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U.S. NUCLEAR REGULATORY COMMISSION

In the Matter of Energy Nuclear Vermont Yankee LLC

Docket No. 50-271 Official Exhibit No. NEC-UW-11

OFFERED by: Applicant/Licensee Intervenor NEL

NRC Staff _____ Other _____

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

June 5, 2007

The contents of this transcript of the proceeding of the United States Nuclear Regulatory Commission Advisory Committee on Reactor Safeguards, taken on June 5, 2007, as reported herein, is a record of the discussions recorded at the meeting held on the above date.

This transcript has not been reviewed, corrected and edited and it may contain inaccuracies.

1 ACRS STAFF PRESENT:

2 MICHAEL JUNGE Designated Federal Officer

3
4 NRC STAFF PRESENT:

- 5 P.T. KUO
- 6 MICHAEL MODES
- 7 RICHARD CONTE
- 8 JONATHAN ROWLEY
- 9 LAMBROSE LOIS
- 10 JIM MEDOFF
- 11 ROBERT HSU
- 12 DUK NGUYEN

13
14 ALSO PRESENT:

- 15 TED SULLIVAN
- 16 JOHN DREYFUSS
- 17 PAUL JOHNSON
- 18 NORM RADEMACHER
- 19 DAVE MANNAI
- 20 ALAN COX
- 21 MIKE METELL
- 22 JIM FITZPATRICK
- 23 TED UNDERKOFFLER
- 24 LARRY LUKENS
- 25 JOHN McCANN

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1 ALSO PRESENT: (CONT.)

2 JAY THAYER

3 SCOTT GOODWIN

4 JOHN HOFFMAN

5 DAVE LACH

6 GARRY YOUNG

7 MIKE STROUD

8 REZA AHRABIA

9 TED IVY

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P-R-O-C-E-E-D-I-N-G-S

10:28 a.m.

CHAIRMAN BONACA: Good morning. The meeting will now come to order. This is a meeting of the Plant License Renewal Subcommittee. I'm Mario Bonaca, Chairman of the Plant License Renewal Subcommittee for this plant.

ACRS members in attendance are William Shack, Otto Maynard, Said Abdel-Khalik, Sam Armijo, and John Barton. Michael Junge, of the ACRS Staff is the Designated Federal Official for this meeting.

The purpose of this meeting is to review the license renewal application for the Vermont Yankee Nuclear Power Station, the draft SER, and associated documents.

We will hear presentations from representatives of the Office of Nuclear Reactor Regulation, NRR, the Region 1 office, and Entergy Nuclear Operations, Incorporated.

The subcommittee will gather information, analyze relevant issues and facts, and formulate proposed position and action as appropriate for deliberation by the full committee.

Rules of participation in today's meeting were announced as part of the notice of the meeting

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1 previously published in the Federal Register. We have
2 received no requests for time to make oral statements,
3 and we have received no written comments from members
4 of the public regarding today's meeting.

5 A transcript of the meeting is being kept,
6 and will be made available as stated in the Federal
7 Register notice. Therefore, we request that
8 participants in this meeting use the microphones
9 located throughout the meeting room when addressing
10 the subcommittee. Participants should first identify
11 themselves, and speak with sufficient clarity and
12 volume so that they can be readily heard.

13 We will now proceed with the meeting, and
14 before I call upon Dr. Kuo, of the Office of Nuclear
15 Regulation, to begin I would like to make a couple of
16 general observations regarding this application.

17 The first is really a recurrent theme, I
18 guess, and the question regarding GALL, and one thing
19 what we notice is that there is an increasing number
20 of exceptions being taken on the GALL, and this is not
21 an issue only for Vermont Yankee. We've seen it
22 coming, and I have raised a number of questions in the
23 past regarding whether or not GALL should be updated
24 to be less descriptive, and to incorporate some of
25 this that are really not exceptions, they are just

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1 alternatives. For example, in some cases to ASME code
2 on the report, and to have their views regarding, you
3 know, how do we reduce the number of exceptions being
4 taken. I mean, GALL was originally a cooperative
5 effort between the industry and the staff, to see that
6 there is, you know, 70 percent of the programs take
7 exceptions from GALL says something that has to be
8 looked at.

9 The second issue I would like to raise is
10 the one of the audit report. The audit report is
11 growing, and it's becoming almost a duplicate of the
12 portion of the SER, but it's not written the same way.
13 So, a reviewer, like the ACRS members, is puzzled by,
14 you know, what information is there in one that is not
15 in the other. Typically, there is none, but in some
16 cases there is. So, you know, is there any way in
17 which that two things can be meshed together and
18 become one document only in the future.

19 So, these are the two issues I would like
20 to raise, and again, the first one that I talked about
21 may be significant enough to deserve a meeting at some
22 point in the future, because it's not specific to
23 Vermont Yankee, it's more generic to GALL.

