1 conditions in 50.68 concerning probability and concerning
2 the reliability of the calculation.

3 Do you also meet that? I didn't notice in your
4 summary that you said you did.

5 MR. HOLLOWAY: Yes, sir, and I will tell you where
6 that would be stated. That would be stated in the Holtec
7 analyses. That states how the analyses are done. I believe
8 it is also in Dr. Stanley Turner's affidavit as well, but
9 specifically in the Holtec analysis, which is Attachment, I
10 believe it is Attachment 2 to Exhibit 3, the affidavit of
11 Dr. Everett Redmond. It is very clear that it is for 95
12 percent probability, 95 percent confidence level, which is
13 the standard way they do all their analyses in any event,
14 but to answer your question, yes, in fact, that is the case,
15 and it is in our filing.

16 Therefore, it is our conclusion that with respect
17 to Basis 2 we have answered Basis 2 as it was written, as it
18 was admitted. Basis 2 as written, as admitted should be
19 disposed of either by finding in our favor or dismissing it
20 altogether, and we would submit that the Board should reject
21 consideration of the four improperly raised new bases as
22 well as new things raised here today, because they are
23 simply not in the literal wording of Basis 2 as it was
24 admitted nor its bases, therefore those should be rejected
25 from further consideration.

1 Even if any of that was considered, there is,
2 certainly no reason for an adjudicatory hearing on any of
3 these issues, least of which is Basis 2 as it is actually
4 written.

5 That concludes our remarks.

6 JUDGE BOLLWERK: All right. Do you have a
7 question, Judge Lam?

8 JUDGE LAM: Mr. Hollaway, in Ms. Curran's filing
9 as well as in her argument today, she specifically said that
10 the Staff draft Regulatory Guide 1.13 should not and does
11 not allow the reliance of soluble boron under normal
12 conditions.

13 If her interpretation is correct, then we do have
14 a dispute here. Do we? I would like to hear your opinion
15 on that interpretation?

16 MR. HOLLAWAY: Absolutely. I will tell you two
17 reasons why that is not correct.

18 First of all, that is use of soluble boron under
19 normal operating conditions, not accident conditions.

20 The analysis we have done -- I didn't go into this
21 in great detail in our filing because I don't believe that
22 is in Basis 2 as it is written -- but it is in our filing in
23 the Holtec analysis. In fact, this was done the first time
24 around, very clearly, and it's in Enclosure 6 of the license
25 application report. We analyze normal operating conditions

1 with no credit for soluble boron, so we meet that for normal
2 operating conditions.

3 Now in the event of an accident condition, that
4 accident being single fuel assembly misplacement, it is a
5 different matter as to whether or not you can include credit
6 for soluble boron in the accident condition.

7 Moreover, the one, two, third reason --
8 50.68(b)(4), if you look at that, remember Reg Guide 1.13,
9 the draft's from 1981. It is 20 years ago. 50.68(b)(4)
10 from within two years, the last two years, from the
11 Commission explicitly allows you to take credit for the use
12 of soluble boron during normal operations, and I would
13 assert that regardless of what Reg Guide 1.13 draft from
14 1981 says, the Commission's regulation in this matter would
15 be governing.

16 JUDGE LAM: Thank you.

17 JUDGE BOLLWERK: All right. Judge Shon?

18 [No response.]

19 JUDGE BOLLWERK: All right. Ms. Uttal, how long
20 do you think you are going to take?

21 MS. UTTAL: Mr. Weisman.

22 JUDGE BOLLWERK: Mr. Weisman, I'm sorry. How
23 long do you think you are going to take?

24 MR. WEISMAN: I don't anticipate it to be longer
25 than about 45 minutes, probably less than that.

1 JUDGE BOLLWERK: Less than that, yes.

2 [Laughter.]

3 MR. WEISMAN: But I would like to take -- if we
4 could, I would like to take a 10 minute break.

5 JUDGE BOLLWERK: Yes, we will definitely take a
6 break at this point, all right, and I should mention again
7 the Board does intend to finish this contention before
8 lunch, and the cafeteria closes at 2 o'clock, so taking that
9 all in into account, let's move along.

10 MR. WEISMAN: Thank you.

11 JUDGE BOLLWERK: We will take a 10-minute break.

12 [Recess.]

13 JUDGE BOLLWERK: All right. Let's go back on the
14 record after our break. Mr. Weisman, you are now up and I
15 think one of the things we would like you to focus on is
16 this question of the regulatory history and how the Staff
17 sorts all this out in terms of what Orange County's position
18 is, so in terms of regulatory history of GDC 62.

19 MR. WEISMAN: I think, Your Honor, that is going
20 to be part of my presentation.

21 I would like to start off though by saying that
22 both the Applicant and BCOC argue that Contention 2, Basis 1
23 is a legal issue. The Staff agrees. There is no dispute
24 about that. There are no facts that are at issue and there
25 is no reason to hold an evidentiary hearing for Contention

1 2, Basis 1.

2 To get into the merits, BCOC is reading the terms
3 "physical systems or processes" as being limited by the
4 phrase that follows -- "preferably by use of geometrically
5 safe configurations" and their brief goes through why they
6 think that this is a limitation on that language, but in the
7 Staff's brief and in the Applicant's brief, we explain why
8 that is a mere qualification. It is not a limitation.

9 The history of that provision, of GDC 62, clearly
10 shows that simply because the language in the proposed rule
11 with respect to physical systems or processes is identical
12 to that in the final rule. That wasn't changed and it
13 showed the Commission's intent from proposing the rule that
14 administrative controls would be permitted in implementing
15 those physical systems or processes to prevent criticality.

16 Even BCOC would admit that there are some
17 administrative controls that go along with geometric
18 measures for preventing criticality. If you look at
19 Appendix C, page C-3, there is the statement that placement
20 of fuel assemblies inside or outside a rack in a manner that
21 does not conform to the intended geometry of fuel placement
22 acknowledges that that is so, and Ms. Curran earlier in her
23 argument acknowledged that administrative measures are
24 required to implement even geometric safe configurations, so
25 GDC 62 just simply can't be read to prohibit the use of

1 administrative controls.

2 To go further, the distinction between ongoing
3 administrative controls and one time administrative controls
4 that BCOC makes in its brief at pages 21 to 24 are simply
5 not supported by anything in the rulemaking history or in
6 GDC 62 itself.

7 BCOC is not able to cite to a single passage of
8 the rulemaking history that would support that
9 interpretation.

10 In analyzing 10 CFR 50.68, where the Commission
11 stated that nuclear power plant licensees -- I'm sorry, I am
12 speaking about in the direct final rule in the Federal
13 Register and the Statement of Consideration, the Commission
14 stated that nuclear power plant licensees have procedures in
15 plants, have design features to prevent inadvertent
16 criticality and fuel-handling at a power reactor facility
17 occurs only under strict procedural control.

18 Well, this gets to the argument that GDC 62
19 doesn't just refer to storage but it refers to fuel
20 handling, and it is a necessity, as we explained in our
21 brief, that administrative controls have to be used in fuel
22 handling. That is evidence -- the Commission surely knew
23 that when it was promulgating GDC 62 and that should come
24 through in the rulemaking history, as we have explained in
25 the brief.

1 Do you have any more questions on the rulemaking
2 history? I would be prepared to move on.

3 JUDGE BOLLWERK: All right. Why don't you go
4 ahead and do that.

5 MR. WEISMAN: So on the merits BCOC's reading of
6 GDC 62 just doesn't fit together and we would, the Staff
7 would submit you can decide that issue, rule on it without
8 having an evidentiary hearing and should reject BCOC's
9 position.

10 JUDGE LAM: Mr. Weisman, before you move on --

11 MR. WEISMAN: Yes, Judge Lam?

12 JUDGE LAM: One of the essential things in the
13 prehearing conference and the pleadings, one of the things
14 the Intervenor had made is the Staff has somewhat under
15 pressure deliberately relaxed its enforcement and
16 regulations, and somehow I am a bit concerned about that
17 statement.

18 Do you see any, when you are reading the history
19 of the rule development, do you see any of that happening,
20 that the regulations and enforcement have been deliberately
21 relaxed because of resource pressure and time pressure and
22 industry pressure?

23 MR. WEISMAN: I do not -- I am not aware of
24 anything at all that is -- I am not aware of any pressure on
25 the Staff at all to relax its enforcement of GDC 62.

1 To go a little further, I would say that in her
2 argument today Ms. Curran did point out that GDC are --
3 they are general engineering goals. That is also something
4 that Big Rock Point stands for, and of necessity it would
5 allow for some development in the technology.

6 As the technology has developed, the Staff has
7 become confident in permitting additional ways of
8 controlling criticality. In the last 20 years, since 1980
9 approximately, we have allowed for credit for burnup. That
10 was not something that was in common use in the 1960s or
11 1971 when the GDC were promulgated, but GDC 62 allows for
12 that kind of development.

13 This might even get to one of the questions that
14 Judge Bollwerk asked the other parties, which is, well, what
15 does GDC 62 prohibit? Well, the Staff hasn't had a
16 specific proposal before it or something else that it has
17 rejected that I know of, but each of these, each of the
18 geometric configurations, boron incorporated into racks,
19 administrative controls based on enrichment and
20 administrative controls based on physical characteristics of
21 burnup we have evaluated and those are acceptable under GDC
22 62.

23 JUDGE LAM: So Mr. Weisman, you do not agree with
24 the statement Ms. Curran made that the evolution process is
25 a relaxation process?

1 MR. WEISMAN: Absolutely not. There is -- the
2 statement that the Staff is under pressure to relax its
3 requirements is something that we do not agree with.

4 JUDGE LAM: Thank you.

5 MR. WEISMAN: That's really all I have to say
6 about Basis 1 for Contention 2.

7 JUDGE BOLLWERK: All right.

8 MR. WEISMAN: I will move on to Basis 2, but
9 before I do so I would like to talk about the double
10 contingency principle and just simply explain why BCOC
11 simply misapprehends how it is supposed to work.

12 Draft Reg Guide 1.13 states the double contingency
13 principle, saying that the nuclear criticality safety
14 analysis should demonstrate that criticality could not occur
15 without at least two unlikely, independent, and concurrent
16 failures or operating limit violations.

17 In short, if an analysis is performed and it takes
18 two or more unlikely, independent events to achieve
19 criticality the double contingency principle is satisfied if
20 such a design is acceptable. It is a misapprehension to say
21 that two or more events have to cause criticality and that
22 that requires analysis of all the possible universe of
23 events.

24 So in its brief BCOC states the criticality
25 analyses must identify the sets or failures or violations

1 that might cause criticality and then evaluate these
2 failures or violations in combinations of at least two to
3 determine which combinations will cause criticality. That
4 is in their brief at page 44.

5 BCOC would have the Applicant identify all
6 combinations of events that would cause criticality and then
7 evaluate whether those events are unlikely and independent
8 under the double contingency principle -- that is, if a
9 particular event that that would cause criticality has two
10 independent unlikely events, throw it away, you're okay, but
11 if every combination of such events involves at least two
12 unlikely independent events, the double contingency
13 principle would be satisfied.

14 I might add here that I am not talking about the
15 concurrent or sequential issue. In this context, the way
16 the Staff applies this concurrent means they happen
17 together. One failure happens and before it is corrected,
18 however long that is, a second failure occurs, so that they
19 can operate together.

20 Well, what BCOC proposes is an acceptable way to
21 apply the double contingency principle. It is not the only
22 way, and that is where their misapprehension lies. They
23 think it is the only way that you can apply the criterion.

24 The other way, which the Applicant employed in
25 evaluating Pools C and D here, is to identify the worst

1 unlikely independent single events and evaluate whether they
2 result in criticality or whether they meet the Staff's
3 acceptance criteria in K equals 0.95. If they do not, but
4 at least one more unlikely independent event is needed in
5 combination with them, the double contingency principle is
6 satisfied.

7 BCOC's process is not necessary to apply the
8 double contingency principle. It is an expansion of the
9 basis to Contention 2 and it should be disregarded.

10 Now with respect to the Basis 2 as admitted, I
11 know it's been read here several times today -- I won't read
12 it again -- suffice it to say that Contention 2, Basis 2 as
13 admitted is not merely moot, as the Applicant says, but it's
14 been disproven on the merits. There is no factual dispute
15 about Basis 2 to Contention 2. There's no need to have an
16 evidentiary hearing.

17 The Applicant's analysis has shown that one
18 misloaded fuel assembly will not cause criticality. That is
19 in the application. It is analyzed in the affidavits of Dr.
20 Lawrence Kopp, Staff's witness, Dr. Stanley Turner, Dr.
21 Everett Redmond and the Licensee's witnesses. There is no
22 dispute about that analysis or about those facts. The Board
23 can reject that contention on the merits without having an
24 evidentiary hearing.

25 One other thing that there is to talk about on

1 Basis 2 is BCOC's attempt to expand that basis. As the
2 Applicant said, the Applicant set out the standards for
3 whether or not a basis to a contention can be expanded and I
4 would just add one thing from Seabrook station, which is
5 cited in our brief case, that is ASLB 947 where the Appeal
6 Board said that the bases are to put the other parties on
7 notice as to what issues they will have to defend against or
8 oppose.

9 If BCOC is permitted to continually change their
10 bases, we will be shooting at a moving target and we will
11 never know what it is that we are supposed to litigate.

12 BCOC's reformulation of Basis 2 of Contention 2 is
13 best set forth in Appendix C of its brief at C-10, and that
14 is where BCOC seeks evaluations of, quote, "a set of
15 circumstances which combine the mispositioning of two or
16 more fuel assemblies with the presence of soluble boron in
17 concentrations between zero and some level less than 2000
18 PPM. That goes far beyond the contention, the basis for
19 this contention admitted by the Board.

20 BCOC apparently believes that it is necessary to
21 evaluate such circumstances to ensure that the double
22 contingency principle is satisfied and that the Board did
23 not intend to limit litigation of how that is done.

24 But Dr. Thompson has admitted in his deposition
25 that he is not qualified to perform criticality analyses.

1 He hasn't done any analyses to show that the double
2 contingency principle is not met. BCOC simply can't show
3 that there's some kind of substantial and genuine dispute as
4 to a material issue here, so BCOC's proposed expansion is
5 beyond the scope of the original contention as admitted by
6 the Board and it ought to be rejected.

7 Now I am going to get to go through some of the
8 specific things in BCOC's brief that though they are beyond,
9 nonetheless -- beyond the scope of Basis 2, we are going to
10 talk about whether or not there are any facts in dispute
11 with respect to those statements or purported issues.

12 The first one is in the Intervenor's brief at page
13 41 they claim that experience at U.S. nuclear power plants
14 shows that fuel mispositioning involving placement in a pool
15 of one or more fuel assemblies with inappropriate burnup,
16 enrichment or age is a likely occurrence.

17 As explained in the Staff's brief, at page 8, BCOC
18 has the burden of demonstrating the existence of a genuine
19 and substantial issue of material fact. BCOC attempts to
20 support its assertion that misplacement of multiple fuel
21 assemblies is likely by reference in Appendix B to its brief
22 to several licensee event reports and events described in
23 Information Notice 94-13 and its supplement to demonstrate
24 the mispositioning is likely.

25 As Mr. Hollaway, Dr. Hollaway pointed out, not

1 all of those events have to do with fuel assemblies placed
2 in locations in the spent fuel pool racks where they are not
3 permitted. Of the others, four of them had to do with
4 placing fuel in the core, two involved calculations of K
5 effective, three involved fuel handling, two involved
6 surveillance of boron concentration of spent fuel pools, and
7 one was a boron dilution event.

8 Now only in McGuire, the LERs dealing with McGuire
9 1 and Oyster Creek were there multiple fuel assemblies. In
10 McGuire 1 there was no blank row left and 11 assemblies
11 mispositioned, but that was because at McGuire 1 there was a
12 requirement to have a checkerboard loading pattern and a
13 blank row around the checkerboard. That is not the case
14 here at Harris. There is no proposal to have a checkerboard
15 loading pattern. It couldn't happen. That kind of event
16 can't happen here at Harris.

17 BCOC hasn't even shown how such an event would be
18 likely in general at other plants, much less here in this
19 case involving Harris, so BCOC has not carried its burden to
20 show that there is a general and substantial dispute of
21 material fact with respect to mispositioning assemblies in
22 the spent fuel pool at Harris based on this event.

23 At Oyster Creek the LER states that the safety
24 analysis prepared the licensee did not take into account
25 that new fuel can conceivably be stored in a spent fuel

1 pool. A factor in this event was that procedural controls
2 were inadequate, as they stated in the LER -- refuelling
3 procedures do not require verifications to ensure compliance
4 with enrichment restrictions associated with fuel stored in
5 the spent fuel pool. That was a Oyster Creek.

6 Dr. Hollaway has already pointed you to the
7 abundant evidence that that is not the case here at Harris.
8 BCOC hasn't got any evidence in the record to show that is
9 not the case.

10 Another statement that BCOC makes is that
11 mispositioning of more than one assembly could result in a
12 supercritical configuration, potentially critical on prompt
13 neutrons alone. Again, this is a statement that BCOC hasn't
14 been able to support. There is no analysis supporting that
15 that they have submitted, and in fact this is one that the
16 Staff has analyzed and disproven. This is from Mr. Anthony
17 Ulises' affidavit where he performed an analysis to show that
18 if the entire pool were, all the racks were misloaded, an
19 infinite number of fuel assemblies put into the Pool C or D,
20 it wouldn't become critical. Now that is with 2000 PPM of
21 boron in it, but there is no reason to presume at Harris
22 that that event is in any way likely. In fact, it is wildly
23 unlikely.

24 Now BCOC has some other statements in its brief,
25 in Appendix C. We'll look at a couple of those. On page

1 C-6, BCOC suggests that, quote, "At a typical PWR" unborated
2 water could come through the component cooling water system,
3 apparently through some failure in the fuel pool cooling
4 system heat exchangers, through the demineralizer system,
5 the reactor makeup system, fire protection system, and the
6 service water system, but BCOC does not describe any of
7 these systems at Harris or what failure in those systems
8 might cause boron dilution at Harris.

9 You can look at the affidavit of Mr. Steven
10 Edwards attached to the Applicant's brief as evidence of the
11 contrary. That is the only evidence that has been submitted
12 on that issue.

13 There isn't any dispute over what the facts are at
14 Harris.

15 BCOC hasn't demonstrated any dispute of fact and
16 there need not be an evidentiary hearing because of that
17 issue.

18 Again, on page C-6 of the appendix, BCOC suggests
19 that the four pools are separated by removable gates, and
20 the water from one pool could mix with water from another
21 pool.

22 BCOC posits that, if the water from one pool had a
23 lower concentration than a second pool and the water from
24 the two mixed, the second pool would then have a reduced
25 concentration of boron, but BCOC doesn't indicate how the

1 first pool would come to have a low concentration of boron,
2 something below 2,000 ppm, as specified in the Harris
3 administrative controls, in the first place. So, how could
4 that be a boron dilution event?

5 Mr. Edwards' affidavit explains that that's not
6 going to be the case, and such an event couldn't possibly
7 result in boron concentration in any pool dropping below
8 2,000 ppm.

9 BCOC does not carry its burden to show that there
10 is a genuine and substantial issue of fact to litigate with
11 respect to that matter, and there is no need to have an
12 evidentiary hearing on it.

13 On page C-7 of the appendix, BCOC cites a
14 Westinghouse study that the staff did not approve because
15 the staff believed the study was not very valuable given the
16 variation in plant-specific designs with respect to spent
17 fuel pools.

18 BCOC concludes that that study should be viewed as
19 a lower bound, but there's no foundation for that position
20 whatsoever.

21 BCOC indicates that the plant studied is a
22 composite plant, which would mean that it would fall in the
23 middle, be a more realistic estimate, and not that it's
24 bounding in any direction.

25 Just one or two other matters that I'd like to

1 address.

2 One is this issue regarding ANSI 57.2, and that
3 standard, I'm informed by the staff, was issued before the
4 double contingency principle came out in the Grimes letter.
5 So, that standard doesn't analyze the double contingency
6 principle. That's why it might appear to hold something
7 different.

8 Another thing was that Ms. Curran had looked in
9 the Grimes letter and stated that there wasn't any accident
10 regarding fuel mis-loading to be analyzed identified in
11 there.

12 The applicants rightly pointed out that it would
13 be better to look at more recent staff guidance than older
14 staff guidance, but even if you look at the the draft Reg.
15 Guide 1.13, that includes analysis of placing a fuel
16 assembly along the outside of a rack, for instance, and
17 clearly contemplates that misplacement of the fuel assembly
18 needed to be analyzed.

19 In summary, none of the issues that BCOC raises
20 involves a genuine substantial dispute regarding material
21 fact, and there's no need to have an evidentiary hearing
22 with respect to this matter, and furthermore, on the merits,
23 we think that our briefs demonstrate that GDC 62 does, in
24 fact, allow for the use of administrative controls and that
25 basis two has been disproven.

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1025 Connecticut Avenue, NW, Suite 1014
Washington, D.C. 20036
(202) 842-0034

1 Thank you.

2 JUDGE BOLLWERK: All right.

3 Any board questions for the staff?

4 Judge Shon?

5 JUDGE LAM: I had a question, Mr. Weisman. I'd
6 like to ask you the same question I asked the applicant.

7 I hear today and also read in the intervenor's
8 plea that reliance of soluble boron should not be permitted.
9 If that interpretation is correct, then we have a dispute on
10 basis two, because the applicant had conducted analysis on
11 one misplacement of fuel bundle with different concentration
12 of boron.

13 What is the staff's view on that position, that no
14 soluble boron should be permitted?

15 MR. WEISMAN: Your Honor, there are two answers to
16 the question.

17 The first one is that the loss of the soluble
18 boron is an unlikely event. It is independent from a second
19 unlikely event, which would be the misplacement of a fuel
20 assembly.

21 There's no need to consider those two events in
22 combination to approve the analysis of criticality in the
23 spent fuel pool at Harris.

24 But beyond that, it's been analyzed -- a
25 misplacement -- a single misplacement has been analyzed, and

1 that basis was that a single misplacement could cause ,
2 criticality.

3 The supplement prepared by Dr. Redmond clearly
4 shows that a misplacement of a single fuel assembly in the
5 absence of boron -- there's no dispute about this -- will
6 not cause criticality. So, basis two has been disproven.

7 JUDGE LAM: But my understanding on Ms. Curran's
8 argument is that she thinks a K effective of .95 should be
9 upheld, and if soluble boron credit is not given, then
10 that's a different matter.