24 MR. KUO: Thank you, Dr. Bonaca.

25 I'm P.T. Kuo, the Director of the Division

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1 of License Renewal.

2 Your observation is actually very correct,
3 and very on the point. We have observed this same
4 phenomena also, and in the past that's why we tried to
5 update GALL, and in 2005 we updated GALL. The hope
6 was that we would be able to eliminate many of the
7 exceptions that we have -- you have been talking
8 about.

9 And recently, in a couple of the most
10 recent reviews, we find that, again, there were a lot
11 of exceptions, more than what we would like to see.

12 So, this is the one thing that we are
13 working on that. We will be working with the
14 industry. We will actually bring this very subject to
15 the industry and see if there's any ways that we can
16 reduce the number of exceptions.

17 With the number of exceptions we see right
18 now, it doesn't make sense anymore to have the GALL
19 report there with the program, and then, you know,
20 everybody is taking exceptions, and then why
21 there's no reason for the GALL to exist anymore.

22 CHAIRMAN BONACA: For example, on the
23 containment issue, if I remember, there is a statement
24 that says exceptions are so many that there was no
25 point in listing them, otherwise it would have been

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1 confusing. Therefore, there is a description of the
2 problem separate from GALL.

3 So, that, to me, was a clear indication we
4 had to talk about where GALL is going.

5 MR. KUO: Yes, I fully agree with that
6 assessment, and like I said we plan to work with the
7 industry, and at some point we will come back to the
8 committee and give you a status report on this.

9 As far as the audit report, I think we
10 have come back to the committee about, I forget how
11 long ago, about a few months ago. We told you that we
12 are going to change from writing the 700 or 800 page
13 report to what we call database.

14 What the database is, really, is something
15 that when we go to the -- when the audit team goes to
16 the site and audits the on-site design basis document,
17 the applicant will create a question and answer
18 database, and this database is evolving during the
19 audit, so it's changing. Whenever we have a question,
20 they have an answer, and that database has got to be
21 revised.

22 But, at the end of the audit, we expect
23 the applicant to submit this database, question and
24 answers, to us, and their information, that becomes a
25 formal document. Okay.

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1 Then, the staff will take that database
2 and build on it to actually provide a write-up similar
3 to SER, basically, providing technical justification
4 to the database and the status, whether it is still
5 under discussion, open, or closed.

6 So, we are going to build, if you will, an
7 audit report on the question and answer database
8 submitted to us, and then provide the write-up on the
9 technical justifications, and every time we will
10 indicate what the status of that is.

11 So, that becomes, actually, the main body
12 of the future audit report.

13 At the end of audit, okay, when everybody
14 is ready to close out the audit status, then we will
15 put a very simple description on top of this database,
16 and then that becomes the audit report.

17 CHAIRMAN BONACA: Thank you, appreciate the
18 explanation.

19 MR. KUO: So, that's what we are doing
20 right now.

21 CHAIRMAN BONACA: Thank you. Okay.

22 So, I'll turn the meeting over to you, Dr.
23 Kuo, for the Vermont Yankee application.

24 MISS KIMBALL: Well, yes, we have completed
25 our safety evaluation, and we have an issue there to

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1 report to you. About a month ago, you have it in your
2 hand, and I believe in that safety evaluation report
3 we have the four confirmatory items that is,
4 basically, about the boundary of the non-safety-
5 related structures over safety-related structures.
6 Okay. We were -- because of the spatial relationship,
7 we have asked our regional staff to help us to walk
8 down the plant, and so that they can have a better
9 assessment of that.

10 We haven't been able to get input from the
11 region yet, but this is something that we are going to
12 have it, so we make it the confirmatory item in the
13 report. As soon as we get input from the region, we
14 will be able to hopefully close that out.

15 Recently, it has caught our attention
16 about a dam, their own dam, and that, the issue, it
17 was closed in the SER, but we noticed lately that this
18 dam was owned by Trans-Canada, and because of the
19 different ownership there is a question who is really
20 responsible for the management of the dam. Okay. So,
21 we have some ongoing discussion with the applicant,
22 and I'm sure today they will address that, too. So
23 that, we think, is resolved, but we will treat it as
24 a confirmed item, too, so that is a new item added to
25 the original SER that you had.

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1 And, that is, really, the review status
2 right now. Right now I'm turning to the applicant to
3 make their application, and then the staff
4 presentation will follow.

5 With that, I turn to the applicant.

6 MR. SULLIVAN: Good morning, I'm Ted
7 Sullivan, I'm the 2nd Vice President for Vermont
8 Yankee, and I'd like to thank the ACRS for allowing us
9 to present the license renewal application here today.