11 MR. WEISMAN: Well, the staff's guidance is to
12 maintain the spent fuel pool -- maintain K effective at .95
13 or less, but that's not necessary to satisfy GDC 62.

14 All that's necessary under the GDC is to maintain
15 it sub-critical, maintain the spent fuel pool sub-critical.
16 The staff's guidance provides margin to allow for that. The
17 staff's guidance is not a regulatory requirement.

18 And as Dr. Hollaway pointed out, 50.68 also
19 specifies how criticality should be analyzed, and if credit
20 for boron is given in 50.68, all the licensee has to show is
21 that K effective will be less than .95 with boron and less
22 than -- or equal to or less than .95 -- I'm sorry -- and
23 less than 1 without boron, and that the licensee has done
24 here, and there's no dispute about that.

25 JUDGE LAM: Right. But my question still remains.

1 Should credit be given to soluble boron, as the intervenor
2 has stated?

3 MR. WEISMAN: Maybe I'm not stating myself
4 clearly. When the staff analyzes it, it requires an
5 analysis with no boron in the spent fuel pool. The credit
6 for boron is allowed under accident-type conditions.

7 Under normal conditions, we don't give credit for
8 boron, because we're anticipating maybe there's going to be
9 an accident, okay?

10 If the normal conditions are clearly sub-critical,
11 without boron, that's one part of the staff's analysis.
12 Then when we analyze each of the individual unlikely
13 accidents, unlikely -- in particular, unlikely here at
14 Harris -- that's when we allow credit for boron.

15 Am I answering your question?

16 JUDGE LAM: Yes, you have. Thank you.

17 JUDGE BOLLWERK: Anything else?

18 Ms. Curran, let me ask you, how long do you think
19 you've got?

20 MS. CURRAN: Ten or 15 minutes.

21 JUDGE BOLLWERK: All right. I don't want to cut
22 you off because you're starving to death, but on the other
23 hand, I would like to get the contention done. So, if you
24 think you can do it in 15 minutes --

25 MS. CURRAN: I might cut me off because I'm

1 starving to death.

2 JUDGE BOLLWERK: Well, if you think you can do it
3 in 15 or 20 minutes, why don't we go ahead and do it then?

4 MS. CURRAN: Okay.

5 I'm going to go through these in the order that I
6 heard them, so I'm afraid they might not be in the most
7 logical order.

8 There's been a lot of discussion here about what
9 Dr. Thompson has conceded or not conceded with respect to
10 the relationship between administrative and physical
11 measures, and I'd like to refer the board to page 52 of his
12 deposition, as which he says, "Reliance upon burn-up and
13 enrichment credit is not a physical provision, because it
14 involves administrative actions which, if correctly
15 executed, invoke a physical principle."

16 I think that's a good way of looking at the
17 distinction between administrative and physical measures,
18 that of course it's a physical characteristic that a fuel
19 assembly has a high burn-up level, but it requires an
20 administrative action by a human being to put that high
21 burn-up fuel assembly in the right place in the spent fuel
22 pool, in other words to invoke its physical characteristic.

23 We still have a significant dispute with the
24 applicant on the difference between the physical system and
25 process and administrative measure.

1 We also believe that, in terms of the regulatory
2 history of GDC 62, there is nothing in the regulatory
3 history to indicate that the change from the draft GDC to
4 the final GDC was a mere administrative clarification and
5 not a substantial change to the language of the regulation.

6 I'd like to look at section 50.68(b)(4), which the
7 applicant has -- counsel for the applicant has argued
8 supports the view that the Commission has expressed an
9 intent to permit administrative measures in preventing
10 criticality.

11 The first thing I want to point out is that, as
12 discussed in our summary on page 30, I believe, and 29, the
13 preamble to section 50.68 makes it quite clear that the
14 Commission continues to adhere to the requirement of 50.68
15 for physical systems or processes for criticality control,
16 and that is one of the reasons why, apparently, the
17 Commission feels comfortable promulgating this regulation.
18 So, I would refer the board to the text of the preamble as
19 quoted on page 30 of Orange County's summary.

20 In addition, there is nothing in the language of
21 (b)(4) which indicates that the Commission intended to allow
22 credit for burn-up.

23 The phrase -- there's a sentence in here that
24 says, "If credit is taken for soluble boron, the K effective
25 of the spent fuel storage racks loaded with fuel of the

1 maximum fuel assembly reactivity must not exceed 0.95,"
2 etcetera, "if flooded with borated water."

3 This reference to maximum fuel assembly
4 reactivity, according to Mr. O'Neill, somehow refers to the
5 maximum fuel reactivity under burn-up control conditions.
6 There's nothing in the preamble to the rule that would
7 indicate that.

8 The way we interpret the rule is that it's
9 referring to the maximum possible reactivity that could be
10 in the pool, in the plant.

11 I would like to create my mistaken statement that
12 the Big Rock decision was decided by the licensing board.
13 I'm sorry, I was confused. It was an appeal board decision.
14 Again, for the reasons that I stated earlier, we do not
15 believe that this decision is controlling here.

16 It's important to point out that neither CP&L nor
17 the NRC staff has been able to identify some category of
18 measures for the prevention of criticality that would be
19 excluded by GDC 62.

20 In their view, it is clear -- as they've explained
21 their view, it is clear now that, as far as they are
22 concerned, GDC 62 encompasses the universe of criticality
23 prevention measures that one might come up with, and this is
24 an interpretation that deprives GDC 62 of any meaning.

25 I'd like to respond to a question from one of the

1 board members about what other physical criticality
2 prevention control measures the Commission might have had in
3 mind when it used the language -- the word "preferably," you
4 know, why it sort of left open what kinds of methods might
5 be used.

6 In footnote 13 of our summary, we discuss some
7 exploratory work that was done in various types of
8 criticality prevention measures that was never really
9 followed up on and seems to have been abandoned.

10 We certainly don't know what the Commission --
11 whether the Commission was contemplating those, but this
12 study was done in 1980, so it may have been that the
13 Commission was aware that there were other potential
14 physical measures being evaluated at the time.

15 Both CP&L and the staff have argued that Orange
16 County's recommended interpretation and application of the
17 double contingency principle -- the method that Orange
18 County advocates for evaluating criticality prevention
19 measures under this standard is unreasonable and that it's
20 appropriate to use more of a single failure-type analysis.

21 This really -- their position -- we have very
22 thoroughly described why we believe the double contingency
23 principle needs to be interpreted the way we advocate, and
24 that's in Appendix A, and I think it also may be in Appendix
25 C to our summary, but I'd just like to leave the board with

1 this question, and that is, if the double contingency ,
2 principle is really a single contingency principle, what do
3 the words "at least" mean as they're used in that standard?

4 No one has offered an explanation for what that
5 means.

6 In our view, it means that some attempt has to be
7 made to determine what is the envelope of criticality
8 accidents that one needs to be concerned about in evaluating
9 the adequacy of criticality prevention design.

10 Both the NRC staff and CP&L have attempted to
11 discount the examples that Orange County has provided in
12 Appendix B of its summary of incidents where, due to the
13 failure of administrative measures, there's been
14 misplacement of fresh fuel assemblies or boron dilution
15 events.

16 It's important to note here that the burden is not
17 on the intervenor for showing the high likelihood of a fresh
18 fuel assembly misplacement.

19 The burden is on the applicant of demonstrating
20 that such an event is so unlikely that it doesn't need to be
21 considered in the normal course of events and that it can be
22 evaluated in compliance with NRC guidance as an unlikely
23 event.

24 It's very clear on this record that CP&L has not
25 attempted to do this. CP&L simply assumes that misplacement

1 of a fuel assembly is an unlikely event. It is not a part
2 of this license application to -- they have made no attempt
3 to demonstrate that low likelihood.

4 Orange County has put into evidence records which
5 show that the assertions about the unlikelihood of this type
6 of event that have been made by CP&L and the staff are not
7 supported by operator experience at nuclear power plants.

8 We've put the issue into contention and it's the
9 burden of the applicant that, indeed, the incidents are very
10 unlikely.

11 In his argument, Mr. Hollaway mentioned a number
12 of measures that CP&L proposes to take to ensure that fresh
13 fuel will not be placed in the wrong location in spent fuel
14 pools C and D, and he repeatedly referred to these as
15 physical measures.

16 Just want to point out that all of those measures
17 are administrative measures. They require human action.
18 They're not physical.

19 It's been argued here that a 1998 memorandum by
20 the NRC staff is equivalent of better guidance than the
21 Grimes memorandum in evaluating CP&L's compliance with NRC
22 staff guidance for the implementation of GDC 62.

23 As we have previously stated, the Grimes
24 memorandum, the Grimes letter, is the most -- is the
25 document that was issued closest in time, the most

1 contemporaneous piece of NRC staff guidance in relation to
2 GDC 62, and therefore, it has -- it should be given the most
3 weight as far as its value for shedding light on the
4 Commission's intent in promulgating GDC 62.

5 Mr. Hollaway also argued that the ANSI standard
6 is not an enforceable requirement. This is the ANSI
7 standard 57.2.

8 Industry guidance, NRC regulatory guides are tools
9 for demonstrating compliance with regulations.

10 They are considered that if -- it's considered
11 that, if a licensee chooses to comply with an industry or
12 NRC regulatory guidance document, that that's generally --
13 the staff generally accepts that as adequate to comply with
14 the regulations unless the applicant wants to differ with
15 the guidance and then must explain itself.

16 In this case, the applicant has said we are going
17 to comply with this ANSI standard. That is the path the
18 applicant has chosen.

19 In order to comply with the standard, then the
20 applicant ought to be held to what it's committed.

21 I believe there was a question as to whether Reg.
22 Guide 1.13 prohibits the use of soluble boron, and I'd like
23 to refer you to page 7 of Orange County's summary, which
24 discusses the fact that section 5.2 of Appendix A to the
25 draft reg. guide states that "The presence of soluble boron

1 can be regarded as a realistic initial condition under,
2 certain accident conditions, namely those associated with
3 condition 4 faults."

4 Those faults are not defined in the reg. guide,
5 but we assume they correspond to the conditions in the ANSI
6 standard.

7 NRC staff counsel referred to the Ulises'
8 criticality analysis in which it was hypothesized that an
9 entire rack of fresh fuel was placed into the spent fuel
10 pool.

11 It's important to point out that the Ulises
12 analysis assumes that there is boron present in the water in
13 order for this scenario to remain sub-critical.

14 If no boron in the water -- were present in the
15 water, then the misplacement of the multiple fuel assemblies
16 would cause criticality, and the criticality level would be
17 1.2.

18 In response to a question from the board, the NRC
19 staff counsel asserted that there is no need to consider the
20 loss of boron, because it's unlikely.

21 Again, this is contrary to the guidance which the
22 staff has advocated be applied to CP&L and which the staff
23 has adopted as its own, and I would refer you to paragraph
24 14 of the Kopp affidavit, that if the staff is going to
25 adopt this guidance, then it has to apply it consistently.

1 Finally, I have one more point, and that is that,
2 if CP&L wishes to invoke section 50.68(b)(4) as applicable
3 to it, it's worth noting that, under that requirement, if no
4 soluble boron credit is sought in normal conditions, then
5 the K effective must be below .95. If soluble boron credit
6 is sought, then K effective must be below 1, if no soluble
7 boron is present.

8 If we assume that what the Commission means by
9 maximum reactivity level in the regulation -- if we assume
10 that means the maximum possible reactivity level -- in other
11 words, that the fuel is fresh -- then CP&L would exceed the
12 criticality levels.

13 The Ulses memorandum shows that they're
14 super-critical at 1.2, assuming the presence of fresh fuel
15 and no soluble boron.

16 JUDGE BOLLWERK: I have a question. Are you
17 finished?

18 MS. CURRAN: That's it.

19 JUDGE BOLLWERK: All right.

20 This question about burden of proof that you've
21 posed -- CP&L had the burden, I guess. This goes to your
22 point that they need to do a PRA, basically?

23 MS. CURRAN: If CP&L -- under the regulatory
24 guidance, CP&L has to somehow demonstrate that misplacement
25 of single or, in our view, multiple fuel assemblies is an

1 unlikely event, because that's what the guidance calls for
2 the consideration of.

3 If you're going to include that as one of your --
4 of the events that you consider, you have to first determine
5 that it's unlikely, that it's concurrent with something else
6 and independent, but I'm focusing here on the likelihood.

7 So, it's up to CP&L to somehow justify that
8 determination, rather than merely assuming it.

9 JUDGE BOLLWERK: All right.

10 Judge Lam, do you have anything?

11 JUDGE LAM: Yes, Ms. Curran. I'd like to re-plow
12 the same ground again.

13 I hear you say again 0.95 should be the
14 criticality the applicant should meet when there is a
15 misplaced fuel bundle coupled with no boron. On what basis
16 do you make that statement?

17 MS. CURRAN: I say it on the basis of the NRC
18 regulatory guidance to which the applicant has bound itself
19 in its license application, in its license amendment
20 application.

21 JUDGE LAM: Can you be more specific? Because I
22 just hear from staff counsel saying, if the applicant has to
23 do that analysis of one misplacement of fuel bundle coupled
24 with loss of total soluble boron, all they need to do is
25 meet the GDC 62, which is criticality, which is K effective

1 1.0.

2 Now, I hear you are saying no, they should be held
3 to a higher standard of K effective of 0.95.

4 MS. CURRAN: We are simply putting forth the NRC's
5 own regulatory guidance for evaluating these accident
6 analyses. The NRC staff builds in various margins to these
7 accident analyses, and that is one that has been built in
8 here.

9 JUDGE LAM: I'd like to ask you to be more
10 specific as to which guidance are you referring to.

11 MS. CURRAN: All right. I'm referring to the
12 Grimes letter, which is the 1978 letter. Would you like the
13 exhibit number?

14 JUDGE LAM: Yes, please.

15 MS. CURRAN: It's Orange County Exhibit 2.

16 Also, draft Reg. Guide 1.13, which is Orange
17 County Exhibit 3.

18 I also referred in my argument to a section of ANS
19 standard 57.2, which we have not attached. It's a
20 copyrighted document. That's the standard that has .95 with
21 a maximum outside level of .98.

22 JUDGE LAM: Thank you.

23 MS. CURRAN: So, there's three right there.

24 JUDGE LAM: Thank you.

25 JUDGE BOLLWERK: Anything else, Judge Lam?

1 Judge Shon?

2 JUDGE SHON: No, nothing.

3 JUDGE BOLLWERK: All right.

4 At this point, it's 20 minutes after one. Why
5 don't we go ahead and break, then, till two o'clock, and
6 we'll reconvene at that point and deal with contention TC-3,
7 dealing with the quality assurance question.

8 Thank you very much.

9 [Whereupon, at 1:20 p.m., the hearing was
10 recessed, to reconvene at 2:00 p.m., this same day.]

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

A F T E R N O O N S E S S I O N

[2:03 p.m.]

1 JUDGE BOLLWERK: We're back on the record.

2
3 Could I ask someone in the back maybe to close
4 that door back there, if you would, just so we'll avoid the
5 hall noise.
6

7 All right.

8 Why don't we go back on the record after our
9 afternoon lunch break?

10 I think there were a couple of clarifying
11 questions perhaps some of the board members had.

12 I'll start with Judge Shon.

13 This is on contention two.

14 JUDGE SHON: I see that Dr. Thompson is no longer
15 here, but Ms. Curran, you made mention twice, right at the
16 end, of a multiplication factor of 1.2, and I just wanted to
17 fix exactly in my head exactly what circumstances that
18 involved.

19 I was assuming it meant fresh fuel everywhere and
20 no boron. Is that right?

21 MS. CURRAN: Yes.

22 JUDGE SHON: That's all I wanted to know.

23 JUDGE BOLLWERK: Judge Lam, did you have anything?

24 Okay.

25 I had, actually, two questions, which were

1 actually for the applicant and the staff, and given their
2 response, I'll obviously allow you an opportunity to say
3 something, as well, depending on whatever they have to say.

4 Ms. Curran raised two points, I guess, I wanted
5 to review with you.

6 First, there's a question of the burden in terms
7 of likelihood. The regulation says it needs to be unlikely,
8 that various guidance says it needs to be unlikely.

9 Her assertion is this unlikeliness in terms of
10 either the movement of the fuel or the boron, lack of boron,
11 are basically assumptions that people have made over the
12 years, that there's really no support for this in terms of
13 the likelihood or unlikelihood.

14 Would you like to address that, Mr. O'Neill or
15 Mr. Hollaway, whichever is appropriate.

16 MR. HOLLAWAY: Would you summarize your question
17 again, make sure I'm addressing the right question.

18 JUDGE BOLLWERK: Okay.

19 Ms. Curran basically said one way to look at it
20 as the burden of proof, that the regulation says that the
21 only thing that we are concerned about are unlikely events,
22 or what we're focusing on are unlikely events, and that
23 apparently a loss of boron or some kind of misplacement of
24 the fuel rods are unlikely events.

25 At least that seems to be the assumption everyone

1 is working under.

2 Is that an assumption, or is there something more
3 to it that backs that up in terms of studies, whatever? I
4 guess that's my question to you.

5 MR. HOLLOWAY: Two things about that.

6 First of all, in the contention as it was admitted
7 and when it was proposed, there wasn't any discussion about
8 how likely is dilution of soluble boron or how likely is
9 misplacement of an assembly, in the contention as it's
10 written.

11 That's why we didn't perform a lot of discovery
12 and go on ad nauseam in our filing about likelihood.
13 However, we have certainly provided the information to
14 address that.

15 Now, if your question is, are there generic
16 studies showing whether something is likely or unlikely, I'm
17 not immediately aware of any. I don't know that aren't any.
18 I don't know that there are any.

19 However, the issue in hand here would be not
20 generic conditions but conditions specifically at Harris,
21 and if the question is one of -- assuming this was actually
22 part of the admitted contention, the burden would be on them
23 to show need for an adjudicatory hearing if there was a
24 contention that said we contend that it is likely that boron
25 dilution will occur such that there will be loss of all

1 boron.

2 Then, ultimately, to win the condition, the burden
3 would be on us.

4 I believe that we have, in fact, anticipated some
5 of the issues they would raise and put more than enough
6 Harris-specific material both for boron dilution and fuel
7 assembly misplacement to more than meet our burden, in
8 addition to the fact that the things we've put in have not
9 been controverted, really, at all, on a Harris-specific
10 basis.

11 So, if it were an admitted contention, the basis
12 would likely be on us to show that we had met that
13 contention.

14 I believe that, in fact, in our filing, we have
15 provided the Harris-specific information to do that.

16 JUDGE BOLLWERK: All right.

17 Anything the staff wants to say on that issue?

18 Mr. Weisman?

19 MR. WEISMAN: I think that we would agree that the
20 burden is on the licensee on the merits of that question, as
21 Dr. Hollaway stated, but with respect to whether or not
22 there should be an evidentiary hearing to show that there is
23 some genuine and substantial material fact in issue, the
24 burden would be on the -- on BCOC, and as we've said, there
25 isn't anything in their filing to show that there is such a

1 dispute, and that's even -- we would also say that -- ,
2 whether or not there are likelihood of those events, that
3 goes beyond the original contention, as well.

4 So, essentially, we're agreeing with the licensee
5 on that score.

6 JUDGE BOLLWERK: All right.

7 Ms. Curran, is there anything further you want to
8 say on the subject?

9 MS. CURRAN: No.

10 JUDGE BOLLWERK: All right.

11 Let me raise one other brief question, then.

12 She also made the point that on one's explained
13 the use of the two words "at least" in GDC 62 and exactly
14 what that means, and I'll give you an opportunity now to say
15 anything you want on that subject.

16 MS. CURRAN: Excuse me, Judge Bollwerk. I was
17 referring to the double contingency principle.

18 JUDGE BOLLWERK: I'm sorry. The double
19 contingency, yes. I apologize.

20 MR. HOLLOWAY: Yes, I'll happily address that.

21 Originally, as written, the double contingency
22 principle said that, in effect, you do not need to show
23 sub-criticality for conditions involving two unlikely
24 independent accident conditions taken together or
25 concurrently.

1 So, you did have to show sub-criticality for one
2 unlikely independent accident condition, along with normal
3 operating conditions, but you didn't have to show it for
4 two.

5 The implication is you didn't have to show it for
6 three, four, five, six, seven, eight, nine, 10, or more, has
7 always been the implication, and when it went to at least
8 two, at least two -- I think any reading of that would be
9 two, three, four, five, six, or more, and all that's saying
10 is what it's always been understood to mean, is that you
11 don't have to show sub-criticality for two, three, four,
12 five, six.

13 That's what "at least two" means, and the change
14 from two to at least two -- the implication was always the
15 same.

16 JUDGE BOLLWERK: All right.

17 Anything the staff wants to say on that subject?

18 MR. WEISMAN: I think that Dr. Hollaway is
19 correct. Simply, it means that the applicant does not have
20 to consider two or more events that, if they're unlikely and
21 independent, would, taken collectively, cause criticality.
22 Two or more need not be considered.

23 JUDGE BOLLWERK: All right.

24 JUDGE SHON: In other words, you're saying that,
25 if you have demonstrated that, for any one unlikely event,

1 you're sub-critical, then it would take at least two to make
2 it critical.

3 MR. WEISMAN: Correct. Or more.

4 JUDGE BOLLWERK: All right.

5 JUDGE LAM: That is the classical single failure
6 criteria.

7 So, my question to Mr. Weisman is that is the
8 classical definition of single failure criteria, isn't it?

9 MR. WEISMAN: It's actually not identical to this
10 single failure criterion. It's a little bit stricter.
11 Single failure criterion would be to analyze components in
12 the system, find the worst possible failure, and see if the
13 system still performs its safety function.

14 Here, we're not postulating that one component in
15 the spent fuel pool will break and thereby cause some boron
16 dilution. We're assuming the dilution happens to begin
17 with.

18 So, in that sense, we're assuming the condition to
19 begin with for the purpose of the analysis.

20 The double contingency principle is, in fact,
21 stricter than the single failure criterion. It's not
22 identical.

23 JUDGE BOLLWERK: All right.

24 Mr. Hollaway, do you want to say something?

25 And Ms. Curran, I'll allow you an opportunity to

1 respond.

2 MR. HOLLAWAY: Just briefly, I will point out Dr.
3 Stanley Turner, who has been doing criticality analyses
4 since 1957, informed me and stated under oath and is filing
5 an affidavit that's in here, that in common parlance, the
6 double contingency principle is frequently referred to as a
7 single failure criterion.