10 I'd like to introduce John Dreyfuss. John
11 is the Director of Nuclear Safety Assurance at Vermont
12 Yankee, and he'll be lead presenter today, and I'd
13 like the Vermont team to introduce themselves, and
14 then I'll turn it directly over to John to make the
15 presentation.

16 Thank you.

17 MR. RADEMACHER: Norm Rademacher, I'm the
18 Director of Engineering.

19 MR. MANNAI: Dave Mannai, Entergy Vermont
20 Yankee Licensing Manager.

21 MR. COX: I'm Alan Cox with the Entergy
22 License Renewal Team.

23 MR. METELL: Mike Metell, Vermont Yankee
24 License Renewal Project Manager.

25 MR. FITZPATRICK: Jim Fitzpatrick, Vermont

1 Yankee Design Engineering & Civil Structural Group.

2 MR. UNDERKOFFLER: Ted Underkoffler, I'm a
3 Co-Program Engineer, I am the responsible individual
4 for the Section 11 Containment Inspection Program.

5 MR. LUKENS: Larry Lukens, Vermont Yankee
6 in Programs and Components Engineering Department.
7 I'm the Supervisor of Code Programs.

8 MR. McCANN: Good morning. My name is John
9 McCann. I'm the Director of Licensing for the Entergy
10 Fleet.

11 MR. THAYER: I'm Jay Thayer, I'm Vice
12 President of Operations for Entergy Nuclear. I'm on
13 loan to the Nuclear Energy Institute.

14 MR. GOODWIN: Good morning. I'm Scott
15 Goodwin, Entergy Design --

16 CHAIRMAN BONACA: You are going to have to
17 come to a microphone if we are going to go around the
18 room.

19 MR. GOODWIN: Good morning. I'm Scott
20 Goodwin, Entergy Vermont Yankee Design Engineer and
21 Civil Structural Supervisor.

22 MR. HOFFMAN: Good morning. My name is
23 John Hoffman. I'm currently retired from Entergy. I
24 was the previous Site License Renewal Project Manager.

25 MR. LACH: Good morning. My name is Dave

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1 Lach. I'm the Entergy Corporate License Renewal
2 Services Project Manager for the VY License Renewal
3 Project.

4 MR. YOUNG: I'm Gary Young with Entergy,
5 and I'm the Manager of the License Renewal Group for
6 Entergy.

7 MR. STROUD: My name is Mike Stroud with
8 the Entergy Corporate Group for License Renewal, and
9 I am the Electrical Lead for Electrical Programs and
10 Review.

11 MR. AHRABIA: My name Reza Ahrabia, I'm the
12 SI, Civil Structural Lead for License Renewal.

13 MR. IVY: And, my name is Ted Ivy, I'm with
14 the Entergy Corporate License Renewal Services Group.
15 I'm the Mechanical Lead.

16 MR. JOHNSON: I'm Paul Johnson at Vermont
17 Yankee. I'm Electrical Design Engineer.

18 MR. DREYFUSS: All right.

19 MEMBER BARTON: I'm glad you left somebody
20 there behind to run the plant. I was getting a little
21 nervous about that.

22 MR. DREYFUSS: Gentlemen, good morning,
23 John Dreyfuss, Director of Nuclear Safety Assurance
24 for Vermont Yankee. I'm responsible for, among other
25 things, the Regulatory, Compliance and Licensing

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1 Group. I'm also the Project Sponsor for the License
2 Renewal Project for Vermont Yankee.

3 Where we are at right now, and we'll talk
4 about it a little bit as we go through recent plan
5 performance and current plan status, but we are, as we
6 speak, turning the moats switch after a refuel outage,
7 and we are going to plant start up.

8 So, we appreciate being here, thank you
9 for entertaining us here at the ACRS meeting.

10 I did want to point out a couple of quick
11 features here. Here's the Connecticut River. Here's
12 the plant. There's the stack back here. We have the
13 intake and the discharge. I think what you'll find is
14 that the plant has been very well maintained over the
15 years. We will talk about some of the capital
16 improvements that we have been making to the plant
17 over the years, in accordance with our long-range
18 plan, and a big investment by Entergy in the plant
19 over the last several cycles. We'll talk about that
20 as well.

21 We've done the introductions.

22 Agenda is, we'll talk a little bit about
23 the site description, touch on licensing history and
24 some of the big plant improvements that we have made
25 recently and over the years. We'll talk about recent

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1 plant performance and the project itself and team
2 composition. We'll also discuss the cost beneficial
3 severe accident management alternatives that we
4 identified during the course of license renewal. None
5 of them are age related, but they are interesting to
6 speak about.

7 Additionally, we have a number of
8 presentation topics we've prepared for you on the
9 containment integrity, both the dry well and torus
10 shell, and as P.T. Kuo mentioned, we will also discuss
11 the Vernon Hydroelectric Station.

12 One thing that we have done is in these
13 presentations we have put together an awful lot of
14 detail, and we also have some hyperlinks and back-up
15 slides. If at any point you want more information, we
16 can provide that for you. If you have seen enough in
17 the way of information, please say so, we will move on
18 to any topic that interests you.

19 And, of course, we'll entertain any
20 questions that you have during the course of the
21 presentation here.

22 Site description, the plan is a 125-acre
23 site on the banks of the Connecticut River. It's a
24 very lovely site. General Electric was the NSSS
25 vendor, and Ebasco was the AE and builder of the

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1 plant. It is a BWR, Mark I containment. We'll be
2 discussing that a bit during the course of the
3 presentations here today.

4 The plant is now rated at 1912, 1912
5 megawatts thermal, with a 650 megawatt electric
6 output.

7 MEMBER BARTON: Is that original, or is
8 that an upgrade?

9 MR. DREYFUSS: That is, during the past
10 cycle we implemented a power uprate. We had put the
11 modifications in over the prior two cycles, and in
12 March of this year got the license up -- I'm sorry,
13 2006, got the license to do the 20 percent uprate.

14 MEMBER BARTON: Thank you.

15 MR. DREYFUSS: Very good.

16 The cooling is a hybrid cycle condenser
17 with forced draft cooling, cooling towers. You saw a
18 little bit of the cooling towers, we have a better
19 shot of that later as well in the presentation slides,
20 and we are currently at a staff of 650 people. That
21 includes our contractors of supplemental work force.

22 Here are some of the licensing highlights.
23 The plant did go on line in 1972, in March. The
24 expiration of the operating license is March 21, 2012.
25 Thus, we are here.

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1 I did want to point out, in July of 2002
2 the plant was acquired by Entergy from Vermont Yankee
3 Nuclear Power Corporation, and that really marked the
4 beginning of a number of substantial capital upgrades
5 and major projects, the power uprate project that we
6 talked about, the 20 percent power uprate, dry fuel
7 storage on site at the facility, as well as the
8 License Renewal Project kicked off after Entergy
9 acquired the plant.

10 I'll go through some of the major plant
11 improvements that we've had. We did replace core spray
12 piping back in 1978. We did the full bevy of
13 modifications to the Mark I containment in the '78 to
14 '82 time frame, new saddles, the hold downs, the
15 shortening of the downcomers to alleviate some of the
16 Mark I containment loading. All of that work was done
17 during that period of time.

18 In 1986, we replaced our recirc piping
19 with low carbon steel, 316 low carbon steel.

20 In 1998, we put in our new suction
21 strainers, resulting as a result of some of the
22 industry operating experience that was out there. We
23 also took that opportunity to recoat our torus. We'll
24 be talking about that a little bit later in the
25 presentation as well.

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1 2001, we applied noble chemistry for the
2 first time at the plant, successful application. We
3 most recently reapplied or put our second application
4 on in the past refueling outage. Again, a successful
5 application. And, we've also gone to hydrogen water
6 chemistry, and, of course, those two in combination
7 really do provide for the asset protection and IGSCC
8 mitigation.

9 MEMBER BARTON: What's your hydrogen water
10 chemistry designed to protect? I mean, how much --
11 you know, it can vary on the amount of hydrogen
12 depending on what you are trying to protect in the
13 core internals. What are you trying to protect?

14 MR. DREYFUSS: We protect the full asset
15 and the recirc loop as well.

16 MEMBER ARMIJO: How do you monitor that?
17 Do you have online ECP monitoring, or just do it --

18 MR. RADEMACHER: This is Norm Rademacher.
19 Yes, we do have an online ECP monitor, and
20 we just -- as a matter of fact, as a result of this
21 outage we put in a new one just for ongoing cycling.

22 MEMBER SHACK: What fraction of the cycle
23 is it operable for?

24 MR. RADEMACHER: We are also investigating
25 other alternatives to the General Electric supplied

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1 ECP monitor, to improve the reliability.

2 MR. DREYFUSS: We have had them fail
3 after two months of operation. We have replaced them
4 as well. We've had them work for quite a while, and
5 we are working, as Norm said, on doing an upgrade.

6 MEMBER BARTON: What's your success rate
7 with operation of hydrogen water chemistry as a
8 system, 95 percent of the time? How much?

9 MR. RADEMACHER: 98 percent.

10 MEMBER BARTON: 98 percent of the time?

11 MR. RADEMACHER: That's correct.

12 MEMBER BARTON: Okay, good.

13 Thank you.

14 MR. ARMIJO: This is maybe a little bit off
15 base, but have you made any adjustment in your
16 hydrogen water chemistry when you went from 100
17 percent to 120 percent --

18 MR. DREYFUSS: Yes.

19 MR. ARMIJO: or did you notice an ECP
20 change?

21 MR. DREYFUSS: Originally, at the
22 previous license conditioning, we were running about
23 3 SCFM and now we are on a 3.5.