8 JUDGE BOLLWERK: All right.

9 Ms. Curran, anything you want to say further on
10 the subject?

11 MS. CURRAN: One moment.

12 JUDGE BOLLWERK: Okay.

13 MS. CURRAN: I would just refer the board again to
14 our Appendices A and C. I think we explain there adequately
15 our view of the principle.

16 JUDGE BOLLWERK: All right.

17 At this point, unless any of the other board
18 members has anything else on contention two, I think we're
19 ready to move on to contention three.

20 Just for planning purposes -- and you were fairly
21 accurate the first time around, actually. You only took
22 about five minutes more than what you thought you were. So,
23 do you have a sense of how long your argument, at least your
24 initial argument, is going to take?

25 MS. CURRAN: Not as long, but I can't tell you.

1 JUDGE BOLLWERK: All right. But under an hour, it
2 sounds like.

3 MS. CURRAN: Yes.

4 JUDGE BOLLWERK: All right. Okay. All right.

5 Do you wish to address the question about Mr.
6 Lochbaum first?

7 MS. CURRAN: Yes.

8 JUDGE BOLLWERK: All right.

9 MS. CURRAN: Actually, I have a couple of
10 preliminary --

11 JUDGE BOLLWERK: All right.

12 MS. CURRAN: -- issues to address.

13 The first thing that I'd like to bring up is
14 really to put the board on notice of a concern that has come
15 up for the county regarding whether the scope of equipment
16 that has not been kept in an appropriate lay-up condition at
17 Harris over the last 15 or so years is broader than the
18 scope of equipment as defined in Orange County's contention.

19 In the contention that was filed by Orange County
20 last spring, Orange County noted that there was a lack of
21 clarity as to whether the equipment that had not been
22 properly put in lay-up was restricted to just piping and
23 welds or whether it also included other equipment such as
24 heat exchangers, and during the pre-hearing conference, Mr.
25 O'Neill stated that the other equipment such as heat

1 exchangers and pumps either had been kept in proper lay-up
2 condition or had been replaced, and on the basis of his
3 statement, when the county was asked to re-draft or consider
4 whether to accept CP&L's re-wording of the contention --
5 this was after the pre-hearing conference -- Orange County
6 dropped that aspect of the contention which referred to
7 equipment other than the piping and welds.

8 The inspection report that was issued by the NRC
9 staff at the end of December now indicates that, in fact,
10 other equipment such as heat exchangers, valves, and
11 electrical equipment was not kept in an appropriately
12 laid-up condition, and the staff is actually planning an
13 inspection for later this month to look at that equipment.

14 Orange County is concerned that it relied on Mr.
15 O'Neill's representation and dropped a part of the
16 contention that it should be restored, and we are planning
17 to file a request for an amendment of the contention to seek
18 restoration of that part of the contention that was dropped.

19 JUDGE BOLLWERK: All right. When are you planning
20 on doing that?

21 MS. CURRAN: Sometime in the very near future.

22 JUDGE BOLLWERK: All right. You said you had
23 several preliminary matters. That was one of them.

24 MS. CURRAN: Right. Okay.

25 The next one is the -- CP&L's argument that the

1 county has impermissibly expanded the scope of contention
2 TC-3 by arguing that CP&L may not be granted an operating
3 license amendment until the terms of a new or amended
4 construction permit are approved and until the construction
5 is completed in conformance with the construction permit and
6 the regulations.

7 Orange County is not adding a new issue to this
8 contention, is not expanding the contention.

9 As the contention was admitted by the board, the
10 contention questions CP&L's compliance with Appendix B of
11 Part 50 during the last 15 or more years when the equipment
12 sat idle and was not in use and the effect of that
13 non-compliance on CP&L's ability to meet Appendix B today.

14 When the board admitted the contention, it stated,
15 "It is clear from the positions of all the participants that
16 some of the piping and equipment have not been properly
17 stored and proper records regarding its quality during that
18 period have not been maintained. Whether such storage and
19 maintenance are necessary as a matter of law and fact is
20 clearly a subject of dispute among the participants. The
21 argument concerning this point is not a simple one, nor do
22 we have material on which we can rely to determine the
23 matter."

24 So, the board recognized that the applicability of
25 Appendix B in this case is a question that is at the heart

1 of this contention and is somewhat complex.

2 NRC regulations provide that the review of this
3 license amendment application must be guided by the same
4 considerations that would govern the initial issuance of a
5 license or a construction permit to the extent applicable
6 and appropriate.

7 The legal significance of CP&L's non-compliance
8 with Appendix B fits into this framework.

9 Section 50.92 of NRC regulations, Part 10,
10 requires an answer to the question, "To what extent is the
11 applicability of Appendix B at the construction permit and
12 operating license stage also relevant at this stage?"

13 Appendix B has to be looked at through this
14 regulatory framework in order to understand the manner in
15 which it applies and the significance of CP&L's
16 non-compliance.

17 It also has to be borne in mind that CP&L's
18 position since the inception of this case has been that its
19 past non-compliance with Appendix B is basically a non-issue
20 because all the parties agree that Appendix B was not
21 complied with in the past.

22 CP&L's position in its response to Orange County's
23 contentions was that, once construction on the Harris unit
24 two spent fuel cooling system is completed and the system
25 and spent fuel pool C and D are commissioned and placed into

1 service, the spent fuel cooling system must meet the ,
2 requirements of 10 CFR, Part 50, Appendix B. The past,
3 according to CP&L, was a blank that didn't need to be filled
4 in.

5 The NRC staff, in its summary, also asserts that
6 CP&L does not have to demonstrate compliance with Appendix B
7 during the period in which the piping lay idle. This is at
8 page 52 of the staff's brief.

9 The staff claims that the only relevance of
10 Appendix B is prospective.

11 The staff is trying to depict this story as a
12 Sleeping Beauty fairy-tale, that CP&L went to sleep for 15
13 years, has now awoken, has been kissed by the prince, and
14 the intervening years disappear.

15 The purpose of our legal argument, laying out the
16 legal framework that has to be followed for the issuance of
17 an operating license amendment in this case, and tracing
18 that back to what was required for construction and the
19 interval between construction and operation is key to our
20 being able to controvert the staff's legal theory about the
21 irrelevance of Appendix B during those intervening years.

22 There is nothing about this aspect of our summary
23 that is inconsistent with or outside the scope of contention
24 TC-3.

25 JUDGE BOLLWERK: So, if I hear what you're saying,

1 the reason you're raising this is because of the approach
2 the staff took?

3 MS. CURRAN: In part. In part because -- well,
4 three things.

5 Partly because the board recognized that the
6 applicability of Appendix B is a legal issue here; second,
7 because CP&L has essentially attempted to evade the question
8 of the applicability or significance of non-compliance with
9 Appendix B during the years that the piping remained idle;
10 and C, the NRC staff has affirmatively stated that it's
11 irrelevant, that it doesn't matter that CP&L did not comply
12 with Appendix B.

13 So, the purpose is to show it does matter. As a
14 matter of fact, it's a prerequisite to CP&L being able to
15 get an operating license amendment here.

16 JUDGE LAM: Ms. Curran, are you saying the
17 Commission's regulation 50.55(a) should not apply here? Is
18 that what you are saying? Because 50.55(a) does permit an
19 alternative plan to Appendix B.

20 MS. CURRAN: The alternative plan to Appendix B
21 that is contemplated by 50.55(a) -- what the applicant is
22 seeking there is an exception for the piping pedigree, that
23 the original quality assurance documentation for the
24 construction of various welds was lost.

25 Now, whether that's sufficient is not -- the

1 county has not submitted evidence on the adequacy of the
2 piping pedigree plan -- the plan, in other words, to
3 compensate for the fact that CP&L discarded the documents
4 showing that the welds were done adequately and by qualified
5 personnel.

6 The issue of whether equipment has been maintained
7 and stored in compliance with Appendix B to 10 CFR, Part 50,
8 is a separate question, and the regulations show clearly
9 that, in order to -- supposing that CP&L had not abandoned
10 the piping for spent fuel C and D, that it had maintained a
11 quality assurance program for that piping since the time of
12 construction, CP&L would be coming in to the NRC and saying
13 we have a quality assurance program for this piping, we have
14 a valid construction permit, we have followed the
15 requirements of the QA program in the construction permit
16 that demonstrate this equipment is still in a good
17 condition, as it was when we built the plant, but CP&L
18 walked away from that. It abandoned that piping and
19 equipment.

20 So, where does that leave CP&L today?

21 CP&L is coming into this proceeding seeking an
22 operating license amendment for a system that, as a legal
23 matter, does not exist, because there is no valid
24 construction permit that covers it.

25 CP&L has tried to skip an essential important step

1 in getting permission to put the spent fuel cooling system
2 for pools C and D into service.

3 That step is to show -- having abandoned its
4 initial construction permit, is to reconstruct a new
5 construction permit, to reestablish a new construction
6 permit application, to get it approved, and then to build
7 and complete the system in conformance with the construction
8 permit and then to seek an operating license amendment that
9 would allow it to put that equipment into service.

10 But if CP&L chooses not to go that route -- we're
11 not saying they have to do that.

12 We're just saying, if CP&L chooses not to do that
13 and cannot come in to the NRC staff and say we have
14 equipment here that has been built in accordance with a
15 valid construction permit and has been maintained over the
16 years in conformance with that permit, then CP&L has no
17 grounds for seeking amendment of its operating license, and
18 that's the end of it.

19 Shall I go on?

20 JUDGE BOLLWERK: Yes.

21 MS. CURRAN: I'd like to address the NRC staff's
22 challenge to Mr. Lochbaum's qualifications.

23 The staff claims that Mr. Lochbaum should be
24 disqualified as an expert witness and that his testimony
25 should be limited or stricken.

1 This is based on Mr. Lochbaum's statement in his
2 deposition to the effect that he is not an expert in any of
3 the particular fields of materials science, corrosion of
4 materials, stress analysis, failure analysis, causes of
5 degradation of stainless steels or probability and
6 statistics as applied to engineering design.

7 It is also based on his statement that he does not
8 have experience as a construction engineer or welding
9 engineer and that he has limited experience in quality
10 assurance and quality control.

11 Actually, he did not state that his experience is
12 limited; the staff characterizes it this way.

13 The staff's argument should be rejected.

14 Mr. Lochbaum is a very experienced nuclear
15 engineer with over 17 years of experience in the nuclear
16 industry.

17 His resume, which is attached to Orange County's
18 contentions, shows that he has been responsible for numerous
19 aspects of nuclear power plant operation and has both
20 developed and supervised the implementation of nuclear power
21 plant procedures.

22 He's generally familiar with the design and
23 operation of nuclear power plants.

24 Mr. Lochbaum's testimony is based on his
25 generalized expertise in nuclear power plant design and

1 operation.

2 He is qualified to examine CP&L procedures and
3 evaluate whether they are comprehensive enough to cover the
4 goals of a particular program.

5 He is qualified to evaluate whether the procedures
6 were implemented thoroughly or whether some steps were left
7 out.

8 He is qualified to testify regarding the general
9 characteristics of microbiologically-influenced corrosion
10 and the measures that are needed to detect and prevent it.
11 He is qualified to comment on whether such measures were
12 implemented at Harris.

13 Mr. Lochbaum would not be qualified to look at a
14 videotaped inspection of a weld and say what he was looking
15 at constituted corrosion, but he is qualified to say that if
16 a CP&L procedure specifies that CP&L must examine certain
17 factors or certain characteristics of the piping during the
18 inspection, and if the procedure specifies that CP&L must
19 make a record of observations that it makes, including
20 observations of foreign material that it identifies in a
21 videotaped inspection, and if Mr. Lochbaum hears the
22 narrator of the videotaped inspection comment that foreign
23 material was noted, he is qualified to comment if CP&L does
24 not follow its procedures for addressing the presence of the
25 material when it was seen.

1 He is also qualified to comment that if CP&L says
2 in its procedure that it's going to look at some particular
3 part of a pipe, whether or not the videotape inspection
4 actually looks there.

5 So in summary, Mr. Lochbaum is not asserting here
6 that he has the expertise of someone whose specialty is the
7 detail of something like corrosion or being able to evaluate
8 the -- what the appearance of certain kind of granules on a
9 pipe means in terms of what -- whether it's
10 microbiologically-influenced corrosion.

11 But he does have the experience, as someone who
12 has participated extensively in the operation and oversight
13 of nuclear power plant operations, to compare a procedure
14 and what was done and to evaluate whether the procedure,
15 first of all, covers all the bases of the program, as it's
16 laid out, and then whether the procedure was implemented
17 such that the various steps of the procedure were observed.

18 He is highly qualified to do that and he's done
19 that before in his work.

20 The staff also incorrectly discounts Mr.
21 Lochbaum's experience in quality assurance and quality
22 control. Mr. Lochbaum, as he states in his deposition, has
23 evaluated non-conformance reports written against products
24 and services for a nuclear plant to ensure that they were
25 resolved and dispositioned adequately.

1 He wrote procedures for the conduct of an
2 independent audit by a safety and engineering group at a
3 nuclear plant. He participated in a power upgrade project
4 at the Susquehanna plant that involved evaluating systems
5 for assuring that the licensee could meet all NRC
6 requirements after the power up-rate.

7 He has been a shift technical advisor and a
8 reactor engineer and he has been involved with spent fuel
9 design and operation. He has also worked at a nuclear power
10 plant during construction.

11 Mr. Lochbaum clearly possesses the level of
12 expertise that is needed to make the technical and factual
13 assertions that are made in Orange County's summary.

14 JUDGE BOLLWERK: All right. Anything additional
15 on that?

16 MS. CURRAN: Not on the qualifications issue.

17 JUDGE BOLLWERK: All right. Any questions from
18 the Board members at this point? No. All right.

19 MS. CURRAN: Okay. As I mentioned before, the
20 legal framework in which Orange County makes its evidentiary
21 presentation here is -- concerns the applicability of
22 Appendix B throughout the period between when a plant is
23 built and when it goes into operation.

24 In this case, the Harris plant was partially --
25 the spent fuel cooling system for the Harris plant for Units

1 2, 3 and 4, was partially built and completed in the early
2 1980s, but was abandoned at that point when CP&L canceled
3 those three units.

4 Sometime in the early '80s, CP&L decided to drop
5 its construction permit for the cooling systems for pools C
6 and D and to walk away from not only the construction
7 permit, but the quality assurance program, and this has
8 great legal significance with respect to how Appendix B
9 applies here, because Appendix B, as it's set forth in 10
10 CFR, is a cradle-to-grave requirement.

11 It goes into motion, it goes into force when the
12 applicant receives a construction permit, and the applicant
13 makes a commitment to comply with Appendix B throughout
14 construction, between construction and operation, and until
15 the plant ceases to operate. There is no interruption in
16 the applicability of Appendix B during this entire period.

17 Here, there was a 15-year, at least a 15-year
18 lapse between the time when CP&L abandoned its quality
19 assurance program for pools C and D spent fuel cooling
20 system and the time when it decided to seek an amendment to
21 the operating license.

22 Because it abandoned the quality assurance program
23 for that equipment, CP&L is unable to demonstrate that it
24 has taken the measures required by criterion 13 of Appendix
25 B, which is to maintain equipment in a properly laid-up

1 condition, to ensure that it does not corrode or degrade.

2 CP&L is simply unable to make that demonstration
3 and there is no factual dispute about that. That is
4 conceded.

5 It's also undisputed that CP&L did not, during
6 that time, make any attempt to rectify any problems that
7 occurred in this piping and equipment that would be required
8 by criterion 16.

9 So it is clear on the record that this license
10 application, this license amendment application does not
11 include a demonstration that Appendix B has been satisfied
12 throughout the period since construction up until the point
13 when an operating license amendment is sought. As a result,
14 CP&L is simply not eligible for an operating license
15 amendment.

16 This isn't just a -- this isn't something that the
17 NRC requires out of habit or spite. It's something that is
18 required to ensure that the quality assurance, the adequate
19 quality assurance that -- with which a permittee started
20 construction of a nuclear plant continues throughout the
21 life of the nuclear plant.

22 It simply isn't permissible to allow part of the
23 as-built system in the plant to lapse into a neglected
24 condition, because it may not be possible after that to
25 ensure the quality of the equipment, and that is the

1 situation in which CP&L finds itself now.

2 CP&L is not only unable to provide documentation
3 of the pedigree of certain welds, it's unable to provide
4 documentation that it knows what conditions the piping was
5 subject to, the piping for pools C and D. It has no means
6 of documenting the conditions to which that piping was
7 subject during the last 15 years.

8 So it has -- it is unable to satisfy the
9 regulatory requirement for providing a documentary assurance
10 that the equipment was properly maintained and kept free of
11 corrosion and degradation. That by itself, without
12 inquiring any further, constitutes grounds and actually
13 requires the denial of this operating license amendment
14 application. No further inquiry need to be made.

15 In the event that the Licensing Board decides that
16 somehow the information that has been provided by CP&L
17 regarding the condition of the piping and welds for spent
18 fuel pools C and D could be considered adequate in the
19 absence of a construction permit amendment application.

20 The county has provided extensive documentation of
21 the reasons, the factual reasons that it believes that the
22 program and the inspections that have been carried out by
23 CP&L to try to assure the quality of this piping are not
24 adequate to do the job.

25 As I said before, the Board should not even reach

1 this point because CP&L has not complied with NRC regulatory
2 requirements, but if it should, Orange County submits that
3 in a number of respects, CP&L's program for identifying
4 corrosion and degradation in the piping for spent fuel pools
5 C and D is inadequate to provide a reasonable assurance that
6 this piping and the welds meet NRC quality assurance
7 standards.

8 We have documented this exhaustively in our
9 summary and I would refer the Board to the discussion of the
10 various aspects in which this program is inadequate, but I
11 will just go over each of them briefly to highlight them.

12 First of all, in order to compensate for its lack
13 of monitoring of the condition of the piping over the last
14 15 years, CP&L has taken one water test or one set of water
15 tests on one date, in the spring of 1999. This is
16 essentially a snapshot of the condition of the piping at one
17 given time. It does not tell anything about what kind of
18 condition the piping may have been exposed to over the last
19 15 years.

20 In addition, CP&L makes a number of assumptions
21 about the high quality of the water in the piping over the
22 last 15 years for which it simply doesn't have support,
23 because it didn't keep adequate records of whether
24 procedures for the flooding and flushing of the piping were
25 satisfied.

1 So all CP&L has is basically a hypothesis of what
2 the conditions were over those 15 years and all it has is a
3 single snapshot in the recent past of what the water
4 chemistry and biological conditions might have been. This
5 is simply inadequate.

6 CP&L has also performed a video camera inspection of the
7 welds, the 15 embedded welds that are in the piping that is
8 not accessible, otherwise accessible to it. There is a
9 dispute between CP&L and Orange County as to what exactly
10 was the scope of this videotape inspection and there is
11 actually internal inconsistency in CP&L documents as to what
12 was the scope of the videotape inspection, and this is
13 thoroughly documented in Orange County's summary.

14 But the basic issue is that although CP&L asserts in various
15 places that the video camera inspection was intended to
16 cover the piping and the welds, that, in fact, the video
17 camera inspection only looked at the 15 embedded welds. It
18 did not look at the condition of the piping.

19 In addition, the video camera inspection happened to notice
20 a weld that was previously unidentified that turned out to
21 be a shop weld. In spite of noticing that there was a shop
22 weld in this piping, CP&L made no further effort to inspect
23 or identify whether there were other shop welds in the
24 piping that needed to be inspected.

25 CP&L also did not follow its own procedures for

1 inspecting the welds. The procedures required CP&L to make
2 a record when it saw foreign material on the welds, and the
3 records that CP&L maintained did not reveal this.

4 The pattern that is seen is that CP&L has
5 basically, at each stage of the process, done as little as
6 it thought it could do in order to justify using this piping
7 and that as revelations came to light about the degree of
8 the problems seen in the piping, then CP&L did a little more
9 and then a little more.

10 What CP&L has done is still not enough because it
11 has -- it still doesn't know what is the condition of the
12 piping for spent fuel pools C and D and CP&L has not pursued
13 the indications that it has that there may be
14 microbiologically-induced corrosion in this piping.

15 On five of the welds that CP&L inspected,
16 indications were seen of corrosion. Rather than inquiring
17 as to whether this corrosion also affected the piping, CP&L
18 stopped there.

19 CP&L's own consultant's report, the SIA report, in
20 table 4.1 and 4.2 on page 34 -- I'm sorry -- tables 4.1 and
21 4.2, which is described on page 34 of Orange County's
22 summary, demonstrates that conditions which SIA considers
23 would be favorable to MIC are also present at the Harris
24 nuclear plant.

25 This should provoke CP&L to look more closely at

1 the condition of the piping, which, in addition to the weld,
2 is subject to the quality assurance requirements of Appendix
3 B.

4 Finally, there is a significant and material
5 dispute between Orange County and CP&L and the staff
6 regarding the health and safety significance of any
7 corrosion that might be in the pipes at Harris. According
8 to CP&L and the staff, if, in fact, there were any such
9 corrosion, it would have little effect because a small
10 amount of leakage would not affect the capacity of the spent
11 fuel cooling system to do its job of cooling the fuel.

12 But what they don't address is the health
13 significance of continuous small leaks from nuclear power
14 plant piping, where the water in the piping may be
15 contaminated. In this case, as we discuss in our summary,
16 the spent fuel pool piping for pools C and D may carry water
17 that's contaminated with tritium. If the
18 tritium-contaminated water leaks out of these pipes and into
19 the environment, that's a health and safety issue, and that
20 is something that the quality assurance requirements of
21 Appendix B are intended to prevent.

22 That's all I have for the moment.

23 JUDGE BOLLWERK: All right. Mr. O'Neill, are you
24 going to respond on behalf of CP&L?

25 MR. O'NEILL: I am.

1 JUDGE BOLLWERK: She's covered a number of items.

2 MR. O'NEILL: Yes.

3 JUDGE BOLLWERK: So I'll let you proceed. I have
4 at least eight subparts of one. So I will let you proceed
5 on.

6 MR. O'NEILL: And we agree on eight subparts of
7 the last one.

8 Let me step back and focus for a minute on what is
9 before the NRC in this proceeding, to begin with, and I will
10 step back even before that and put ourselves in CP&L's
11 position, where it has made a decision that it requires
12 additional spent fuel storage and has two spent fuel storage
13 pools available and has a spent fuel pool cooling system
14 that was abandoned during the construction because of the
15 cancellation of Unit 2.