24 MR. ARMIJO: Okay.

25 MR. DREYFUSS: Not a substantial change.

1 This is not necessarily in the slide that
2 you have in front of you, but we thought it was
3 worthwhile to mention. We did implement zinc
4 injection at Vermont Yankee during this past cycle.

5 And, as far as power uprate, equipment
6 upgrades, I did want to talk some about that. Can we
7 go to the hyperlink there?

8 MR. ARMIJO: Before you go to that, you
9 didn't do zinc injection earlier, but you used to have
10 a brass condenser. Do you still have brass
11 condensers?

12 MR. DREYFUSS: That's correct. We have
13 the Admiralty brass condenser, and there is some
14 natural zinc that we do get as a result of the
15 condenser that we have.

16 MR. ARMIJO: But, you still keep the
17 Admiralty brass condenser, or have you changed that?

18 MR. DREYFUSS: We have not changed that,
19 that's correct.

20 MR. ARMIJO: Okay.

21 MR. RADEMACHER: It is in our long-range
22 plan after 2010 to change that up.

23 MR. ARMIJO: That would be titanium or --

24 MR. RADEMACHER: We haven't made the
25 selection of materials at this time.

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1 MR. ARMIJO: Okay.

2 MR. DREYFUSS: I did want to touch on
3 some of the major equipment changes that we made that
4 we believe position us well for extended operation and
5 good plant reliability into that period.

6 We did a change out of the high pressure
7 turbine, the LP turbines were replaced earlier, prior
8 to our power uprate, not associated with the power
9 uprate, so that train is all new.

10 MEMBER BARTON: Was that the rotor cracking
11 issue?

12 MR. DREYFUSS: No.

13 MEMBER BARTON: Okay.

14 MR. DREYFUSS: No, we had a rotor -- we
15 had a rotor insulation issue.

16 MEMBER BARTON: Okay.

17 MR. DREYFUSS: And, we did fully
18 reinsulate the rotor to enable us to stay away from
19 any kind of thermal sensitivity and vibration on the
20 power train.

21 MEMBER BARTON: All right.

22 MR. DREYFUSS: We additionally replaced,
23 rewound the stader. That's all new copper, and
24 reinsulated the boiler as well.

25 Feedwater heaters, we do have new high

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1 pressure feedwater heaters. We had replaced the LP
2 heaters in cycles previous to the power uprate
3 modifications.

4 Switchyard improvements, we, essentially,
5 replaced the switchyard. We put in lots of new
6 protective features and redundant protection schemes.
7 All of the 345, 3-4-5 KV breakers, are new. That was
8 not driven by uprate, that was driven by our long-
9 range plan as well.

10 We replaced a number of control systems,
11 feedwater, level control, the feedwater heater level
12 control system. The reactor pressure regulator has
13 gone to digital. We are digital on most of these
14 control systems, and they are working very fine for
15 us.

16 And, one of the other big challenges that
17 we had in going to power uprate was, we went from two
18 feed pump operation with one in standby, to three feed
19 pump operation, and we had to make a number of
20 modifications to be able to address in the event that
21 we would lose a condensate pump, what would happen to
22 the feedwater system, and this was an area of interest
23 during the power uprate proceedings. So, we put in
24 modifications to provide for auto tripping of a
25 feedwater pump in the event of a trip of a condensate

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1 pump. Also, an automatic runback of our recirc
2 system, to maintain power, and additionally, a level
3 setdown, ultimately, very well analyzed and our goal
4 was, one, ensure, primarily, that we would maintain
5 feedwater flow to the reactor vessel, and that we
6 would not have an inadvertent scram on low level or a
7 high level trip on the turbine.

8 MEMBER BARTON: On the loss of feedwater
9 pump you runback or scram?

10 MR. DREYFUSS: Correct, loss of feedwater
11 pump will do a runback.

12 MEMBER BARTON: Runback.

13 MR. DREYFUSS: Right, and we did an
14 analysis using some sophisticated modeling.
15 Ultimately

16 MEMBER ABDEL-KHALIK: What did you do to
17 the condenser? You didn't say.

18 MR. DREYFUSS: To the condenser, we did
19 some reinforcement in staking to avert any issues that
20 we might have with vibration, due to the higher flows.
21 We did take a look at the condenser this refuel
22 outage, and we see no issues with the condenser, as a
23 result of the power uprate.

24 This shows, here, up top there is Wayne
25 Manning, one of our operator, as we did reach the new

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1 power level. The slide below there, or the picture
2 below, is our Power Ascension Control Center. We did
3 a deliberate slow power ascension, never going
4 backwards, but methodical step by step changes in
5 power, at small increments, analyzed. At the very end
6 here we did a big integrated plant test, where we
7 actually did manually trip one of the condensate pumps
8 and this is the Power Ascension Control Center, the
9 brain of the power ascension operation, and all of us
10 sitting around watching the traces and transients.

11 If you are astute, you can see that the
12 rods remain out, and these are the traces here. Let's
13 go to that next slide. This was a really nice result.
14 We had great results from this transient test.
15 Classic quarter wave dampening on level, you can see
16 the tripping of a pump here, and the tripping of the
17 feed pump as far as the changes in feedwater flow, and
18 this test matched perfectly with our analyzed
19 projections for the test. So, a testament to, I
20 think, the engineering staff for the work that they
21 did in analyzing for this transient as well.

22 MEMBER SHACK: And, your secondary system
23 piping, has much of that been replaced, or is it still
24 all carbon steel?

25 MR. DREYFUSS: Go ahead, Norm.

1 MR. RADEMACHER: A lot of the high usage
2 areas, drains and such where they go back to the
3 condenser is chrome-moly. That was the original
4 design.

5 MEMBER SHACK: Oh, the original design.

6 MR. RADEMACHER: And so, we haven't had to
7 replace much of that.

8 MR. DREYFUSS: As far as recent plant
9 performance, current plan performance, current plan
10 status right now is, we are mode switch to start-up.
11 We will be withdrawing control rods for start-up from
12 our refueling outage.

13 Cycle 25, where we did the 20 percent
14 power uprate, was a 549-day safe, continuous run. We
15 had shut down for our prior refueling outage, did all
16 of the maintenance, did some additional power uprate
17 modifications, started the plant up, and it maintained
18 -- we maintained it in service during the cycle, as
19 well as doing the power uprate and power increase
20 during the wave. So, a good, safe run, and a
21 testament to the quality of the work that was done.

22 We started our refuel outage on May 12,
23 2007. Safe shutdown from that outage. We are starting
24 up as we speak.

25 And, for key outage summary, one thing

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1 that I did want to say, as far as the power uprate
2 went, we were a full year operation at the extended
3 uprate level with no challenges to the operators and
4 good, safe performance of the unit.

5 A couple of key things as far the outage
6 summary goes, some of the big things that we got done
7 is, we did replace one of our large feedwater motors,
8 the size of a walk-in kitchen, I would characterize
9 it, pretty good size motor. That worked well, and it
10 was fine. We did replace the last of the 345 KV
11 breakers that we were seeking to replace. Again, that
12 was driven by our long-range plan. We have a 15-year
13 capital plan, and we have a large motor program, we
14 are replacing and refurbishing motors as we go, and
15 laying them out in a logical sequence based on
16 priority.

17 MEMBER BARTON: Does that include your
18 recirc motors as well?

19 MR. DREYFUSS: We are looking at the
20 recirc motors as well, and that's a relatively high
21 priority one for us as well. It's a big job.

22 MEMBER BARTON: Yes.

23 MR. DREYFUSS: The feedwater motor was a
24 big job, had to cut a hole in the turbine building,
25 cut a hole in the turbine building floor --

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1 MEMBER BARTON: Roof, yes.

2 MR. DREYFUSS: -- it was a big deal, but
3 very well done.

4 Service water, we replaced the discharge
5 valve and check valve on our service water D train,
6 our delta train of service water. Again, that was work
7 that we are looking to do. We have the other trains
8 laid out in our long-range plan that we'll be doing
9 over the course of the next several years.

10 We did replace a HPCI high pressure
11 cooling injection turbine exhaust and check valve,
12 that we had had some history with leak rating. We put
13 a new check valve in, it's working beautifully.

14 So, some of the highlights from the
15 outage.

16 MEMBER ABDEL-KHALIK: Now, you've been
17 operating with a MELLLA power flow limit line?

18 MR. DREYFUSS: We are, we are operating
19 under the MELLLA operating regime, and we are -- we
20 did some gamma scanning for this refuel outage in
21 support of the GE application for the MELLLA+.

22 MEMBER ABDEL-KHALIK: And, your operators
23 have had no problems operating with MELLLA in terms of
24 the range of control that they have?

25 MR. DREYFUSS: That's correct. There

1 have been no problems. Ideally, the MELLA+ will
2 provide some additional operational flexibility, so
3 that we have a larger flow window, in particular, end-
4 of-cycle, so that we don't have to make as many
5 pattern adjustments to the --

6 CHAIRMAN BONACA: You say a larger flow
7 window, I mean, you have some flow window now?

8 MR. DREYFUSS: Yes.

9 CHAIRMAN BONACA: With the MELLA?

10 MR. MANNAI: Yes, this is Dave Mannai, we
11 have about a 4 to 5 percent flow window. It's a
12 little bit larger than Brunswick's. We did some
13 industry comparisons with them when we were going to
14 implement uprate, and I'm pleased to report that over
15 the last cycle we had a number of rod adjustments
16 toward the end of the cycle, you know, as is typical,
17 but not having MELLA+ at a full EPU condition we did
18 have to do more rod adjustments, but they are all done
19 safely with excellent focus on reactivity management
20 and performance. We had no issues as a result of
21 that.