16 CP&L is permitted, by Commission regulations,
17 under 50.59, to make changes to the plant and the facility,
18 as described in the safety analysis report, unless the
19 proposed change, test or experiment involves a change in the
20 technical specifications incorporated in the license or an
21 unreviewed safety question.

22 So what leads CP&L to come to the Commission with
23 an application for a license amendment?

24 Number one, they need a change to a technical
25 specification to allow the use of higher density fuel racks

1 in C and D. Number two is that the additional heat load of
2 one MBTU from spent fuel pools C and D had not previously
3 been reviewed by the NRC and, therefore, was an unreviewed
4 safety question. And, number three, at some point after the
5 cancellation of Unit 2 and purging of records, certain
6 quality assurance materials were destroyed with respect to
7 welds in the spent fuel pool cooling cleanup system piping,
8 and CP&L, because it no longer was in the construction
9 business, no longer had an end stamp and had committed to
10 construct the spent fuel pool and the associated cooling
11 system pursuant to requirements of ASME code end stamp.

12 Now, at that point, what 10 CFR 50.59 requires is
13 for the applicant to submit an application for an amendment
14 to the license pursuant to Section 50.90. In a minute, I
15 will address this new legal contention, that we didn't even
16 anticipate, as we had tried to anticipate a lot of the other
17 arguments in our simultaneous filing, that we required a
18 construction permit.

19 We didn't anticipate because, A, we had never
20 heard that argument; B, there has never been, to our
21 knowledge, and we've researched this carefully, in the
22 history of commercial nuclear power plants, a construction
23 permit issued in advance of an amendment to an operating
24 license.

25 There has been one case where a construction

1 permit was issued pursuant to the standard of 50.91, and
2 that was to the University of Maryland's research reactor,
3 when they completely changed the core design. Absent that,
4 there has not been, because there is not a requirement for a
5 construction permit in advance of an operating license
6 amendment.

7 And indeed under certain circumstances, CP&L can
8 add a system at its operating power plant as long as it
9 doesn't involve, A, change to a technical specification or
10 an unreviewed safety question.

11 So CP&L filed an alternative plan under 50.55(a).
12 Alternative plans under 50.55(a) are essentially waivers to
13 ASME code requirements that are not generally treated as
14 license amendments. Indeed, the NRC staff does not notice
15 them in the Federal Register. There is not an opportunity
16 for hearing and there is no proceeding. They simply review
17 a code case or a code exception and say yea or nay.

18 The staff recommended to the applicant that it be
19 included as part of the license amendment request and CP&L
20 did that. It did not have to and perhaps, with the benefit
21 of hindsight, we should have just put it in as a code case,
22 because that's exactly what is the practice before this
23 Commission.

24 But before the Commission today is the adequacy of
25 the alternative plan. The alternative plan does not include

1 every part of the spent fuel pool cooling cleanup system.
2 It only includes those parts where the quality assurance
3 records are no longer available.

4 So with respect to, for example, the piping spools
5 or the piping runs, which have lots of welds in them, both
6 circumferential welds and longitudinal welds, we have, as
7 we've noted in the paper, CP&L has the vendor QA records.
8 So we don't have to make an alternative demonstration as to
9 the as-constructed, if you will, condition of the piping
10 spools. Same with the shop welds, which are part of the
11 piping spools.

12 With respect to the accessible part of the system,
13 once again, we did not have to make the same alternative
14 plan, with the exception of the end stamp requirement, which
15 has not been challenged by BCOC and is not really before us
16 here.

17 But with that exception, once again, we were able
18 to redo QA records. We were able to re-inspect the welds,
19 the exact same inspection that was required at the time of
20 construction. We couldn't do it to the embedded piping
21 because it was in six feet or more of concrete. But with
22 respect to the accessible welds, we could do that.

23 So there was a detailed inspection of every part
24 of the accessible system and some welds were actually cut
25 out and replaced and there was equipment that was inspected

1 and all of this was done in order to demonstrate to CP&L
2 that this system would be able to meet the QA Appendix B
3 requirements at the time of commissioning.

4 So if we look at where we were, the issues which
5 seem to swirl around in BCOC's discussion, some of them
6 aren't really before the Board and not really before the
7 Commission, other than the fact that the staff certainly can
8 inspect every part of an applicant's operations, including
9 license amendment requests.

10 So there was an alternative plan under 50.55(a)
11 and an equipment commissioning plan that was not submitted
12 as part of the license application. That's required under
13 the 50.59 in order to make the demonstration that the
14 components, piping and whatever, is suitable for the purpose
15 intended, meets requirements, can become part of Appendix B
16 once commissioned, but that was not part of the license
17 application, because the QA records existed. That wasn't at
18 play.

19 It's to think about that as we then turn to the
20 arguments made by BCOC, and let me turn first to the issue
21 of the construction permit. We hadn't heard this one
22 before. In the January 4 filing, BCOC argued, quote, "CP&L
23 may not be granted an operating license amendment unless and
24 until, A, the terms of a new or amended construction permit
25 are approved and, B, the construction is completed in

1 conformance with the construction permit and the
2 regulations.

3 No way you can read that into contention three.
4 No way the applicant is on notice that that is an issue in
5 this oral argument. It's a new contention. If BCOC wishes
6 to argue this contention, and intervenors have raised it
7 years ago in a Surry proceeding, they can raise it as a
8 late-filed contention. They can address the five factors
9 and we'll strenuously object to its admission as a legal
10 contention.

11 That issue is not before the Board, it's not
12 before us, and we contend that the only disposition is to
13 advise BCOC the appropriate way to raise a late-filed
14 contention.

15 CP&L is not seeking conversion of a construction
16 permit pursuant to 50.56 and it's not seeking the issuance
17 of an operating license pursuant to 50.57, as BCOC suggests
18 we must do.

19 Shearon Harris and CP&L already have an operating
20 license. CP&L is simply seeking to make a change to its
21 plant, as described in the FSAR, and is seeking to make that
22 change pursuant to 50.59 and, as required, submitting an
23 amendment for a tech spec change, an unreviewed safety
24 question, under 50.59(c) and pursuant to 50.90.

25 No construction permit has been required for all

1 of the additions of TMI, post-TMI systems to nuclear power
2 plants, replacement of steam generators, power up-rates.
3 There has never been a construction permit issued to a
4 commercial operating plant that has an operating license, to
5 our knowledge and our research.

6 Now, the NRC staff has set out its views of this
7 very issue in a Director's decision. We're responding to a
8 2.206 petition challenging the replacement of steam
9 generators at the Virginia Power Surry plant.

10 The staff interpreted the material alterations
11 test of 50.91 as one requiring substantial changes in the
12 type of major components at existing facilities to a
13 different type of equipment. Thus, the changes would
14 introduce new significant issues relating to the nature and
15 function of the facilities and to the public's health and
16 safety.

17 That Director's decision is found at 10 NRC 625.
18 Here, of course, at Harris, the function of spent fuel
19 storage is and will be accomplished with the same equipment,
20 components, with the commissioning of the Harris spent fuel
21 pool in the same manner, with the same minimal health and
22 safety risks, as since the operating license was originally
23 issued.

24 This late-filed contention should not be
25 considered in any event. The Commission, at least the staff

1 has interpreted its regulations to not require, in any,
2 circumstance, a construction permit.

3 The next issue that Ms. Curran raised --

4 JUDGE BOLLWERK: Could I stop you there and just
5 ask one question?

6 MR. O'NEILL: Sure, absolutely.

7 JUDGE BOLLWERK: Assuming you had decided to build
8 from scratch these two fuel pools, would that require --
9 would that be a material alteration under 50.56?

10 Say you decided, for whatever reason, to expand
11 the size of the fuel handling --

12 MR. O'NEILL: 50.91.

13 JUDGE BOLLWERK: Have I got the wrong --

14 MR. O'NEILL: I mean, 50.91 is the one that uses
15 material alteration.

16 JUDGE BOLLWERK: All right.

17 MR. O'NEILL: I submit that if, in the fuel
18 handling building, which is this long building -- the fuel
19 handling building that exists at Shearon Harris is over 300
20 feet long; in fact, 300 feet is the length of the transfer
21 canal.

22 Let's assume, for the moment, that we built these
23 two spent fuel pools and did not build these two spent fuel
24 pools. They were just -- this is a huge empty space. The
25 issue, the only issue would be whether or not additional

1 spent fuel pool could be constructed in this space, systems
2 hooked up, without a change to the technical specifications
3 or an unreviewed safety question.

4 Likely, there would be some unreviewed safety
5 question that would come in, but I submit that that would
6 not be a material alteration, as the staff, at least, has
7 defined material alteration, because it's not different
8 equipment. It's not like changing the entire design of the
9 research reactor at the University of Maryland to a new and
10 different design.

11 It's not like storing spent fuel in a different
12 way, where the public health and safety risks might be
13 deemed to be different. It is simply doing more of the
14 same. So, again, a hypothetical question, if we had this
15 big building and did not have this part of the system and
16 wanted to build it, if we don't have an unreviewed safety
17 question, 50.59 allows you to make material changes to the
18 plant, as described in the FSAR, and it's done all the time.

19 In fact, steam generators have been replaced at
20 nuclear power plants, which is a huge construction process,
21 in the primary plant, breaking into the core of the, heart
22 of the nuclear steam supply system, under 50.59, without
23 even an operating license amendment.

24 When there has been a change to the steam
25 generator, for example, of a different design with different

1 configuration and different characteristics and there is a
2 change to the tech specs or an unreviewed safety question,
3 then they have to get a license amendment.

4 JUDGE BOLLWERK: Okay.

5 MR. O'NEILL: I think I was addressing the
6 question of -- are there any other questions before I --

7 JUDGE BOLLWERK: I think you were about to move to
8 a different point when I asked the question. Does anybody
9 else have a question at this point? All right.

10 JUDGE SHON: Well, I do, in a way.

11 JUDGE BOLLWERK: All right. Judge Shon.

12 JUDGE SHON: You mentioned that most of the
13 equipment had had a vendor QA program on it and, therefore,
14 satisfied the Appendix B. But you did not say anything
15 about the maintenance of that equipment from when the vendor
16 sold it to you till now.

17 Is there -- are there not other requirements under
18 Appendix B for safe lay-up and that sort of thing?

19 MR. O'NEILL: I have a whole section on that very
20 issue and I've -- to address your question, I will shift
21 from what I was going to do, to talk about the Appendix B
22 requirements, that's really the key to the contention, and
23 then I'll come back to Mr. Lochbaum in a little bit.

24 The staff and the applicant are certainly in
25 agreement that at the time construction of Unit 2 was

1 abandoned and no longer was the spent fuel pool cooling and
2 cleanup system part of what will be described in the final
3 safety analysis report for the plant as licensed, Appendix B
4 no longer applied.

5 During construction, to be sure, Appendix B and
6 the ASME code QA program -- remember, there is a dual QA
7 program during construction, as detailed in considerable
8 detail in the affidavits of David Shockley, affidavit of
9 Tommy Gilbert, and discussions in the affidavit of Charlie
10 Griffin, with respect to the QA program, the end stamp
11 requirements, and the welding program, all that were being
12 conducted on this system during construction.

13 Once -- and so both QA programs applied during
14 construction. At the point it was abandoned, the QA
15 program, Appendix B, no longer applies. Therefore, there is
16 no quote. I mean, what Ms. Curran would suggest is that
17 somehow we violated Appendix B by not maintaining the spent
18 fuel pool cooling and cleanup system under lay-up conditions
19 that meet Appendix B. It didn't apply and we didn't have a
20 corrective action program, it didn't apply; that we didn't
21 maintain QA records. It was unfortunate, but there was no
22 requirement to do it.

23 We were not being cited for not doing these things
24 because the QA program did not apply during this period of
25 time. It's not Sleeping Beauty. It's simply fact that it

1 was abandoned and did not apply.

2 It is when CP&L decides that it will commission
3 this system that it must demonstrate to itself that the
4 equipment that is to be included in the system will meet
5 Appendix B as installed at the time, which is precisely why
6 the equipment is inspected to determine whether or not it
7 can be commissioned and meet Appendix B. That's the
8 commissioning plan, and that's not part of the license
9 application.

10 There is no tech spec change relating to that.
11 There is no unreviewed safety question relating to that. It
12 is a requirement imposed on every licensee that we must
13 comply with, but it's not before the staff to look at as
14 part of our license amendment request. The commissioning
15 plan has been submitted to the staff, at their request.
16 They have inspected to our conduct and implementation of the
17 commissioning plan, equipment commissioning plan, but it's
18 not before them to say we are amending our operating license
19 to conduct this equipment commissioning plan.

20 The fact is we are amending the operating license
21 by changing our tech specs and by having the staff review
22 the unreviewed safety question and by, at the same time,
23 asking them to review the 50.55(a) alternative plan because
24 of the lost QA records and then we're going to change the
25 description of the plant in the FSAR, as we're allowed to

1 do, and conduct the rest of it under 50.59. That's what is
2 going on and that's why some of the discussion from BCOC has
3 been so confused, because they have mushed together what is
4 the 50.55(a) alternative plan and the equipment
5 commissioning plan.

6 I'm going to try to break it out and separate it
7 as we go through this discussion in a few minutes.

8 The Appendix B, stepping back again, applies to
9 all activities during the design, construction and the
10 operating phase of a nuclear power plant which affects
11 safety-related functions.

12 At the time of abandonment of the Unit 2
13 construction, this piping, these welds were no longer under
14 construction, were not in operation, and had no
15 safety-related function. By its terms, Appendix B did not
16 apply. It's not just an opinion of the staff and the
17 applicant. It's just, look at the regulations, it simply
18 doesn't apply.

19 Quality assurance, which is in Appendix B,
20 comprises all those planned and systematic actions necessary
21 to provide adequate assurance that a structure, system or
22 component will perform satisfactorily in service. That
23 commissioning plan was the applicant's way of making that
24 demonstration of adequate assurance.

25 The test inspections were to attain that

1 confidence in the structure, system or component will
2 perform satisfactorily in service. Now, in some respects,
3 the contention that has been raised here and a challenge by
4 BCOC is, you know, is the inspection adequate. So not every
5 contention is precisely part of what a license amendment
6 application is. It's certainly attendant to it and we are
7 certainly litigating this contention.

8 But what needs to be understood and particularly
9 in light of where we are today in this proceeding, as to
10 whether or not there ought to be a hearing, is the
11 inspection of the piping and the shop welds are not an issue
12 that will be important, either completely or in part, to the
13 Commission's decision on the license application.

14 The staff can inspect to that and they have
15 inspected to it, and the inspection report that was included
16 with applicant's summary shows that the staff, in inspecting
17 the implementation of the equipment plan, are satisfied with
18 what we've done. But that's not part of the license
19 application.

20 Looking very quickly then to the criterion cited
21 by BCOC, the handling, storage and shipping, and criterion
22 13, didn't apply during the period of time when we're not in
23 construction, operation, or related to a safety function.

24 Similarly, the corrective action program didn't
25 apply. That is where BCOC has misapprehended the entire

1 applicability of Appendix B. To be sure, once commissioned,
2 before operation, once commissioned, we have to satisfy
3 ourselves, CP&L has to satisfy itself that that system meets
4 all the requirements of Appendix B and to the extent that it
5 was abandoned for 17 years, that's why it has to be
6 inspected.

7 The equipment commissioning plan goes through
8 great detail as to every aspect of that inspection, most of
9 which hasn't been before this Board, but they have done
10 everything necessary to demonstrate to the company that they
11 meet Appendix B, or otherwise the NRC staff could come in
12 and find a violation. And, of course, the staff is looking
13 very hard in advance of issuing the license amendment to
14 make sure that we've implemented the commissioning plan
15 adequately.

16 Mr. Lochbaum, taking these in order. Once again,
17 we're taking the same position we did with respect to Dr.
18 Thompson. Mr. Lochbaum is forthright. When he doesn't
19 know something and he doesn't have expertise, he is quick to
20 admit it. A lot of experts don't do that in proceedings.
21 They stretch and they push and they shove and they say they
22 really are.
23 When he says he doesn't have any expertise in corrosion or
24 materials, material science, microbiologically-influenced
25 corrosion, he's being up front and forthright.

1 During his deposition, when I asked whether or not
2 he had requested the videotapes, he said he didn't request
3 them because he wouldn't know what he was looking at, good,
4 bad or indifferent, quote.

5 So we submit that Mr. Lochbaum is not an expert
6 in the narrow issues that are left with respect to facts
7 that may or may not be in dispute, because he is not going
8 to be able to assist the Board to make a decision on MIC or
9 whether there is or is not MIC; he will not be able to
10 assist the Board in whether or not there is -- what foreign
11 material might be in the pipe, because he's not an expert in
12 those areas.

13 We submit then that rather than strike his declaration --
14 again, this is not a subpart G proceeding -- that the Board
15 should give it the weight it deserves, which is very little,
16 and, specifically, if we ever got to it, would make a
17 finding that there was no reason to resolve any facts that
18 might be in dispute, and, to be sure, they aren't
19 substantial, but if there was a genuine dispute on anything,
20 we sure don't need a hearing and we sure don't need a
21 hearing where Mr. Lochbaum is the sole expert, because
22 there's not much he could really say, and he would be up
23 front and forthright and say that.

24 So we would agree with the characterization of his
25 lack of expertise, but to suggest that the remedy here isn't

1 to strike his declaration or to try to parse through the
2 summary and strike out his testimony.

3 And when we get to it, the discussion of the shop
4 welds and the foreign material, Mr. Lochbaum's own
5 discussion there confirms his lack of any expertise or
6 understanding of what he and the operator were looking at.

7 Let me address the eight issues that Ms. Curran
8 now sort of is left with. But before I do, let's talk about
9 what is no longer before this Board.

10 I broke the contention into two parts. Part one
11 was the condition of the piping and welds in the
12 as-constructed in 1980-83. Has applicant demonstrated,
13 through an alternative plan, under 50.55(a), that
14 notwithstanding the loss of QA records, that the spent fuel
15 pool cooling and cleanup system piping and welds were
16 properly constructed, and, notwithstanding the lack of QA
17 records, we can show alternatively that we can meet the
18 standards.

19 Ms. Curran has not challenged that here. In the
20 as-constructed condition, we've demonstrated, through the
21 affidavits of Shockley and Gilbert and Griffin and Edwards,
22 that it met the very, very superior ASME code QA program,
23 welding program and other programs in place during
24 construction. And notwithstanding the fact we didn't have
25 the weld data reports, the hydro test reports, firsthand

1 testimony of individuals who were there at the time and
2 still at CP&L can say those reports existed.

3 So consequently, that part of the contention is no
4 longer on the table.

5 The other part of the contention is what about the
6 as-is condition; that is, is -- and Mr. Lochbaum was very
7 helpful, in his deposition, of parsing between two periods
8 of time, in the as-constructed and the as-is condition.

9 Now, with respect to that, in the as-is condition,
10 we rely on a number of things and not just the visual
11 inspection. That's really the only thing that's left, and,
12 oh, by the way, one of the issues was initially did you
13 inspect all 15 welds, because we originally had planned to
14 only inspect six, but we were not sure that we could break
15 into pipes and get to all 15.

16 We managed to do that, all 15 were inspected, so
17 that's now off the table. And you will note that Ms.
18 Curran has not argued that the inspection of the field
19 welds, the 15 field welds, do not support the alternative
20 plan. That is, the 15 field -- the video inspection of the
21 15 field welds is part of the alternative plan. The video
22 inspection of the rest of the piping was part of the
23 equipment commissioning plan.

24 With respect to the alternative plan, there is no question
25 here that the 15 field welds, with all of the indication

1 that they've met the quality assurance requirements in the
2 first place, in addition to the inspection, as recorded by
3 Mr. Licina, who is an expert in this area for Structural
4 Integrity Associates; as recorded by Mr. Griffin, who is a
5 welding engineer; as recorded by Dr. Moccari, as recorded
6 by Mr. Naujock, as recorded by Dr. Davis, all of whom have
7 reviewed and commented on those 15 welds as being suitable
8 for the purpose intended.

9 So the 15 welds and the alternative plan are
10 really now off the table, because there's no challenge to
11 them anymore. The challenges go to the as-is condition of
12 the piping and maybe shop welds that are in the piping,
13 where, by the way, we didn't have to have an alternate plan
14 because we already had the vendor records.

15 We only took one set of water samples. The reason
16 why we took one set of water samples is because the piping
17 wasn't in-service, there was no reason to test the water in
18 the piping.

19 Let me go back to another one of the charts that
20 might help explain.

21 JUDGE BOLLWERK: I should mention, at some point,
22 we're going to have to talk about marking these in some way
23 or another.

24 MR. O'NEILL: You have 8X11 copies of each of
25 these in --

1 JUDGE BOLLWERK: They are part of your exhibits.

2 MR. O'NEILL: Yes.

3 JUDGE BOLLWERK: Okay. Could you give us the
4 exhibit numbers then when you identify them, so we can --
5 whoever is reading the transcript can --

6 MR. O'NEILL: Okay. I will ask Mr. Hollaway to
7 see if he can find those. I should have identified that.

8 If you look at the system, and I know you can't
9 perhaps read each of the small items here, but with respect
10 to the spent fuel pool system, most of it -- half of it is
11 embedded in concrete and the other half is accessible.

12 At the time it was spared in place, it was not
13 completely connected. Therefore, there was no connection
14 even with the CCW system and the spent fuel pool cooling and
15 cleanup system piping that's embedded.

16 Therefore, there is no place for water to come
17 into the piping, except through the spent fuel pools. There
18 is no other source of water, with the exception of the hydro
19 tests and flushing, the hydro test that was done at the time
20 of construction and a flushing that was done effectively
21 when they put some drain lines in.

22 There is no other place for water to come from.
23 So by process of elimination, the water that was in the
24 piping, that was in -- is inaccessible and was not connected
25 to the CCW system, must have come from the spent fuel pools.

1 When we took the one sample, and it's actually six samples
2 because it's one sample from six of the seven lines, and the
3 reason there was not a sample of the seventh line is we
4 didn't have a sample point on it.

5 We took the six samples, they were consistent with
6 the quality of the water in the spent fuel pools. Now,
7 that's important for one very important reason, is that it
8 is clear, from the review of records, it is clear from the
9 review of records that there was no opportunity for
10 chlorides or sulfides or sulfates to find its way to that
11 piping. Why? Because we know that the water in the spent
12 fuel pool is demineralized water, with very low levels of
13 chlorides and sulfates.

14 The water that was sitting in the piping was
15 consistent with the water in the spent fuel pools, no levels
16 of chlorides and sulfates.

17 We don't have any -- if you have pure water
18 without chlorides and sulfates, as Mr. Licina set forth in
19 some detail in his affidavit and as Dr. Davis set forth in
20 his affidavit, there is not much that can happen to
21 stainless steel piping, because in addition to having water
22 that's generally of high purity, stainless steel is not
23 going to sit and crack. It's not going to corrode. It's
24 going to just remain exactly in the condition it was, as it
25 did.

1 So for one water sample, while we cannot give you
2 water samples over a long period of time, it's pretty
3 irrelevant, because the water could not come from the
4 cooling tower, the lake, or anywhere else. It was flanged
5 off. The only place water could come in is the leak by the
6 plumber's plugs up on top of the spent fuel pool. That's
7 it.

8 Number two point, video camera inspection of the piping and
9 welds. There is a dispute as to the scope of the
10 inspection. Ms. Curran says we didn't look at the
11 condition of the piping.

12 There is no dispute as to the scope of the
13 inspection. The 50.55(a) plan, in order to qualify the 15
14 field welds, without the QA documentation, required a very,
15 very careful look at those welds. That was done. Any
16 little indication was documented and all of this is in
17 attachment Q to Mr. Edwards' affidavit. It is the detailed
18 review of the video inspection and the disposition of every
19 indication that was seen, and it includes the report by
20 Structural Integrity Associates as to the suitability of the
21 piping.

22 So there is no question as to the careful review
23 of those 15 welds as part of the 50.50(a) plan.

24 The equipment commissioning plan required that
25 there be an inspection of the piping, including the shop

1 welds, and that was done, notwithstanding what Ms. Curran
2 has said. Dr. Davis, who reviewed those videotapes, Dr.
3 Moccari, who reviewed the videotapes, Mr. Licina, who
4 reviewed the videotapes, Mr. Edwards, who reviewed the
5 videotapes, Mr. Griffin, who reviewed the videotapes, all
6 said they reviewed the piping.

7 So the piping was reviewed. That's not in
8 dispute, other than Ms. Curran says there is some
9 inconsistency.

10 The most vulnerable part of the piping is the
11 field welds. Why? Because it is not subject to the same
12 degree of control conditions in welding as a shop weld.
13 Consequently, you may have more variations in the heat
14 applied and sensitization of the metals. That was all in
15 Mr. Licina's report.

16 Consequently, if you look hard at the field welds,
17 which is the most susceptible to any corrosion, which is not
18 very much that can happen anyway, you are looking at most of
19 the condition of the piping. There is no reason, and
20 certainly BCOC has not offered any and Mr. Lochbaum isn't
21 in the position to do it anyway, as to what else could
22 happen in that piping.

23 So with respect to the video camera inspection, everyone
24 agrees that they didn't just zip past the rest of the piping
25 and only looked at the welds. They looked at the piping.

1 They looked at the longitudinal welds. In fact, one of the
2 indications is a small crack-like indication on a
3 longitudinal weld. That's not a field weld. That's in the
4 piping. That was inspected and was carefully looked at and
5 was dispositioned.

6 So that is not in issue here.

7 Let's turn to the testimony by Mr. Lochbaum on
8 the shop weld. The shop weld issue takes a few minutes to
9 go through, just to make sure it's clear, and let me make
10 two points up first.

11 The camera operator, remote camera operator was
12 qualified and trained to do one thing, to operate the remote
13 camera. He was real good at focusing the camera, at looking
14 at 360 degrees around the weld or wherever he wanted to
15 look, and to record a high quality videotape. He was not an
16 engineer, he was not a corrosion expert, he was not a
17 welding expert.

18 His comments are absolutely irrelevant. They
19 simply said here is where I think I am and, in fact, he got
20 confused sometimes. And if he says I see slime, that is
21 irrelevant, because he doesn't know what he's looking at.
22 He seems something.

23 So what the camera operator says -- in fact, the
24 inspection report that we include as an exhibit, the
25 inspection report talks about the qualifications of the

1 camera operator in some detail. His testimony is
2 irrelevant, and, of course, we wouldn't include it.

3 But let's look at one of the quotes that Mr.
4 Lochbaum relies on in suggesting we ignored a problem with
5 the shop weld. The quote is as follows; "As you can see,
6 there appears to be a lot of grinding in here. Therefore,
7 this cannot be our field weld. The one we just passed must
8 have been the field weld and this here must have been the
9 shop weld. We see a couple of spots there where there's a
10 lack of fusion like right here and again up here. A little
11 further, there was some more."

12 Now, what Mr. Lochbaum interprets that to mean is
13 that we ignored a problem with the shop weld. There was, he
14 says, lack of fusion on the shop weld. He says there was, a
15 little bit later, some push-through on the shop weld.

16 He's confused. The shop weld, correctly noted by
17 the camera operator, had some grinding on it. The grinding
18 is an appropriate way to remove any little indications that
19 you might see on the internal part of a weld.

20 We know for a fact that that was a shop weld if it
21 had grinding because no field weld was ground, no field weld
22 is internally inspected.

23 So he did see a shop weld, and that shop weld was
24 ground, but what the camera operator said, hey, that might
25 be some lack of fusion, was on a field weld. It was field

1 weld 66, to be exact. And the logic would tell you that had
2 to be true because the shop weld was ground, the field weld
3 wasn't. The field weld was the one that had a little bit
4 of, quote, lack of fusion, according to the camera operator.

5 What Mr. Lochbaum failed to quote was the next
6 couple sentences by the camera operator, which would have
7 resolved this issue, if he had quoted it, and I saw a quote
8 from the camera operator, again, who, again, is not an
9 expert, but he's saying what he sees.

10 Now, we've brought up the light. It's face down
11 on it. Oh, you can see there is nothing there. Now, folks
12 who looked at this and who are experts said, indeed, with
13 the benefit of a little bit more light, there was no lack of
14 fusion, and, therefore, if you look at Dr. Davis' report on
15 field weld 66 or if you look at attachment Q to Mr.
16 Edwards' affidavit on field weld 66, there is no indication
17 of possible lack of fusion, because there is none because
18 the camera operator's comment was inaccurate.

19 Now, there are a number of other things that are
20 inaccurate about the camera operator's comments. Indeed,
21 Mr. Lochbaum draws incorrect inferences from every one of
22 them. I want to point that one out because it basically
23 takes care of this issue of the shop weld and also indicates
24 the problems with trying to cite to a camera operator or
25 cite to Mr. Lochbaum as to what is being seen on these

1 videotapes.

2 Importantly, and I don't think I mentioned this,
3 Dr. Davis is an expert and is the NRC staff's expert on
4 microbiologically-influenced corrosion. He has a Ph.D.
5 from Ohio State and the Fontana Corrosion Center, which is
6 probably a top program in the country on corrosion.

7 So does Dr. Moccari, has a Ph.D. from the same
8 program. Dr. Davis has inspected, as he testified in his
9 deposition, a number of cases where there was MIC corrosion
10 on piping. To quote Justice Potter, "He knows it when he
11 sees it," Potter Stewart, "He knows it when he sees it."

12 Dr. Moccari, similarly, was responsible for
13 evaluating and dealing with the MIC corrosion at the
14 Robinson plant, which is the subject of, back when, one of
15 the information notices. Dr. Moccari knows it when he sees
16 it.

17 Mr. Licina has written a number of books on
18 microbiologically-influenced corrosion. It's fair to say
19 that Mr. Licina knows it when he sees it.

20 There is nothing to be added by Mr. Lochbaum and
21 the camera operator's views of what may or may not have been
22 seen on this piping to that of the experts in the area.

23 The second point raised by Mr. Lochbaum and, he
24 says, the camera operator goes to foreign material, foreign
25 material. At one point, going through the summary by BCOC,

1 they talk about some form of debris, a pile of scale, it's
2 iron oxide, which is set forth in some detail in Dr.
3 Moccari's report.

4 Interestingly, when the camera operator said "I
5 seem to be getting a little haze, again, it's the buildup of
6 the residue and stuff, and the picture looks a little fuzzy.
7 It's the residue buildup. It turns out that was fuzziness
8 because the camera wasn't properly focused, which they
9 corrected, not something that Mr. Lochbaum would know,
10 because he wasn't there.

11 He says "The camera operator said, again, we got
12 the same thin black lines that appear to be, ah, some, just
13 the way the lines of the scale and residue have grown in
14 there." These thin black lines, with the benefit of a little
15 bit more light, disappeared when viewed from another angle
16 and was nothing. Each of these was either iron oxide or
17 nothing when reviewed by someone who knew what they were
18 looking at.

19 Now, let's look at then the foreign material issue
20 that's raised by Mr. Lochbaum. I have two points here.
21 What BCOC does is say, ah, if we look at ESR 95-425
22 cleanliness requirements, you haven't done what you're
23 supposed to do, you haven't followed procedures, and
24 certainly Mr. Lochbaum can testify as to whether or not
25 someone follows procedures.

1 Well, the first question is, what is that
2 procedure. That procedure is one that applies after the
3 equipment has been commissioned, after the equipment has
4 been flushed, after the equipment is ready to operate. Then
5 one does a cleanliness inspection. ESR 95-425 has nothing
6 to do with the video camera inspection. It has nothing to
7 do with what you will see.

8 In fact, applicant went through and used something
9 called a hydro laser, which was a high-powered garden hose
10 type arrangement, to wash the iron oxide off of welds so
11 that they could be carefully inspected.

12 Eventually, pursuant to the equipment
13 commissioning plan, they will flush, they will hydro, and
14 they will inspect for cleanliness, but not now. There was
15 no violation of a cleanliness inspection procedure at this
16 point. Mr. Lochbaum misapplied a procedure that doesn't
17 apply here.

18 With respect to whether or not applicant has
19 indeed determined what the foreign material or residue is,
20 if you read the affidavit of Dr. Moccari, they carefully
21 looked at and confirmed what they already knew, that the
22 residue is material that has leaked by the plumber's plugs
23 and has come from residue from the Brunswick fuel, which
24 does not have boron in the spent fuel pool and, therefore,
25 developed some iron oxide on the fuel assemblies and every

1 time it is trans-shipped to the Harris pool and placed in
2 the spent fuel pools at Harris, you see the residue come off
3 in the borated water at Harris and the water will turn a
4 different color. It's iron oxide.

5 Interestingly, Mr. Lochbaum, after an early
6 public meeting on this license amendment application, before
7 it was actually submitted, heard one of the CP&L licensing
8 engineers talk about, quote, dirty water, raised it as an
9 issue at a conference call with the licensing engineer and
10 was satisfied when they explained this very thing. Perhaps
11 Mr. Lochbaum forgot that discussion when he raised this
12 issue of foreign material.

13 It's foreign material because it came from
14 Brunswick and it is simply residue that leaked by and will
15 be flushed out. It's nothing to do with the suitability of
16 the pipes. It does not interfere with the quality of the
17 pipes.

18 There was an earlier statement, not raised here, but I'll
19 mention it again, of a white deposit that could be seen on
20 some of the videotapes before they were hydrolazed.
21 Everybody at the plant who is knowledgeable knows the white
22 deposit is simply boron, because the 2000 ppm borated water,
23 when there is evaporation, you will get a white deposit of
24 boron crystals.

25 So there was no reason to analyze that, because everyone

1 knows exactly what it is. In fact, I pointed it out to Ms.
2 Curran as we were touring the spent fuel handling building
3 and showed her the boron crystals on the edges of the spent
4 fuel pool where the water had evaporated.

5 Ms. Curran says we did not follow the procedures
6 for inspecting the welds, we did not make a record of
7 foreign material on the welds. Not true. Every time that
8 there was a red deposit on one of the fields welds, it was
9 noted, and the inspection procedure with respect to the
10 50.55(a) alternative plan was followed and it is carefully
11 recorded and is part of attachment Q to the Edwards
12 affidavit.

13 Ms. Curran says we've done as little as CP&L
14 thought it could do to justify using the piping. That's not
15 true. The equipment commissioning plan hasn't really
16 changed, with the exception that CP&L was able to inspect
17 all 15 of the welds when the contractor got in there and
18 said we could make the bends, we could make the turns in the
19 pipes and go further to look at other welds.

20 But rather the equipment commissioning plan simply
21 wasn't part of the application and was not understood as
22 such by BCOC and Ms. Curran.

23 I have already addressed her sixth point, which is
24 microbiologically-induced corrosion. She's concerned that
25 that might be an issue. Dr. Davis, Dr. Moccari, Mr.

1 Licina all say active MIC there and they can't even agree on
2 whether or not a little pinhole, maybe, could have been,
3 might have been some sort of a little MIC corrosion from
4 whenever.

5 When there is significant MIC corrosion, it
6 happens very quickly, as demonstrated at Robinson, within a
7 matter of months and there were hundreds, if not thousands
8 of pinholes with leaks. That has not happened at Harris and
9 would not be expected to happen because there was not raw
10 water in those pipes, as there was in the service water
11 system at Robinson.

12 SAIA did not say that the conditions for MIC
13 really existed. SAIA said if there was any kind of
14 potential corrosion to this piping, the only kind, given the
15 temperature, the lack of stress, the lack of pressure, and
16 the lack of water other than pure water, that could possibly
17 be there would be microbiologically-influenced corrosion.

18 Mr. Licina, in his affidavit and his report, has
19 a detailed chart on all of the potential ways that stainless
20 steel could corrode and has noted that the only possible way
21 that this piping might have had some corrosion would be MIC,
22 and he didn't see any.

23 Finally, Ms. Curran says we did not address the
24 health significance of continuous small leaks. An
25 opportunity to use some more of my charts.

1 MR. HOLLOWAY: I would inform the Board that, these
2 charts are in Exhibit 1, affidavit of Steven Edwards,
3 attachment H, and they are pages one through four. They are
4 all in attachment H.

5 JUDGE BOLLWERK: All right.

6 MR. O'NEILL: The problem that we have with this
7 question is it's so difficult to even construct where you
8 could have a leak. The piping, as this -- this is not
9 exact, but it's a cartoon that's pretty clear. This is a
10 six-foot segment, with the pipe pretty much in the center
11 that has -- it's a 12-inch pipe, two-and-a-half feet on
12 either side of it.

13 Assume, for the moment, a field weld has a leak.
14 As Mr. Gratton, in his affidavit, notes, Mr. Edwards, in
15 his affidavit, notes, with 25 psi maximum pressure in the
16 system, which is open, of course, to atmosphere, where is
17 the water going to go? Highly unlikely that you're going
18 to get very much water out of a pinhole leak. It's highly
19 unlikely, if the weld fails, that you're going to get very
20 much water out, because there is nowhere for it to go.

21 So I asked the engineers where could it go. Let's
22 assume you have water that trickles down the pipe and
23 doesn't evaporate before it was able to get out and leak
24 someplace. By the way, the place that that could most
25 likely happen, you could have a leak, would be in the

1 accessible piping, which, of course, you would do something
2 to isolate it, and you could essentially isolate this
3 piping, too.

4 This is the color chart that's in the exhibit that
5 Mr. Hollaway just mentioned. And this shows that
6 essentially -- this is, by the way, pools A and B. We
7 already happen to have the charts of A and B, so it's just
8 easier to show.

9 But if you had leakage somewhere into this room,
10 through this wall, into this room or in any other void where
11 the water could drip through, it eventually, if it doesn't
12 evaporate, and you'll see it evaporate because you'll see
13 boron crystals appear where it comes out, if it doesn't
14 evaporate and it actually ripped out someplace, it would
15 simply go to the bottom eventually into the drains. All of
16 the drains in this building, as Mr. Edwards has noted, go
17 to the waste processing system and are treated as
18 radioactively contaminated water.

19 So if you had the accessible piping with a
20 guillotine break dumping a lot of water, not a tremendous
21 amount, because it can only go five feet down in the pool
22 before it reaches the discharge and suction levels, it can't
23 go beyond that, but even if all that water went out, it
24 would simply go into the drains, waste processing building,
25 where all the radioactive water is processed.

1 There is no path to the environment. There is no
2 way it gets to the environment. That's one of the reasons
3 it's good to have it done in this building. There is no
4 path to environment.

5 This gets to a very important part of what we're
6 all about today. We've talked about a lot of little issues,
7 very tiny, little teeny disputes, which we believe aren't
8 really factual disputes, but they're disputes, but none of
9 them matter in connection with public health and safety or
10 environmental protection, because the worst thing that can
11 happen, as Mr. Gratton suggests, is this catastrophic
12 failure of weld with a lot of water going out.

13 It can't uncover the fuel because it can only go
14 down five feet. The water is going to be processed. The
15 system is redundant. You'll see that there are two intakes
16 and two discharges into each of the pools, A and B, C and D,
17 separate systems. You have separate coolers, you have
18 separate pumps. Each cooler goes to both pools, each pump
19 goes to both pools. You have redundant ways to cool the
20 fuel.

21 And if, in fact, if you, for some reason, lost all
22 cooling to either B or C and you kept the gate open, you
23 could cool D and have convection cooling of the other pool.

24 So there is no even credible health or safety
25 issue raised by all of these little issues of is there some

1 foreign material in the pipe, what about this shop weld, did
2 you really look at all the lines carefully enough. It
3 cannot present a health and safety issue.

4 Consequently, it cannot be the basis, in whole or
5 in part, of a Commission decision in the license application
6 and it's not a substantial dispute, even if it were a
7 dispute.

8 If we -- before I finish, I want to go back and
9 look at the criterion.

10 JUDGE LAM: If I may interrupt you, Mr. O'Neill,
11 while you are still at that chart.

12 MR. O'NEILL: Sure.

13 JUDGE LAM: Are there any safety equipment --
14 assuming there is a leak involving some volumes of water,
15 assuming, are there any safety equipment, safety-related,
16 safety-important, that serve other systems in the plant that
17 would be impacted by the water?

18 MR. O'NEILL: I will check with one of the
19 engineers before I just answer that. I don't think so. Mr.
20 Edwards? There is no -- if you had the flood that Mr.
21 Gratton hypothesized, even that wouldn't be a health and
22 safety issue, that floods a lot of water out. Remember, it
23 can't be more than five feet. It is not going to knock out
24 any safety-related equipment.

25 JUDGE LAM: To me, that may involve a lot of

1 elaborate analysis and inventory of what type of safety
2 equipment are there. If there are no safety equipment, then
3 maybe that statement is plausible, but there are equipment
4 that may be vulnerable to water intrusion that one may need
5 to look at. I'm just asking.

6 MR. O'NEILL: Right.

7 JUDGE BOLLWERK: You're thinking of cabling or
8 something.

9 JUDGE LAM: Like a solenoid valve, a small
10 opening. I'm sensitive to the huge number of equipments in
11 a plant.

12 MR. O'NEILL: Right.

13 JUDGE LAM: My question is really focused on the
14 equipment that matters.

15 MR. O'NEILL: Right.

16 JUDGE LAM: The equipment that do not contribute
17 in any shape or form on the failure, which do not contribute
18 in any shape or form to reactor safety. Let us exclude
19 those.

20 MR. O'NEILL: Well, certainly, the fuel handling
21 building, which is a separate building, its function is to
22 store spent fuel, maintain spent fuel, be the place in which
23 new fuel is inserted into the reactor, but that building and
24 the equipment in that building, to my knowledge and to Mr.
25 Edwards' knowledge and to Mr. Altman's knowledge and

1 everyone who is nodding, has no function related to the safe
2 operation of the nuclear power plant.

3 So the equipment here is certainly safety-related
4 to the extent it provides cooling to the spent fuel pools,
5 but that's pretty much it in that building.

6 JUDGE LAM: Thank you.

7 MR. O'NEILL: Let me close by summing where we are
8 in contention three. Contention three was narrowed during
9 discovery to address only the piping and the welds embedded
10 in concrete as part of the spent fuel pool cooling and
11 cleanup system for pools C and D. There is no genuine issue
12 -- genuine dispute of fact regarding whether the ASME code
13 approved welding procedures, non-destructive examinations,
14 hydrostatic testing, and quality assurance inspections were
15 followed in the installation of the embedded piping during
16 construction of the Harris plant, and BCOC does not
17 challenge any aspect of the piping pedigree plan as part of
18 the 50.55(a) alternative plan to demonstrate adequate
19 quality and safety of the embedded piping as constructed.

20 The Board should dismiss this part of contention
21 three.

22 With respect to the adequacy of inspections and
23 tests as part of the equipment commissioning plan to
24 demonstrate the embedded piping has not been subject to
25 significant corrosion or other deterioration and to

1 determine -- and to demonstrate the adequate quality and
2 safety of the embedded piping as is, BCOC no longer
3 questions the adequacy of inspections and tests to determine
4 the condition of the equipment and components of the spent
5 fuel pool cooling and cleanup system for pools C and D,
6 other than it might be embedded in concrete.

7 CP&L expanded its inspections and tests to include remote
8 video camera inspection of all 15 embedded field welds and
9 associated piping. This renders BCOC's original contention
10 regarding the scope of the remote camera inspections moot.

11 BCOC's continuing issues regarding inspection and
12 test of the embedded piping and welds are not substantial,
13 are not central to the decision of the NRC in the license
14 amendment application; indeed, are outside of what is being
15 put before the Commission and this Board with respect to
16 what we need from the Commission to do to install the spent
17 fuel pool cooling and cleanup system and to modify the plant
18 pursuant to 50.59, and do not require, cannot require,
19 certainly could not benefit from an adjudicatory hearing for
20 disposition.

21 There is no health or safety consequence of a
22 significant or significant environmental impact that could
23 result from a hypothesized leak in the embedded piping, in
24 any event, as Mr. Gratton and Mr. Edwards make very clear.

25 The record before the Board is more than

1 sufficient to allow the Board to decide this aspect of,
2 contention three without an adjudicatory hearing. The Board
3 could, the Board could simply dismiss the contention as not
4 meeting the strict threshold for an adjudicatory proceeding
5 and allow the NRC staff to review the technical information
6 in the context of its review of the LAR.

7 Recall, in the subpart K proceeding, the Board
8 need not decide every issue. It only need decide whether or
9 not an adjudicatory hearing is required under the strict
10 four tests. And if the Board, for whatever reason, decides
11 it does not need to decide this issue or doesn't have the
12 information it wants to decide the issue, it can simply
13 refer it back to the staff, because the staff has got to
14 look at all of the issues relating to this license
15 application, whether or not they're before the Board, and
16 that is one of the benefits provided by subpart K, because
17 subpart K was intended to only litigate real issues with
18 some meaning and to allow the applicant to get on with doing
19 what Congress required, which is expanding spent fuel
20 storage capacity, in light of now the Department of Energy's
21 and Congress' own failures to deal with spent fuel disposal.