22 MEMBER ABDEL-KHALIK: And, you can enter
23 into higher than 100 percent flow range?

24 MR. MANNAI: Yes, we implemented increased
25 core flow back in late '99, early 2000 time frame, and

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1 we went -- you know, we had the full 107 percent
2 increase core flow. As you implement power uprate you
3 lose some of that margin, so we went from 107 percent
4 down to about 104.5, so our flow window is from 99
5 percent to, roughly, 104.5 percent flow, so we had a
6 little bit more margin than one of the Brunswick
7 units.

8 MEMBER ABDEL-KHALIK: Thank you.

9 MR. DREYFUSS: As far as an overall
10 summary, excellent plant material condition. We did
11 do a lot of looking as a result of a power uprate and
12 the changes that we had made, and we found the plant
13 to be in excellent health. We'll talk a little bit
14 more about that.

15 We did not identify any significant
16 equipment issues, routine items, routine added out of
17 scope, and well managed and addressed. No generic
18 issues.

19 ~~Outage items of interest a lot of~~
20 ~~interest from everybody on the steam dryer and its~~
21 ~~performance, as well as the performance of flow~~
22 ~~accelerated corrosion under the uprate power levels.~~
23 ~~I'd like to talk a little bit about both of those~~
24 ~~topics as well.~~

25 MEMBER MAYNARD: You said you are going to

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1 talk more about your first bullet there, excellent
2 plant material condition?

3 MR. DREYFUSS: Yes, sir.

4 MEMBER MAYNARD: Okay, because that's an
5 easy -- that's a statement to make, but it doesn't
6 really give me a feel. You obviously have some issues
7 and some things that you are dealing with, I'd like to
8 get a feel for kind of what level of items that you do
9 have on your list of things to do.

10 MR. DREYFUSS: All right, very good,
11 thank you.

12 As far as the steam dryer went during
13 start up from the last refuel outage we did do
14 extensive monitoring of the steam dryer to validate
15 that we are going to remain within the low profile
16 code low profiles, and we did do that.

17 But also, during the course of the cycle
18 we did online monitoring to a high degree.
19 Additionally, during this last outage lots of
20 interest in terms of the steam dryer condition as we
21 pulled it out of the vessel.

22 So, from an online monitoring standpoint,
23 we have been monitoring, we saw no changes in reactor
24 water level that we couldn't explain. Similarly, steam
25 dome pressure, no changes there that would prompt us

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1 or kick us into any off-normal procedure that we have
2 for actual steam dryer issues.

3 Additionally, we do monitor moisture
4 carryover, and we had no unexplained changes with
5 moisture carryover. It tracked as predicted, with
6 changes in power or changes in rod sequences, which,
7 again, those were all anticipated.

8 MEMBER ABDEL-KHALIK: How is that measured?

9 MR. DREYFUSS: We use -- Norm, can you
10 speak to this?

11 MR. RADEMACHER: Sure. We use sodium-24
12 testing. The chemistry performs the testing, and use
13 a radioactive sample and verify. And, they do on a
14 weekly basis, and we monitor statistically and see if
15 there's any statistic changes, statistically unusual
16 changes, every week.

17 ~~And the performance of that has been~~
18 ~~you could see the change with our uprate, as we~~
19 ~~increased steam flow you get more carryover,~~ but then
20 it stays relatively constant through the rest of the
21 year for the cycle.

22 MR. DREYFUSS: It probably averages about
23 .12 percent.

24 MEMBER ABDEL-KHALIK: And, the uncertainty
25 in that is how much?

1 MR. RADEMACHER: I don't know the answer to
2 that question.

3 MR. MANNAI: We'll get that information and
4 get back to you.

5 MR. DREYFUSS: It's very predictable.
6 We'll get the numbers on the uncertainty for you.

7 For outage monitoring as well, we did take
8 a look and found that there were no fatigue
9 indications that have been seen elsewhere in the
10 industry. I happened to be at one facility when they
11 removed the dryer from the reactor vessel, and there
12 were obvious flaws in that steam dryer, in particular,
13 some of the areas where reinforcement and
14 strengthening modifications were made. We took a look
15 at all of those areas, and the steam dryer looks
16 there were no indications, and the steam dryer is in
17 very good health.