22 Thank you very much.

23 JUDGE BOLLWERK: Okay. Questions at this point?

24 JUDGE SHON: I have one.

25 JUDGE BOLLWERK: All right.

1 JUDGE SHON: I have a sort of fundamental
2 question, I think. In effect, under normal construction
3 permit conditions, these pipes would have all been inspected
4 from the outside with a number of different techniques. I
5 don't know just which ones would have been used, but they're
6 all non-destructive examination techniques.

7 And now you're using rather a different and single
8 technique, camera inspection, from the inside. I mean, you
9 didn't use dye penetrant or magnetic filings or volumetric
10 examinations of any kind.

11 Why is that one look by eyeball from the inside
12 the equivalent of looking at everything from inside and
13 outside with various kinds of techniques?

14 MR. O'NEILL: First of all, as indicated in Mr.
15 Griffin's affidavit, pursuant to code requirements for this
16 Class III piping, the welds were inspected by visual
17 inspection and dye penetrant from the outside only. There
18 was no internal inspection. It was not required.

19 Recall also that this piping is pretty
20 significantly over-designed for the purpose intended. It's
21 150 psi design pipe, three-quarters of an inch stainless
22 steel pipe, where Structural Integrity did an analysis to
23 show that .011 inches would be sufficient for the purpose
24 intended. But in any event, that is what was done at the
25 time.

1 What the alternative plan does with respect to the
2 field welds, because they're the only ones at issue, is it
3 says we can demonstrate the quality of those welds,
4 notwithstanding the fact that we've lost the weld data
5 reports, in a number of ways. Importantly, there was a
6 program and the program would have had to completely broken
7 down to have these welds not welded and inspected pursuant
8 to the ASME code program.

9 So there is a presumption that since the program
10 was a very good program, that it happened. We just don't
11 have the records to show it.

12 But we have other records and those records were
13 the hydro test reports and what, in some mind-numbing
14 detail, Mr. Shockley and Mr. Gilbert noted was that they
15 inspected, in some cases, these very welds. And what does
16 their inspection mean? As part of their inspection and
17 their signature on the records meant that they reviewed the
18 weld data report.

19 And as Mr. Griffin went through in some
20 mind-numbing detail, what does the weld data report show?
21 It shows that the weld passed the NDE.

22 So for each of these welds -- I'm sorry -- for 13
23 of 15, you actually have a signature that says I, by signing
24 this, inspected the weld data report and the weld data
25 report showed, among other things, that the NDE was done.

1 So we begin with the fact that we know that the
2 NDE was really done, even though we don't have the weld data
3 report, because we have a secondary record.

4 The next thing we have is a pour card, when the
5 concrete was poured. You have another inspector who had to
6 do the exact same thing. Before you're going to pour the
7 concrete over the piping and over the weld, someone is going
8 to check and make sure they have that weld data report.
9 Second check.

10 You also have the inspection of all of the welds
11 that were accessible and those were inspected again from the
12 outside; in some cases, from the inside, just to check them.
13 Nothing wrong with those welds. It gives you inferentially
14 more confidence that the other welds were done right and are
15 fine.

16 And then since you cannot look at the outside of
17 these welds because they're embedded in concrete, and it
18 would certainly be a hardship to try to rip out the concrete
19 to do it and wouldn't be necessary, we said, in addition to
20 that, initially, we'll do a sampling and then eventually we
21 looked -- CP&L looked at every one of the welds by a camera
22 inspection, which, the NRC staff noted, has been an
23 acceptable way to inspect welds and, among other things, the
24 reactor vessel. This is Class III piping.

25 So all of that, the totality is what really gives

1 you the confidence that these welds were done correctly in
2 the first place and that, if you look on that root pass, and
3 the root pass is good, that root pass is all that you need
4 with respect to thickness of weld for the purpose intended
5 for this particular piping.

6 But there's five or six passes above that root
7 pass and you know those passes were there because you have
8 the signature of the guy who did the inspection at the hydro
9 test and he looked at every one of those welds and he can
10 tell that the weld was all the way through, because he had
11 to look at it and make sure the weld was not leaking when
12 they did the hydro test.

13 So it's not just the inspection that gives you the
14 confidence. It's that whole process that CP&L went through
15 as part of this alternative plan.

16 JUDGE SHON: Thank you.

17 JUDGE BOLLWERK: Judge Lam, anything?

18 JUDGE LAM: If I may follow a little bit on Judge
19 Shon's remark, Mr. O'Neill.

20 Can we now safely interpret your remark this way?

21 If there are no collaborating records, if there were none,
22 this visual inspection alone would not be adequate. Is that
23 true?

24 MR. O'NEILL: I'm not saying that because I
25 haven't had to address that issue. Because we have no many

1 different checks, we have many different ways of
2 demonstrating that the welds were done correctly in the
3 first place, and the weld appears to be fine internally.

4 And secondly -- there's two parts to that --
5 appears to have been properly welded, A, and, secondly, has
6 not deteriorated or corroded or something has happened over
7 the intervening years. Okay.

8 Those are two separate issues. The issue I
9 believe you're addressing is whether or not it was welded
10 correctly in the first place, not the second issue.

11 JUDGE LAM: That's right.

12 MR. O'NEILL: And I don't know the answer. I
13 mean, I'm not sure, because I haven't had to address it and
14 I haven't spent time with welding engineers to tell me
15 whether they would be confident. My own view would be,
16 however, that for the purpose intended, if you can see that
17 root pass, you're embedded in concrete, seismically
18 qualified, is not going to have any stress, it's got 25 psi
19 of pressure internal in that pipe, you just have a little
20 bit of wall.

21 It's more than adequate. In fact, you could
22 probably take the wall out and the water is going to run
23 through essentially the 12-inch diameter hole and it's going
24 to accomplish the purpose intended. I don't think that
25 we're suggesting that, but I'm just saying that there is

1 very little duty on this piping, very little is needed,
2 Putting three-eighths inch stainless steel piping in there
3 is true over-design.

4 So it may well be that if you ask Structural
5 Integrity Associates or others whether or not this visual
6 camera inspection is adequate, in and of itself, without any
7 other records, to show that these welds are fine, the answer
8 might be yes. But I haven't asked that question, so I'm not
9 going to tell you one way or another, but I can give you at
10 least some thoughts.

11 JUDGE LAM: Thank you.

12 JUDGE BOLLWERK: All right. Anything else from
13 any of the Board members at this point? All right. Ms.
14 Uttal, how much time do you think you're going to need?

15 MS. UTTAL: Less time than Mr. O'Neill. I don't
16 know, maybe half an hour.

17 JUDGE BOLLWERK: All right. Can we take a break
18 at this point? All right. Why don't we do that? Let's
19 take a ten-minute break. We'll come back about quarter
20 after and then we'll go with the staff. And I should
21 mention, Ms. Uttal, we're obviously going to be interested
22 in what you have to say about Mr. O'Neill's description of
23 the licensing process here that was undertaken.

24 [Recess.]

25 JUDGE BOLLWERK: Let's go back on the record. We

1 have completed our afternoon break.

2 Before we move to the staff's presentation, I
3 wanted to ask one question of Mr. O'Neill.

4 There was a point that Ms. Curran raised on
5 behalf of the county concerning the possibility of a
6 late-filed contention. Is there anything you want to say on
7 that subject? You don't have to, obviously. I hadn't
8 heard you say anything about it. You may not want to say
9 anything about it.

10 MR. O'NEILL: When she files her late-filed
11 contention, we'll respond to it. To the extent that I
12 recall what I told her, it is true still that the heat
13 exchangers were laid up with a nitrogen purge. I think the
14 issue that has been raised by the NRC inspectors is was
15 there some period of time when there was not a nitrogen
16 purge and that we looked at the condition of it.

17 But that does not say that there was not a
18 nitrogen purge, I think, for ten years on that heat
19 exchanger and certainly it's been inspected and certainly
20 it's not going to be an issue. Once again, it's not before
21 the Nuclear Regulatory Commission as part of the license
22 application because the applicant simply will put in a heat
23 exchanger that meets all of the requirements for equipment,
24 Appendix B, whether it's a new one or an old one.

25 So she can file a contention and we'll address the

1 five factors and we'll respond.

2 JUDGE BOLLWERK: All right. All right, then. Ms.
3 Uttal, I guess we're at the point now where we'd like to
4 hear from the staff. I see you have someone else at counsel
5 table with you. Would you like to introduce the person?

6 MS. UTTAL: Yes. This is Ann Hodgdon. She is an
7 attorney with the Office of General Counsel. She is keeping
8 me company, basically.

9 JUDGE BOLLWERK: I recognize she hasn't entered an
10 appearance.

11 MS. UTTAL: She is not entering an appearance.

12 JUDGE BOLLWERK: But she's not planning on saying
13 anything, so that's perfectly all right. All right.

14 MS. UTTAL: I guess I will address Your Honor's
15 last point before the break, the NRC staff's view of Mr.
16 O'Neill's discussion of the licensing process here.

17 I think Mr. O'Neill basically got it correct. If
18 the licensee had not lost the records from the construction,
19 the weld records and the like, then they could have finished
20 the piping here under 50.59. Because the pipe weld records
21 were lost, they had to come in under 50.55(a) to ask for a
22 code relief.

23 And as Mr. O'Neill stated, normally, code reliefs
24 are done without notice to the public and without hearing
25 rights. The staff does an assessment.

1 If the entire process had not implicated a USQ or
2 a tech spec amendment, a tech spec change, then, again,
3 50.59 would be utilized. In this case, there is a tech spec
4 change that is required in order for the racks and the fuel
5 to be put into the fuel pools C and D and there is a USQ
6 that is not related to what's under contention today.

7 So that's how the staff would normally do these
8 two things.

9 JUDGE BOLLWERK: All right. In terms of the
10 question I had asked him about the material alteration, did
11 you agree with his analysis on that?

12 MS. UTTAL: That there is no material alteration?

13 JUDGE BOLLWERK: Yes.

14 MS. UTTAL: Absolutely. I've had a chance to
15 review -- well, preliminarily, I'd like to say that the
16 staff objects to this new contention for basically the same
17 reasons. It is a surprise to the staff that this contention
18 has been raised. It didn't come out in discovery. It
19 wasn't part of the original contention. There has been no
20 mention of a construction permit being required.

21 My review of the case law is in accordance with
22 what Mr. O'Neill has cited. There is the Surry case, where
23 they were essentially making changes to steam generators.
24 They were replacing them, they were adding a bunch of
25 equipment, they were building apparently two buildings,

1 maybe one building, and no construction permit was required
2 because it was found not to be a material alteration.

3 And Surry was cited by the Commission when they
4 enacted the final rule on nuclear power plant license
5 renewal back in 1991, 56 Federal Register 64943, and I know
6 that that rule has been amended, but not in any way that
7 would affect the discussion that the Commission had
8 regarding what a material alteration is.

9 And clearly what CP&L wants to do here is not a
10 material alteration requiring the issuance of a construction
11 permit.

12 There is a case -- there is a Trojan case, 6 NRC
13 1179, and that was a Licensing Board case, where the Board
14 decided that a proposed amendment to an operating license to
15 permit spent fuel pool modifications need not be preceded by
16 the issuance of a construction permit. It doesn't say in
17 the case what the modification was, but, again, it was found
18 not to be a material alteration.

19 JUDGE BOLLWERK: All right.

20 MS. UTTAL: With regard to the staff's motion to
21 disqualify Mr. Lochbaum, what the staff was most concerned
22 about was Mr. Lochbaum -- any attempt by Mr. Lochbaum to
23 give an opinion regarding welding, stainless steel, the
24 corrosive effects on stainless steel, because as he
25 admitted, he is not qualified to do so.

1 And in BCOC's submittal, there is a section ,
2 regarding possible corrosive atmospheres within the piping,
3 a kind of three-zone argument, which is incorrect.

4 The corrosive effects that Mr. Lochbaum discusses
5 basically would be corrosive effects on carbon steel, not
6 the stainless steel done here, and it shows his lack of
7 expertise in this area and I think that based on what
8 happened here today, it's been clearly demonstrated what the
9 limits to Mr. Lochbaum's expertise is.

10 And I will -- in withdrawing my request that his
11 testimony be stricken as to QA and I would -- I am
12 maintaining my position that anything having to do with the
13 substantive issues here, the welding, the pipes and anything
14 like that, if there are any opinions contained in BCOC's
15 submittal, and it's very difficult, from the way BCOC's
16 submittal is written, it's all jumbled together and it's
17 hard to parse out what Ms. Curran is saying and what Mr.
18 Lochbaum I saying.

19 But if there are any opinions contained in there
20 having to do with the piping or the corrosive effects or
21 MIC, that they should be stricken or given no weight by the
22 Board.

23 JUDGE BOLLWERK: So am I to understand you're
24 withdrawing your request to have him stricken, or have the
25 portions of the testimony stricken? Is that correct or am

1 I --

2 MS. UTTAL: Yes.

3 JUDGE BOLLWERK: Yes. But you're -- go ahead.
4 I'll let you.

5 MS. UTTAL: I think that the Board will be able to
6 determine, based on this oral argument and based on the
7 submittals, the exact parameters of what Mr. Lochbaum is
8 competent to testify on.

9 JUDGE BOLLWERK: All right. So what I'm hearing
10 then is this is essentially now a weight argument, as Mr.
11 O'Neill made.

12 MS. UTTAL: Yes.

13 JUDGE BOLLWERK: I don't want to mischaracterize
14 it, but that's what you're telling me. All right. All
15 right.

16 MS. UTTAL: I looked at this contention as being
17 able to be divided into three separate areas; the original
18 construction of the welds and piping, the 15 or so years
19 that the piping was abandoned in place, and the present
20 condition of the pipes.

21 BCOC has abandoned any argument regarding original
22 construction of the welding and the pipes and I think that
23 having done that, that portion of the contention should be
24 dismissed as moot.

25 Even so, there is a lot of testimony in this case

1 by the experts, the staff experts and by CP&L's experts,
2 regarding the quality of the QA program during construction
3 and the conclusions regarding the quality of the welds in
4 the embedded piping area and the pipe.

5 As to the lay-up period, as everybody has stated,
6 there is no issue of fact regarding whether the pipe was put
7 into lay-up, to formal lay-up. It was not. It is the
8 staff's position that CP&L did not have to comply with
9 Appendix B during the time the cooling system was idle.

10 The construction permit was expired during the
11 '80s. The cooling system was not licensed, either on a
12 construction permit or an operating license, and it was not
13 serving a safety function.

14 BCOC asserts that CP&L must comply based on --
15 basically, they base it on their new contention that a CP
16 was required. But their contention is not supported by any
17 Commission requirement. So it is the staff's position that
18 BCOC has failed to meet its burden to demonstrate the
19 existence of a substantial and genuine material fact in
20 issue as to whether Appendix B had to be complied with
21 during the period of lay-up.

22 The staff agrees that the licensee failed to
23 comply with criteria 13 and 16 during the idle period, but
24 as I stated, it was not required to do so. It is sufficient
25 to demonstrate that the pipes and the welds provide an

1 acceptable level of quality and safety now prior to being
2 put in service.

3 Inspection and correction before putting the
4 system into service is acceptable. Compliance with all
5 applicable criteria of Appendix B at the time that the
6 system is put into service will be required.

7 BCOC alleges that CP&L has failed to demonstrate a
8 viable and effective program for compliance with criterion
9 16. The staff disagrees with that. As I said, they didn't
10 have to comply during lay-up. The video inspection, the
11 testing of the accessible welds, the water chemistry tests,
12 surface inspections of the accessible welds all demonstrate
13 CP&L's program for identifying any need for corrective
14 action and their willingness to perform the corrective
15 action as required by Appendix B, criterion 16.

16 The RAI responses clearly indicate that the video
17 inspection will look for MIC corrosion, debris, degradation,
18 which, in fact, it did. Dr. Davis, through the aid of the
19 tapes, if not more, and he concluded that the tapes contain
20 an enhanced visual inspection of all the piping and welds
21 that are embedded.

22 The staff independently reviewed the videos and
23 determined that corrective action was needed as to five of
24 the welds, but that the other ten welds were just fine. The
25 corrective action was taken and found to be acceptable by

1 the staff.

2 JUDGE SHON: Excuse me a moment. What were the
3 corrective actions? Do you have any immediate record?

4 MS. UTTAL: Well, one of the corrective actions
5 regarding I think it's weld, field weld 517, there were
6 brown stains on it. The licensee sent in their little
7 camera with kind of a scoopy thing and they took a sample of
8 it. Then they rinsed it out and had a filter on the bottom
9 and they took the sample and they took samples of the debris
10 to find out -- determine whether it was corrosive
11 properties, and it was found not to contain any evidence of
12 MIC or other corrosive properties.

13 JUDGE SHON: So the extent of the corrective
14 actions was largely a matter of hydrolazing and sampling and
15 examining the nature of debris and that sort of thing. I
16 mean, they didn't grind any welds or anything like that.

17 MS. UTTAL: No, they didn't grind any welds, but
18 they -- and, again, in the case of that same weld, the
19 cleaning of the weld was observed on videotape and the weld
20 was then looked at again after the stains had been removed
21 and it was found to be without problem.

22 I want to point out that this video taping is not
23 just a visual inspection. It is an enhanced visual
24 inspection. It was highly magnified, to such a point that
25 it could see a flaw that was one mil thick.

1 JUDGE SHON: I understand that they tested it with
2 one mil wire and could see that sort of thing.

3 MS. UTTAL: That's correct.

4 BCOC has asserted that CP&L has failed to show
5 that the embedded piping is in a condition that is
6 acceptable for licensing and they assert that corrosion and
7 degradation of the pipes may have occurred during the period
8 it sat idle and unattended, and that the video examination
9 and the one-time water chemistry test is insufficient and
10 doesn't account for the period of lay-up and the possible
11 bacterial contamination of the last 15 years.

12 BCOC claims that the video revealed signs of
13 corrosion and degradation and that CP&L has not adequately
14 investigated or resolved, and, finally, that there is no
15 plan to demonstrate that the pipes and welds have not
16 deteriorated over the last 15 years.

17 The staff disagrees with that and the staff's
18 assessment of CP&L's investigation in this area is contained
19 in Dr. Davis' affidavit and Mr. Naujock's affidavit. The
20 staff concluded that the visual examination, plus the
21 evaluation of the weld materials in the accessible welds,
22 the chemistry tests, the QA records, the examples of the
23 other piping, show that there is an acceptable level of
24 quality and safety and that the welds and pipes are fit for
25 service, fit to perform their safety function.

1 One comment about the water chemistry exam and the
2 fact that it was only done once. Water chemistry can show
3 if there are corrosive elements in the water; in this case,
4 there were none; or evidence of MIC in the water and, again,
5 in this case, there were none.

6 It is not the best way of determining whether
7 there is MIC in a piping system. The visual examination,
8 the enhanced visual examination is a far better way of
9 determining whether there is MIC, because MIC leaves signs
10 that it's there. It's an anaerobic bacterial and it builds
11 itself a little home and you can see the little tubercle at
12 the weld. None of that was observed in this case.

13 In addition, for ten years, the water has been
14 pool water, demineralized, borated water, and borated water
15 is an inhibitor of MIC. BCOC argues that there could have
16 been isolated pockets of bacterial activity in the air field
17 zone.

18 This is not probable with stainless steel piping.
19 The assertions contained in BCOC's summary in this regard
20 are incorrect. There could not have been isolated pockets
21 of bacterial activity in air field or interface zones. The
22 MIC, as I said, is an anaerobic bacteria. It doesn't --
23 it's not active in air. The pipes and welds are stainless
24 steel. Stainless steel exhibits excellent resistance to
25 many environments. It possesses better corrosion resistance

1 than other steels and generally has the best resistance of
2 any of four groups of steels.

3 The type 304 stainless steel used in the cooling
4 water and cleanup system piping is austinitic stainless
5 steel, which is the steel that has the better corrosion
6 resistance. It is resistant in the atmosphere and is used
7 where contamination or rust is undesirable.

8 This means that the stainless steel used in the
9 embedded pipes will protect itself even if the surface of
10 the pipe is scratched or mechanically damaged; that is, it
11 will passivate. It will form an oxide film on itself to
12 keep itself from getting -- I'm a layman trying to explain
13 this, but to keep itself from corroding.

14 Therefore, the discussion of these three
15 environments that's contained in BCOC's brief is -- and the
16 possible effects -- demonstrate a lack of understanding of
17 the properties of the stainless steel and also the ability
18 of sulfate-reducing bacteria to remain active during periods
19 when there is no water present, such as in the air field or
20 interface zones.

21 Humidity will not lead to growth of anaerobic
22 bacteria, such as MIC.

23 It's the staff's position that the crux of this
24 matter is the condition of the pipes today before they are
25 put into service. The staff has concluded that the licensee

1 has demonstrated that the pipes are -- the pipes and the
2 welds are in good condition, that there is no corrosion that
3 was observed. There was one pit or depression that was not
4 uniformly seen by all the experts; in fact, Dr. Davis saw
5 no evidence of pitting at -- I think it's weld 517.

6 The staff viewed the videos that BCOC has alleged
7 covered only the field welds and not the piping and the shop
8 welds and the staff disagrees. The video camera went down
9 the entire length of the piping. The lights were on. The
10 video camera was able to discern the indications that were
11 there. No reason for it to discern indications that were
12 not there.

13 BCOC claims that the staff conceded that the
14 inspection did not examine the piping and it cites to page
15 22 of the inspection report, which I believe was submitted
16 with a lot of affidavits in this case. But BCOC did not
17 site to page 23 of that same report, which contains a
18 discussion of the staff's review of the video of the shop
19 welds and the piping.

20 BCOC states that the debris seen was not
21 identified. It was, in fact, identified and described, and
22 a discussion of that is contained in the inspection report
23 at page 22.

24 In addition, and I think Mr. O'Neill covered this
25 pretty well, Mr. Lochbaum's recitation of the commentary on

1 the videotape is incomplete and gives a distorted view of
2 the comments and the observations.

3 Dr. Davis prepared a transcript of what was
4 actually on the videotape. I don't think I want to take up
5 the Board's time reading it, but I will give the Board --
6 the Board has the tape submitted by Ms. Curran and starting
7 at -- this is Exhibit 17.

8 JUDGE BOLLWERK: All right. That is six tapes, if
9 I remember correctly, or is it five? I don't remember.

10 MS. UTTAL: Five tapes, I understand. This would
11 be the tape that's marked Exhibit 17, beginning at position
12 8:26 and continuing through the tape to position 49:22, is
13 the discussion of the camera operator regarding the two
14 particular welds that he was looking at.

15 I think that if the Board reviews that, they will
16 get a complete picture of what was going on. As Mr.
17 O'Neill pointed out, the video camera operator was trained
18 in inspecting and had to do an enhanced video inspection,
19 but he would not be expert on corrosion of welding.

20 Dr. Davis concluded that the operator looked at a
21 weld and due to the quality of the weld, thought it was a
22 shop weld, then moved on to what he thought was field weld
23 number 66, but he discovered that this weld was a shop weld
24 due to the presence of the grinding marks.

25 The operator thought he saw a lack of fusion, but

1 after looking at these indications from different angles and
2 with different lighting, he concluded that the indications
3 were shadows that disappeared as the lighting was changed.
4 He then went back to field weld 66 and started looking at
5 that.

6 Dr. Davis found no evidence of large mounds of
7 organic material associate with MIC. He did not see, as I
8 said, any evidence of pitting at field weld 517. There has
9 been some talk regarding the boric acid crystals and the
10 fact that nobody analyzed the crystals to see if they were
11 boric acid. Both Dr. Davis and Mr. Naujock looked at the
12 videos and they concluded that it was, in fact, boric acid
13 crystals.

14 Despite BCOC's argument that there could have been
15 corrosion and degradation, there was no evidence of
16 degradation in the piping. There was no evidence of
17 degradation in the piping. BCOC has not produced any expert
18 testimony to demonstrate that there has been any degradation
19 or corrosion in the piping and all the experts who have
20 viewed these tapes and examined the materials have concluded
21 that there was no evidence. They concluded that the
22 embedded piping and welds are in good shape and there was no
23 evidence of corrosion or MIC.

24 It comes down to this, end in the end, the crux of
25 the matter is whether there is reasonable assurance that the

1 -- excuse me -- assurance that the pipes are fit for their
2 intended use as a system with a safety function.

3 All the experts agree that they are. There is no
4 expert testimony to the contrary. Therefore, there are no
5 genuine and substantial material facts in issue.

6 There is no reason for any further evidentiary
7 hearing or live testimony. All issues can be decided based
8 on the record before the Board. It would be different
9 perhaps if the staff had not required CP&L to complete the
10 examination on welds before it approved the plan, but since
11 the inspection has been completed and the staff finds the
12 welds and the piping acceptable and no further corrective
13 action or inspection is required, no further evidence is
14 needed.

15 The intervenor has not met the burden to show that
16 there are substantial and genuine material facts in issue
17 that require further evidentiary hearing.

18 And the new argument that was brought up by BCOC
19 in their filing regarding the CP is beyond the scope of this
20 contention and should not be addressed by the Board.

21 Thank you.

22 JUDGE BOLLWERK: Judge Lam.

23 JUDGE LAM: Ms. Uttal, in Part 50.55(a), it says
24 the applicant shall demonstrate that the alternative
25 proposed plan would provide an acceptable level of quality

1 and safety.

2 My question is, does the staff have an acceptance
3 criteria? What is acceptable and what is not?

4 MS. UTTAL: I tried to explain it in the brief and
5 I think it's explicated in Mr. Naujock's affidavit. In
6 order to determine whether there is an acceptable level of
7 quality and safety, the staff does it basically on a
8 case-by-case basis, based on what is before it, because when
9 it comes to a lot of these code relief cases, each one has
10 unique properties, and this one has a lot of unique
11 properties because different things are being requested.

12 So what the staff does is look at the code
13 requirement, look at what the alternative is, determine
14 whether the alternative fulfills the purpose of the specific
15 code requirement. So that if the code requirement is that
16 you shall do non-destructive testing, you shall do a liquid
17 penetrant test of the welds, and the licensee says, well, as
18 done in this case, we can't do that, because we can't go to
19 the outside of the welds, let's do an enhanced visual
20 examination, the staff has to decide whether the enhanced
21 visual examination will provide the same level -- an
22 acceptable level of quality and safety that the code test
23 would require.

24 And they go through each of the requirements in
25 turn to determine whether the purpose of the code is met.

1 JUDGE LAM: So the acceptance criteria is on a
2 case-by-case basis and the staff had a great deal of
3 discretion in determining what would be an acceptable level
4 in this case.

5 MS. UTTAL: There is --

6 JUDGE LAM: And any other cases.

7 MS. UTTAL: There is discretion and there is
8 discretion. Their decision is based on the knowledge of the
9 code and careful reading of what the code requires and then
10 a careful look at what the plan requires and a certain
11 amount of engineering judgment has to go into the decision
12 as to whether there is an acceptable level of quality and
13 safety.

14 JUDGE LAM: So is it true, if I were an applicant
15 today, if I come in to submit an application, I really would
16 not know what would constitute an acceptable level to the
17 staff until I hear from you?

18 MS. UTTAL: I don't know how to really answer that
19 question. The staff has a lot of experience in this area.
20 There are many of these code reliefs done every month, every
21 year. I personally see a lot of them during the year and
22 I'm just --

23 JUDGE LAM: I'm not being critical about the
24 process.

25 MS. UTTAL: No, but what I'm trying to say is --

1 JUDGE LAM: I'm just asking.

2 MS. UTTAL: -- that the staff uses its experience
3 and there are code cases and there are other cases where
4 things are done. So I don't think a licensee would come in
5 with absolutely no idea as to whether it might be approved
6 or what the staff's criteria are, because one would assume
7 that the licensee would also look to the code to see what is
8 required before making their request to use an alternative.

9 JUDGE LAM: Thank you.

10 JUDGE BOLLWERK: Anything else, Judge Shon?

11 JUDGE SHON: Yes. I have one small item. I
12 notice in regard to the Structural Integrity Associates
13 report, the BCOC quoted a portion of that report concerning
14 reddish-brown deposits and apparent entrance holes in the
15 welds and said that SIA concluded that a definitive
16 determination of the root causes for these small pits would
17 require careful microbiological and chemical evaluation of
18 them and a sampling of the deposits and of the pit interior
19 to augment the visual inspection of the as-found condition.

20 Now, I know that the staff is often very
21 interested in root causes. Is this the sort of root cause
22 that you would feel it necessary to pursue?

23 MS. UTTAL: I think this is the weld where our
24 expert does not see pitting, so. I believe that's in
25 reference to field weld 517. Dr. Davis did not observe on

1 the videotape what he considered to be pitting.

2 JUDGE SHON: Yes, that's the one. He simply
3 didn't -- your expert doesn't see these things.

4 MS. UTTAL: He didn't see that one or he
5 disagrees.

6 JUDGE SHON: Okay.

7 JUDGE BOLLWERK: But there was a question with
8 CP&L's expert, correct? They were the ones that --

9 JUDGE SHON: Well, SIA wrote the report.

10 JUDGE BOLLWERK: SIA.

11 JUDGE SHON: This Structural Integrity Associates,
12 is that their name? Yes. And they seem to think that
13 something more might be done, but whether the something more
14 would contribute to safety and the general protection of the
15 public is kind of what I was asking.

16 MS. UTTAL: I think that SIA, even in saying that
17 there was this small pit, concluded that it would have no
18 effect on the piping.

19 MR. O'NEILL: Judge Shon, could I respond?

20 JUDGE SHON: Please do.

21 MR. O'NEILL: Because there is a timing issue here
22 that I think may have gotten confused.

23 We had provided to Ms. Curran an early version of
24 the SIA report at the time that it was first produced, Rev.
25 0, and that was before. The company spent the money to go

1 back in and take another look at 517.

2 JUDGE SHON: I see.

3 MR. O'NEILL: What they did was to, okay, let's
4 look at that little spot which Mr. Licina thinks might be
5 an indication of a pit and Dr. Moccari did not, Dr. Davis
6 found it did not, but let's look at it more carefully and
7 let's analyze it for potential MIC.

8 So if you read Dr. Moccari's affidavit, you will
9 see that subsequently, this is a second inspection of 517,
10 you go back in, these little teeny brownish-red spots, you
11 take the little scoop, take a piece off and analyze that
12 little piece that came off there and say, okay, is there any
13 bacteria on that residue that would be indicative of MIC.
14 Answer, no. It's iron oxide.

15 So the chronology is such that Mr. Licina raises
16 this issue and says if you really want to know, you're going
17 to have to go in and sample it. The initial reaction was
18 who cares, but then to answer all the questions, make sure
19 there is no issue in dispute, they go back in and analyze it
20 and that is described in Dr. Moccari's affidavit and his
21 report.

22 JUDGE SHON: In other words, in effect, you've
23 done the additional work, right?

24 MR. O'NEILL: Yes. Yes. Notwithstanding the fact
25 that it really didn't matter.

1 JUDGE SHON: Right.

2 JUDGE BOLLWERK: Any additional Board questions?
3 I had one question that goes to something Judge Lam had
4 asked earlier.

5 I guess there was a statement in the applicant's
6 filing about pathways to the environment. Basically, there
7 are none. I don't think the staff had any kind of statement
8 about that, although they did indicate that I guess they
9 felt that any leakage would not cause a problem in terms of
10 the pool cooling.

11 Do you have anything you want to add in terms of
12 pathways to the environment?

13 MS. UTTAL: I think that Mr. O'Neill's discussion
14 is correct, that the water would -- if any water was to leak
15 out, it would leak into the drains, ultimately, and be
16 disposed of that way as radioactive water. I don't think
17 that there is a pathway out of the fuel pool building other
18 than that.

19 JUDGE BOLLWERK: Anything from either of the Board
20 members? All right. Ms. Curran, would you like to take a
21 brief break or are you ready to proceed?

22 MS. CURRAN: Five minutes would be helpful.

23 JUDGE BOLLWERK: That would be fine. Why don't we
24 take five minutes and then we'll wrap up.

25 [Recess.]

1 JUDGE BOLLWERK: Let's go back on the record,
2 please. Before we go to Ms. Curran for her reply on behalf
3 of the county to the staff's and applicant's discussions and
4 arguments, I guess Judge Shon has a question.

5 JUDGE SHON: Yes. I had one question primarily
6 for Mr. O'Neill. You assure us that because these pipes
7 are set in concrete, there is no path to the environment.
8 But as an old hand in the business, I recall some years ago
9 when Brookhaven National Laboratory got into all sorts of
10 difficulty because their spent fuel pool water leaked into
11 the environment, even though the fuel pool itself was set in
12 concrete, or as far as I know, it was.

13 Is there something that definitely distinguishes
14 this situation here from the situation there?

15 MR. O'NEILL: The simple answer to the question of
16 leakage over time at Brookhaven is there was no spent fuel
17 pool liner. So I don't know how much reinforced concrete
18 was underneath the pool, I don't think there was very much,
19 to be honest with you, but there was no liner.

20 There is a stainless steel liner in these pools.
21 So there is no opportunity for, over time, any leakage into
22 concrete of any substantial effects. That's number one.
23 That's the Brookhaven situation, which is not here.

24 But secondly, if there were leakage anywhere which
25 would find its way toward this ten-foot mat, which I'm

1 pretty sure they didn't have a ten-foot reinforced concrete
2 mat at Brookhaven, it's going to go in drains, that's
3 assuming there is any water of any substance, which is hard
4 to envision, almost impossible to envision, not credible in
5 the reinforced concrete welds itself, because how is 25
6 pound water going to push its way through three feet of
7 reinforced concrete.

8 It's not going to happen. It's going to hit a
9 little void and it's going to stop. But assuming that
10 someplace, maybe right at the point where the pipe comes out
11 of the wall, somehow there is a substantial leakage and the
12 water leaks out to the five-foot level and then stops, it's
13 going to go down to the drains and it's going to be pumped
14 through to the waste processing building and processed as
15 radioactive water.

16 That's the way this building is designed.
17 Brookhaven's problem, I think, related to the building
18 wasn't designed to this extent and, over time, without the
19 liner, there is a stainless steel liner in the pool, the
20 water was leaking from the pool.

21 I don't think it's really relevant to our
22 situation at Harris.

23 JUDGE SHON: In effect, this pool has catch basins
24 under it, you're saying, and the pipes have catch basins
25 under them.

1 MR. O'NEILL: The Brookhaven pool was right on the
2 ground. You have -- as you can just tell from this diagram,
3 you have a number of rooms under here.

4 JUDGE SHON: Right, all of which have drains in
5 them.

6 MR. O'NEILL: Correct.

7 JUDGE SHON: Yes.

8 MR. O'NEILL: So whereas at Brookhaven, you're
9 right on the ground, and so whatever the mat was, which I
10 don't know, and without a -- leakage could get through and
11 apparently did. But that's a very different situation in
12 this building.

13 JUDGE SHON: Thank you.

14 JUDGE BOLLWERK: Anything further?

15 JUDGE SHON: No.

16 JUDGE BOLLWERK: All right. Ms. Curran?

17 MS. CURRAN: I'd like to just begin by drawing the
18 Board's attention to the first paragraph of technical
19 contention three, which contains the crux of our argument
20 here, and it says that CP&L's proposal to provide cooling of
21 pools C and D by relying upon the use of previously
22 completed portions of the Unit 2 fuel pool cooling and
23 cleanup system and the Unit 2 component cooling water system
24 fails to satisfy the quality assurance criteria of 10 CFR
25 Part 50, Appendix B, specifically criterion 13 and criterion

1 16 and 17.

2 The rest of the contention is addressed to the
3 alternative plan, but this first section addresses CP&L's
4 longstanding non-compliance with Appendix B and asserts that
5 that non-compliance with Appendix B renders the license
6 amendment application deficient.

7 Just so that there is no confusion on the Board's
8 part as to whether this is a challenge to the alternative
9 plan or to CP&L's non-compliance with Appendix B.

10 It is now very clear, as a result of this oral
11 argument, that CP&L and the NRC staff both consider that
12 CP&L's non-compliance with Appendix B over the last 15 to 17
13 years is completely irrelevant to this license amendment
14 proceeding. Part of our case here is explaining to the
15 Board why that just isn't so.

16 It is a fundamental part of our presentation on
17 the admitted portion of contention three to show that as the
18 regulations are written, they require a demonstration by
19 CP&L that it has complied with Appendix B, dating back to
20 the time of construction, and that compliance has continued
21 without interruption since that period.

22 It's interesting to think about the implication of
23 CP&L and the NRC staff's theory about this, which is --
24 seems to be that basically, if, supposing you had a nuclear
25 power plant that was built and finished and the permittee

1 decided that it wanted to wait another ten years or so
2 before it applied for an operating license.

3 Under the reasoning used by CP&L and the NRC
4 staff, the permittee could just walk away from this nuclear
5 plant and return 15 years later, submit an operating license
6 application and say that it really didn't matter what
7 happened during that time of diffuse, because at that point
8 in time, the equipment wasn't being used for any safety
9 purpose.

10 I don't think the NRC would ever accept such a
11 rationale, but that's the kind of reasoning that's being
12 offered here.

13 Both CP&L and the NRC staff give examples of other
14 cases, one in particular where steam generators were
15 apparently replaced and that it was not considered a
16 material alteration to the facility.

17 In our view, that constitutes a distinctly
18 different situation than what we have here. In the case of
19 steam generator replacement, a steam generator has been
20 installed, maintained, licensed under the operating license
21 and then is replaced with something else that's presumably
22 equivalent and meets the same criteria.

23 What we have here is very different because there
24 is no construction permit and there is no operating license
25 for the portion of the pools C and D cooling system that was

1 built earlier and abandoned. It might as well be as if that
2 equipment didn't exist.

3 JUDGE BOLLWERK: I guess that was my question to
4 Mr. O'Neill, which is if they were to simply come in and
5 build these pools from scratch in the fuel handling
6 building, would that mean a material alteration, and his
7 response to me, if I remember correctly, was no, that would
8 not be a material alteration. But I take it you do not
9 agree with that, obviously.

10 MS. CURRAN: We don't.

11 JUDGE BOLLWERK: All right.

12 MS. CURRAN: It involves essentially building or
13 assuring that something has been built to NRC specifications
14 for construction. That step has to be taken before the
15 operating license can be amended.

16 JUDGE BOLLWERK: Let me just interrupt you one
17 second while we're on this issue. Ms. Uttal, what is your
18 position on the question of whether CP&L, if they were to
19 put these new pools in from scratch, would that be a
20 material alteration?

21 MS. UTTAL: I believe it might be, Your Honor,
22 yes.

23 JUDGE BOLLWERK: You believe it would be.

24 MS. UTTAL: Yes.

25 JUDGE BOLLWERK: All right. And maybe then -- but

1 you're saying that the fact the pools are already there does
2 not make this not a material alteration.

3 I'm sorry, Ms. Curran. I thought it was probably
4 a good idea to --

5 MS. CURRAN: That's fine.

6 MS. UTTAL: Your Honor, I want to amend my answer.
7 I don't know whether it would be a material alteration or
8 not. I don't want to misstate the staff's position.

9 JUDGE BOLLWERK: What makes you think it might not be? Let
10 me put it that way.

11 MS. UTTAL: Well, they would be -- there would be
12 a question whether it changes the fundamental purpose of the
13 facility and whether it would change -- the design basis
14 would have to be analyzed.

15 JUDGE BOLLWERK: Does anybody have a question?

16 JUDGE LAM: Yes. Ms. Uttal, perhaps you can
17 elaborate on just what exactly does your recollection mean
18 when you say material alteration.

19 MS. UTTAL: I wish I could, but there are very few cases
20 that discuss this and because it was kind of a surprise
21 contention to the staff, I didn't have an extended period of
22 time to look into it.

23 But I would suggest that one could look at the
24 cases cited in the Surry case and the final rule that I
25 cited before to kind of home in on what might be considered

1 material alteration. And what the Commission said in the
2 rulemaking was that the cases that they discussed suggest
3 that material alterations of nuclear power plants occur when
4 the fundamental nature of the facility altered so that the
5 design basis implementing the principal design criteria for
6 this facility are changed.

7 So in the case of CP&L, because they have this
8 huge fuel handling building, I just don't know if it would
9 be a material change or not to add another fuel pool that's
10 basically serving the same purpose as the fuel pools that
11 are already there.

12 JUDGE BOLLWERK: Would it make any difference if
13 the building were not as huge? Let's say it was a smaller
14 size fuel pool building and they just decided to add onto it
15 and knock out the wall and put two more pools in.

16 MS. UTTAL: I don't know, Judge.

17 JUDGE BOLLWERK: All right. Ms. Curran, I'll go
18 back to you then. I don't know if that gives you anything
19 further you want to say about the question of material
20 alteration or not.

21 MS. CURRAN: I think that one relevant inquiry
22 with something like that, and not having any other specific
23 examples before me, this is kind of general, but I would
24 think that one relevant factor as to whether there has been
25 a material alteration being proposed is whether the part of

1 the plant that's being altered is already covered by a valid
2 license of some kind or construction permit, and that's the
3 situation that we have here.

4 It's that CP&L basically decided back in the early
5 '80s that it was only going to have a one-unit plant and it
6 made a number of -- it took a number of actions that
7 followed from that decision and one of the actions it took
8 was to discontinue any attempt to maintain the as-built
9 portions of the plant that were being abandoned in
10 compliance with Appendix B.

11 So that in our view, when one wants to put into
12 service equipment that's been previously built for which the
13 regulations have not been complied with, that constitutes a
14 material alteration.

15 But I'd like to move on to the other part of the
16 standard, which is in an operating license amendment
17 proceeding, to the extent applicable and appropriate, it's
18 relevant to consider the kinds of requirements that would
19 have been imposed at the initial operating license state,
20 and, in our view, as we set forth in our summary, one of
21 these inquiries is whether or not equipment that is proposed
22 to be put into service complies with Appendix B.

23 Now, CP&L has talked at length about Section 50.59
24 and the staff has, too, and it appears to us that the staff
25 decided to require an operating license amendment for the

1 alternative plan because CP&L didn't have the construction
2 quality assurance records that it needed in order to get --
3 in order to be able to make the changes without a license
4 amendment.

5 In other words, if you come in for -- if you want
6 to change to rely on equipment for which you haven't kept
7 the original construction permit quality assurance
8 documents, then that's an unreviewed safety question and you
9 need an operating license amendment.

10 Well, it's the same case if you haven't kept or
11 have not endeavored to keep Appendix B criterion 13 records.
12 CP&L doesn't have any records that it was required or should
13 have kept under Appendix B showing that it monitored or kept
14 under surveillance the condition of the abandoned piping
15 during those 15 to 17 years.

16 So it's a comparable situation. Not having those
17 records, not being able to show continuous compliance with
18 Appendix B, CP&L should have to undertake some kind of
19 licensing action to show that that's acceptable.

20 But in this case, CP&L has endeavored to basically
21 shunt the whole equipment commissioning plan off to the side
22 of this licensing proceeding. CP&L doesn't even concede
23 that the condition of the piping as it has been maintained
24 for the past 17 years is even relevant to this licensing
25 case.

1 CP&L argues that it is not seeking conversion of a
2 construction permit in this case, that it already has an
3 operating license. It's my understanding that CP&L has an
4 operating license that covers pools A, B, C and D, but the
5 operating license does not extend to the cooling system for
6 pools C and D.

7 Therefore, the regulations that require the
8 conversion of a construction permit to an operating license
9 would apply to that specific portion of the Harris plant,
10 the cooling system for pools C and D.

11 Mr. O'Neill says that he's not aware of any other
12 situation where a construction permit has been issued in
13 advance of an amendment to an operating license. I, for
14 one, am not aware of any other situation in which a licensee
15 that had abandoned some portion of its facility for a
16 lengthy period of time came in to the NRC seeking to put
17 that portion of its facility into operation.

18 Perhaps there is another -- an example of that,
19 but I'm certainly not aware of any. This seems to be an
20 unusual case that requires a close examination of the
21 regulations and what they require.

22 Mr. O'Neill characterizes this commissioning of
23 the spent fuel cooling system for pools C and D as hooking
24 something up, but what CP&L would like to hook up is it
25 would like hook up a part of the facility that is now

1 subject to CP&L's operating license to another piece of the
2 facility that isn't subject to any license, any construction
3 permit, no NRC regulation at all.

4 So this isn't a simple issue of hooking up one
5 licensed piece of this facility to another. It's adding
6 something that has no lawful construction permit, no lawful
7 quality assurance program to a part of the facility that
8 does, and that's where CP&L needs to go back and demonstrate
9 that it has a program for completing the construction of
10 this other part of the facility for which no permit exists
11 and then once construction is finished, that it's been done
12 properly.

13 Now, we're not insisting that CP&L do this. We're
14 just explaining how the regulations work.

15 JUDGE BOLLWERK: Just so I'm clear on what you
16 just said, when you say you're not insisting they do this,
17 but you are saying that this operating license can't be
18 granted.

19 MS. CURRAN: That's right.

20 JUDGE BOLLWERK: All right. But you're not saying
21 they need to go back and --

22 MS. CURRAN: No.

23 JUDGE BOLLWERK: -- it's then up to them.

24 MS. CURRAN: It's up to them.

25 JUDGE BOLLWERK: All right.

1 MS. CURRAN: In this argument of the staff and
2 CP&L that the past Appendix B non-compliance is irrelevant
3 and that only perspective compliance is relevant is very
4 troubling to us, because what it really says is that these
5 requirements in Appendix B, the kind of cradle-to-grave
6 aspect of Appendix C -- Appendix B, which requires a
7 construction permittee to ensure throughout construction,
8 following construction, and then following the issuance of
9 the operating license, that Appendix B is met, that this
10 provision can simply be ignored and allowed to lapse and
11 that the licensee will be rewarded with a decision that
12 completely ignores that lapsed period, completely ignores
13 the non-compliance with Appendix B.

14 It not only renders Appendix B a nullity, renders criterion
15 13 a nullity, but it actually rewards licensees for
16 non-compliance.

17 Under this theory, it seems like a good idea, if
18 you think that you might be delayed in ultimately getting an
19 operating license, to use some piece of equipment, to just
20 let your Appendix B program lapse. No problem.

21 JUDGE BOLLWERK: The only thing I'd say is doesn't
22 it -- I should say, if they had not -- let's say they had
23 kept their Appendix B program in place and they had done
24 what they needed to do. I take it they wouldn't have had to
25 go through all the inspections and everything that they've

1 had to get this point, isn't that true? I mean, isn't that
2 the price they've paid? Assuming that's --

3 MS. CURRAN: Yes. They probably wouldn't have had
4 to do that, because they could have shown through their
5 record-keeping that they knew what was going on in the
6 system. But that's not to concede that what they've done is
7 adequate to compensate.

8 JUDGE LAM: Do you -- Ms. Curran, do you have an
9 adequacy criteria for them if they are willing and able to
10 listen to you? What constitutes adequacy here?

11 MS. CURRAN: I don't want to lay out what the
12 requirements for a construction permit amendment would be
13 here, because I don't think that's Orange County's job. I
14 think that's the NRC's job to enforce its regulations and
15 require that when a utility wants to put a piece of unused
16 equipment like this, a large system, into service, that it
17 comply with the regulations.

18 But I can certainly tell you elements of what
19 Orange County would want to see. Orange County would want
20 to see some demonstration that the piping had been actually
21 looked at, which we have not seen, and I'll go into that in
22 a minute.

23 And Orange County would not want to see an
24 application that says, well, if the piping leaks, it's no,
25 never mind, because there's plenty of concrete and we don't

1 think it's going to go through.

2 A construction permit application would seek to
3 use quality material, quality piping, safety piping that met
4 the standard and that didn't have some kind of a fallback
5 position that it really doesn't matter if it doesn't have an
6 adequate degree of integrity.

7 That's the -- there's a basic conceptual
8 difference between what's being offered here and what would
9 be required in a construction permit, I think.

10 JUDGE BOLLWERK: So you're saying based on -- I
11 don't want to put words in your mouth, you tell me if I'm
12 wrong. Unless this piping were torn out and replaced,
13 you're not going to be satisfied.

14 MS. CURRAN: At this point, we have not seen a
15 demonstration that CP&L knows what the condition of the
16 piping is to a sufficient degree. CP&L has basically looked
17 only at the 15 embedded welds and there is a significant
18 dispute of fact between the parties on this because CP&L and
19 the NRC staff insist that the piping was looked at, but
20 there are too many contradictory pieces of evidence in this
21 record to accept that assertion without question.

22 For instance, I'd just like to clear up this
23 inference which I took from Mr. O'Neill's argument that
24 there were two separate videotape inspections of the piping,
25 one for the welds and one for the piping.

1 There was one set of inspections of the pipes or,
2 in our view, the welds, and the videotape inspection was
3 used for two purposes. One was to support the alternative
4 plan with respect to the construction qualification of the
5 welds and the other purpose for which the video camera
6 inspection was used was to support CP&L's assertions
7 regarding the quality of the piping itself.

8 We believe that what actually happened was that
9 only the welds were inspected, because, for a number of
10 reasons. One is that the procedure that was used to inspect
11 the welds and the piping only contained criteria for
12 inspection of the welds. The reports that were supposed to
13 be attached to the procedure, which is procedure SPP-0312T,
14 it's one of the exhibits to our summary, as an attachment to
15 the procedure, there were weld data sheets that were filled
16 out by CP&L.

17 These weld data sheets don't contain information
18 about the condition of the piping. They contain information
19 about the condition that CP&L observed of the welds.

20 It's also notable that the expert that was hired
21 by CP&L, Mr. Licina, appears to have scrupulously avoided
22 basing his conclusions about the condition of the piping
23 itself on the inspection of the welds. His report, the SIA
24 report, Revision 0 and Revision 2 are both -- both contain
25 titles that refer to videotape inspection of welds. These

1 titles do not refer to videotape inspection of the piping.

2 In addition, when you look at the conclusion
3 section of both Revision 0 and Revision 2, Mr. Licina
4 reaches specific conclusions about the quality of the welds,
5 the field welds, based on his review of the videotape
6 inspection. He reaches no equivalent conclusion about the
7 condition of the piping based on the videotaped inspection.

8 His conclusions about the piping are based on
9 other factors, not the videotape.

10 In addition, Ms. Uttal referred to the NRC
11 inspection report which concluded that the videotape
12 adequately inspected the piping. But if you look at page 23
13 of the inspection report, it says that the staff bases its
14 conclusion that the videotape was adequate to inspect the
15 piping on the data sheets that are attached to that
16 procedure, SPP-132312T.

17 If you look at those data sheets, they don't say
18 anything about the piping. They talk about the welds.

19 So all of this evidence indicates to us that the
20 videotape inspection has been more or less stretched beyond
21 its real capacity to try to cover the quality of the piping
22 itself, but that the inspection of the -- the videotape
23 inspection of the piping just didn't happen.

24 I would also like to respond to Mr. O'Neill's
25 assertion that the quality of the water in the piping for

1 spent fuel pools C and D is pure and that no contaminated
2 water could get into the pipes because the water comes from
3 the spent fuel pools.

4 What he doesn't acknowledge is that many years
5 ago, when these pipes were hydro tested, it's possible that
6 lake water was used and it's not clear, because CP&L
7 apparently hasn't maintained all of its records, whether the
8 pipes were adequately flushed after this happened.

9 So that because there hasn't been an adequate
10 record from the past, it cannot be hypothesized, based on a
11 single water sample taken in 1999, that these pipes have
12 never seen contaminated conditions. There simply isn't any
13 basis for doing that.

14 Mr. O'Neill also argues that Mr. Lochbaum misconstrued the
15 videotape operator's comments about the shop welds that were
16 -- or the single shop weld that was observed during the
17 videotape inspection and that the video camera operator was
18 not qualified to make comments about the shop weld.

19 But the important thing to remember about this is that Mr.
20 O'Neill conceded that the video camera operator did run
21 across the shop weld and as CP&L has acknowledged or has
22 asserted here, welds are more vulnerable than piping to
23 microbiologically-influenced corrosion. So this raises the
24 question of if CP&L noticed during this video camera
25 inspection that there was a shop weld here that had not been

1 included in the procedures for examining welds, why didn't
2 CP&L follow that up?

3 Why didn't CP&L inquire whether there are other
4 shop welds included in this piping? Why didn't CP&L
5 attempt to identify them and examine them? That isn't
6 explained.

7 It's also been stated here that when foreign
8 material was seen in the piping or on the welds, that it was
9 identified. This may be true with respect to Mr. Licina's
10 report, which did discuss the identification of some foreign
11 substances on the welds, but it is not true with respect to
12 the weld data sheets that are attached to the Revision 2 of
13 the Licina report. These were the weld data sheets that
14 were kept by CP&L employees when they inspected the welds.

15 One of the concerns raised in Orange County's
16 summary is that although CP&L's procedure for inspecting the
17 welds required it to take samples or investigate any foreign
18 materials that were seen on the surface of the welds, CP&L
19 hydrolazed the welds, cleaned the welds without
20 investigating this.

21 Now, later on, when Mr. Licina did his
22 evaluation, he took some samples of the material, but once
23 again, CP&L itself, in implementing its own procedures for
24 doing this equipment commissioning and inspecting the
25 piping, didn't follow its own procedures, and that's a

1 concern to Orange County, that the actual -- that the ,
2 procedures were not ultimately adhered to until CP&L hired
3 an independent consultant to come in and do a second
4 evaluation of the piping, of the welds.

5 I think I've already mentioned a little bit of our
6 concern about CP&L's argument that it really doesn't matter
7 if the pipe leaks because the water is going to go into a
8 drain. CP&L has offered some information here about the
9 design of the Harris facility, which we would certainly
10 hope, if there was some leakage from a pipe, that water
11 would be captured by drains, but the fact is that there have
12 been at least three other facilities at which tritium
13 contaminated water has leaked from spent fuel cooling
14 systems, and they include the Brookhaven lab, San Onofre,
15 and Indian Point 2.

16 So that with this kind of experience in mind, it
17 isn't satisfactory to Orange County to say that it's okay if
18 the piping leaks, that it's a no, never mind. We would like
19 to see the piping held to the NRC standard for quality
20 assurance for safety piping, which is, after all, the
21 purpose of requiring that a licensee use qualified piping to
22 perform safety functions.

23 CP&L and the NRC staff both argue that Mr.
24 Lochbaum's testimony in this proceeding should be given very
25 little weight because he doesn't possess the expertise

1 necessary to testify regarding the adequacy of CP&L's ,
2 program for addressing the potential corrosion and
3 degradation of the piping.

4 I think the Board can see that much of what and
5 most of what Mr. Lochbaum testifies to are issues that can
6 be addressed by a nuclear engineer by evaluating whether
7 programs and procedures are thorough and carried out in the
8 manner to which they have been committed to be carried out.

9 Those are things for which Mr. Lochbaum does not
10 require any particular expertise in any narrow area that
11 might relate to the inspection of piping and what that
12 means. His expertise relates to his ability to be able to
13 look at a program for quality assurance that sets forth
14 various criteria and determine whether those criteria are
15 complete and then whether they're applied adequately, and
16 this he has done.

17 His testimony should be given full weight. That's
18 all I have.

19 JUDGE BOLLWERK: All right. Any questions?

20 JUDGE SHON: With regard to the apparent dispute
21 about shop welds and field welds and their inspection, it
22 was my understanding that Mr. O'Neill represented to us
23 that the shop welds were, if anything, more reliable than
24 field welds. That comports with my own engineering
25 understanding, too. And that the shop weld records were all

1 available. Is this not so?

2 MR. O'NEILL: That is correct.

3 JUDGE SHON: So that the finding of a shop weld is
4 not like the finding of some unusual beast that wasn't
5 anticipated. It's rather like the finding of something
6 quite benign, isn't it?

7 MS. CURRAN: Well, I just want to make sure that
8 we're talking about the same thing. We're not talking about
9 the pedigree of the shop welds. What we're talking about is
10 the fact that CP&L has stated that welds, because of their
11 chemical composition, are more vulnerable to corrosion than
12 piping.

13 Now, assuming that's so, if CP&L ran across a shop
14 weld in the piping that it hadn't thought about, hadn't
15 thought to inspect previously, in our view, that should
16 provoke CP&L to either look at the shop welds for evidence
17 of corrosion or justify not looking at them.

18 But that wasn't done. The shop weld was just
19 passed over and the significance of its existence was not
20 pursued.

21 You don't look like you understand my answer.

22 JUDGE SHON: That isn't the impression that I got
23 at all. Could you address that, Mr. O'Neill?

24 MR. O'NEILL: Certainly. As both the staff and
25 applicant have said any number of times now and it's in the

1 affidavits of the experts who actually reviewed the
2 videotapes, the focus of the field welds was the 50.55(a)
3 piping pedigree program and certainly they were looked at
4 carefully.

5 And as you noted and I noted previously, as
6 between field welds, shop welds and piping, the field welds
7 will be the more susceptible, more vulnerable, because the
8 conditions of the welding and the heat is less controlled
9 than in the shop. WE did not, CP&L did not stumble across
10 shop welds. They had isometrics that indicated where every
11 shop weld and every field weld was.

12 It turns out that the camera operator was a little
13 confused because a shop weld and the field weld 66 happen to
14 be very closely approximated to each other, but that just
15 happens to be the fact that he mentioned it.

16 Every bit of that piping between the field welds
17 was inspected. There was nothing to report on. That's why
18 you don't see a whole lot of records, because there was very
19 little on the field welds to begin with, quite frankly, and
20 there was nothing out of the ordinary on the piping and the
21 shop welds, both circumferential and longitudinal throughout
22 the entire pipe.

23 And if you wanted to watch the videotapes or
24 listen to the operator, you will hear him talk about the
25 longitudinal weld as it went along, and it was inspected

1 with this careful magnification of what they're looking at.
2 There just simply wasn't anything there. In fact, there
3 wasn't anything at the field welds either.

4 So listening to Ms. Curran talk about what we
5 didn't do is quite frustrating because it's been stated over
6 and over again.

7 I might note, by the way, that Mr. Licina never
8 left San Jose. His analysis was based on information that
9 was sent to him. CP&L and Dr. Moccari were the ones who
10 did the inspection on-site and the analysis on-site and it
11 wasn't some independent expert who came in and redid what
12 CP&L had done, and that characterization was made up like I
13 think much of what Ms. Curran has said in the last
14 half-hour.

15 JUDGE SHON: Thank you. I have nothing further.

16 JUDGE LAM: I have a question for Mr. O'Neill.

17 MR. O'NEILL: Yes, sir.

18 JUDGE LAM: If I may go back to your earlier
19 testimony, talking about the heat exchangers.

20 MR. O'NEILL: Yes.

21 JUDGE LAM: The question is, are you saying for
22 any equipment or systems related to the new spent fuel pools
23 C and D, any part that would be accessible now would comply
24 with Appendix B, Part 50?

25 MR. O'NEILL: Certainly, all of the equipment

1 will, when commissioned, comply with Appendix B or we will
2 not be able to commission it. Appendix B applies to all
3 equipment that is in operation. Once the equipment is
4 commissioned, it must comply with Appendix B and will, and
5 it either will comply with Appendix B because tests,
6 inspections and pedigrees establish that the equipment
7 complies with Appendix B or it will be replaced with
8 equipment that does.

9 That's why that -- this equipment is not at issue,
10 at play in this proceeding. The only thing at play happens
11 to be the welds and the weld data reports have been
12 destroyed. That's in play.

13 To the extent that the equipment commissioning
14 plan has been reviewed by the NRC and has been inspected and
15 to the extent that the intervenor raised a contention that
16 related in part to it, we've discussed it. But for purposes
17 of what we are asking the Commission to approve in the way
18 of a license amendment and what is done under 50.59 are two
19 separate things and I have tried to distinguish between the
20 50.55(a) alternative plan and what's covered under that and
21 the equipment commissioning plan, which deals with
22 everything else. Everything must meet Appendix B when it's
23 commissioned and that's part of what the equipment
24 commissioning plan is intended to do, to assure that it
25 does.

1 JUDGE LAM: Even though the buried piping did not
2 meet Appendix B criteria for the past 15 years.

3 MR. O'NEILL: Well, first of all, Appendix B did
4 not apply to equipment that was not either under
5 construction, in operation or had a safety-related function.
6 So it's sort of a nonsequitor to talk about Appendix B
7 applying to equipment which is not subject to Appendix B.

8 It is correct to say that the embedded piping and
9 the other equipment was not being carried by the company
10 pursuant to its Appendix B program. It didn't apply
11 Appendix B to it. It didn't look at it. It didn't inspect
12 it. It wasn't subject to a corrective action program and
13 they didn't put it in lay-up pursuant to storage
14 requirements, that's all true, because it didn't apply.

15 With respect to the embedded piping now, it will
16 meet Appendix B because of the alternative plan. When
17 commissioned, assuming the alternative plan is approved, the
18 embedded piping will meet Appendix B through the code waiver
19 to the alternative plan. That's how we qualify the embedded
20 piping and welds. The rest of it we will qualify through
21 the normal tests, inspection and/or replacement, as
22 necessary, to meet Appendix B.

23 JUDGE LAM: So put in another way, once
24 commissioned, everything except the buried piping and welds
25 will comply with Appendix B and the buried piping and welds

1 will comply with the alternative plan.

2 MR. O'NEILL: But I would restate that to say that
3 all equipment and piping will comply with Appendix B because
4 the alternative plan is the waiver which allows you to now
5 incorporate the embedded piping into the system consistent
6 with Appendix B.

7 JUDGE LAM: Or more accurately, compliance with
8 Appendix B with a waiver covering a small part of the
9 system.

10 MR. O'NEILL: That is correct. That's a fair
11 statement, and that is precisely where we will be upon
12 commissioning.

13 MS. CURRAN: Judge Lam, I would just like to make
14 a comment on that. There is no waiver provision for
15 compliance with the criteria of Appendix B to Part 50.
16 There is no provision for a waiver of criterion 13 or
17 criterion 16.

18 Those things have to be complied with. The waiver
19 that Mr. O'Neill is talking about is with respect to
20 another issue, not that.

21 JUDGE LAM: I was presuming Mr. O'Neill was
22 talking about 50.55(a) as the waiver.

23 MR. O'NEILL: That is correct.

24 MS. CURRAN: But he's using .55(a) to compensate
25 for the lack of quality assurance construction related

1 documents. In terms of whether or not CP&L maintained, and
2 kept laid-up piping and equipment in compliance with
3 Appendix B for the last 17 years, 50.55(a) doesn't apply to
4 that.

5 JUDGE LAM: I hear you.

6 MS. CURRAN: Okay.

7 JUDGE LAM: I hear you.

8 JUDGE BOLLWERK: All right. Judge Lam, anything
9 else, or Ms. Curran or anyone else? Judge Shon?

10 JUDGE SHON: No.

11 JUDGE BOLLWERK: All right. I just have a general
12 question and I put it to you with respect to the other
13 contention and I sort of saved it for the end with this,
14 because, again, what the regulation requires is a showing
15 that there can be -- there is a genuine substantial dispute
16 of fact to be resolved only with sufficient accuracy by the
17 introduction of evidence in an adjudicatory hearing.

18 If we were to go to hearing, what kinds of
19 evidence would we be hearing from you in terms of the issues
20 that you think are still disputed and out there?

21 MS. CURRAN: I'm not sure that we would have a
22 significant amount of additional evidence to introduce,
23 because, of course, we are required by the regulations to
24 put before you all the evidence that we have and with which
25 we would go to a hearing.

1 But it would give us the opportunity to question
2 the witnesses for CP&L and the NRC staff on the two main
3 issues that are raised before the Board here. One is the
4 significance of the non-compliance with Appendix B and the
5 other is what exactly was done in order to assure the
6 adequate condition of the piping.

7 And that's also true for the first contention.
8 When we were having a discussion about whether we would get
9 additional discovery on contention two, whether or not
10 that's the case, the opportunity to get cross examination of
11 the other side's witnesses is a significant element of going
12 to a hearing.

13 JUDGE BOLLWERK: So essentially you see this as an
14 opportunity to cross examine the staff and applicant
15 witnesses that might be proffered rather than -- I'm not
16 hearing from you that necessarily you're going to be putting
17 in any additional evidence.

18 MS. CURRAN: There might be some additional
19 evidence, but we certainly made every effort to put before
20 you all the evidence that we could muster, because that's
21 what the law requires.

22 JUDGE BOLLWERK: Can you think of anything at this
23 point that you would put forward in terms of additional
24 evidence on your own?

25 MS. CURRAN: Not at the moment, but I'm very

1 tired.

2 JUDGE BOLLWERK: All right. Again, I'm trying to
3 sort of look at the standard and give you an opportunity to
4 say anything you want about it at this point. All right.

5 I don't think I have any other questions, if none
6 of the Board members do. At this point, the regulations say
7 that the Board is supposed to make a decision on the matters
8 that have been put before us in the context of this oral
9 argument, make certain findings which are in 2.115(a), and
10 to do it promptly, which we will certainly bear that in mind
11 as we move forward.

12 I think the one thing the Board did want to do, we
13 talked about the question about Dr. Thompson and the
14 staff's request that his testimony be stricken. We feel
15 that the appropriate way to deal with this is, as Mr.
16 O'Neill suggests, which is to give it the weight that it
17 deserves in terms of his expertise and what he stated in his
18 affidavit.

19 So that is, I will deny the motion to strike Dr.
20 Thompson's testimony and we will, as has been suggested with
21 respect to Mr. Lochbaum, give it the weight that his
22 expertise and experience has indicated in his affidavit and
23 what he's provided to us deserve. So I consider that matter
24 disposed of at this point.

25 Any other questions or matters that any of the

1 parties would like to bring to the attention of the Board at
2 this point? All right. In that case, then, we stand
3 adjourned and, as I say, the next step for us is to issue a
4 decision relating to the matters that have been put before
5 us today.

6 Thank you all. I know it's been a long day. The
7 presentations have been useful to the Board in any number of
8 respects and we appreciate you spending the time to come and
9 talk with us today and to give us your views on these
10 matters.

11 Nothing else from the parties, then we stand
12 adjourned. Thank you very much.

13 [Whereupon, at 6:08 p.m., the hearing was
14 concluded.]

REPORTER'S CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of:

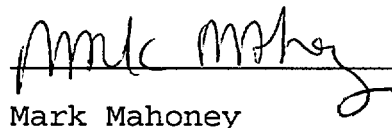
NAME OF PROCEEDING: CAROLINA POWER & LIGHT COMPANY
(Shearon Harris Nuclear Power
Plant)
HEARING

CASE NUMBER: 50-400-LA

ASLBP NUMBER: 98-762-02-LA

PLACE OF PROCEEDING: Rockville, MD

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.



Mark Mahoney

Official Reporter

Ann Riley & Associates, Ltd.