18 MEMBER BARTON: Are there any cracks at all
19 in your steam dryer?

20 MR. DREYFUSS: There were some
21 indications that we identified as well. We'll talk a
22 little bit about that. We characterized them as IGSCC
23 as well. --

24 MEMBER BARTON: Okay.

25 MR. DREYFUSS: -- and dispositioned them

1 with General Electric as use as is. I'll explain some
2 of those as well as we go forward.

3 MEMBER BARTON: All right, thank you.

4 MR. DREYFUSS: Go to the hyperlink here.

5 This is a shot of the steam dryer here, and we did
6 find these are the lifting lugs for the steam
7 dryer. We found that on a tap weld on two of these
8 lifting lugs, there's a structural weld underneath
9 here, that was fine, but the tack weld, that's,
10 essentially, anti-rotation for the lifting lugs, we
11 did find a couple of small indications there, and they
12 may be service-induced from lifting, lifting the
13 dryer.

14 ~~Where we did find IGSCC ts, this shows~~
15 ~~here, we have two steam dams, and they are about half~~
16 ~~an inch wide, 12 feet long, six inches high, and~~
17 ~~during the visual inspection, we did very high quality~~
18 ~~visual inspections of this outage as well as last~~
19 outage, we saw three indications right along one edge
20 of the steam dam. They didn't turn the corner
21 whatsoever, and they look like classic IGSCC-type
22 indications, dispositioned as use as is. We concurred
23 with that in our Civil Structural Group, and we will
24 inspect them next outage.

25 CHAIRMAN BONACA: You didn't see them in

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1 the previous outage?

2 MR. DREYFUSS: We did not see them in the
3 previous outage.

4 CHAIRMAN BONACA: So, this is indications
5 that developed over this period of operation.

6 MR. DREYFUSS: That's correct. What we
7 had done, in 2004, two cycles ago, is we did do some
8 strengthening modifications here, some weld build up
9 at this particular area, as well as putting in a
10 couple of gussets along the length of the steam dam to
11 improve its strength, and we found that in the heat
12 affected zone, where we did that work, that's where
13 the IGSCC showed up.

14 MR. ARMIJO: So, you believe it's residual
15 stress from your welding that caused the cracking to
16 initiate there?

17 MR. DREYFUSS: Yes, sir.

18 MR. ARMIJO: Do you have any micro
19 structural confirmation that it was IGSCC and not
20 something else?

21 MR. DREYFUSS: No.

22 MR. ARMIJO: So, it's just -- is there
23 water up there? How can you have a cracking in a
24 steam dryer? Is there liquid bays up there?

25 MR. MANNAI: A fraction of a percent.

1 MR. LUKENS: It's very low moisture
2 content at that part of the dryer.

3 MR. ARMIJO: But, there was no
4 metallographic sample taken to verify its
5 intergranulars?

6 MR. DREYFUSS: That is correct.

7 MR. ARMIJO: So, it's an indication, and
8 you concluded with G.E. that it was IGSCC.

9 MR. DREYFUSS: Right, and we will again
10 look at it next outage to confirm that.

11 MEMBER MAYNARD: Can you explain to me what
12 you mean by a very high-quality visual inspection?

13 MR. DREYFUSS: Yes, the standard that we
14 used was G.E. SIF Service Information Letter 644
15 requires visual examination. The technology that was
16 used, the cameras that were used, the speed at which
17 the cameras moved, the clarity of the water was very
18 high as well.

19 MR. RADEMACHER: And the lighting.

20 MR. DREYFUSS: And the lighting was very
21 good.

22 MR. RADEMACHER: It was almost EVT -- met
23 EVT standards, the enhanced visual requirements.

24 MEMBER SHACK: Now, how do you disposition
25 this curve crack? You know, what's the process?

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1 What's the acceptance criteria for the dispositioning?

2 MR. RADEMACHER: General Electric evaluates
3 it. Well, first off, just to remind you, this is on
4 the end of the steam dam, it's a ½ inch wide, just on
5 the face of the steam dam.

6 Then they evaluate the condition, where it
7 is, and whether it impacts the structural capability
8 of the steam dryer, and then they provide a response
9 to us that is reviewed by our structural folks to
10 verify that it's acceptable.

11 And --

12 Larry, do you have anything to add to
13 that?

14 MR. LUKENS: This is Larry Lukens.

15 We spent a lot of time on the phone with
16 General Electric, both their metallurgist and their
17 analysis folks, on this particular set of indications,
18 and the cracks are consistent with IGSCC. ~~The history~~
19 ~~on this particular spot in the dryer is that in 2004~~
20 ~~there were a number of welds that were put on because~~
21 ~~of cracks found in structural parts in the vicinity of~~
22 ~~that steam dam.~~

23 This particular spot in the steam dam is
24 not a structural part of the steam dam. It's about a
25 3-inch high piece of this 6-inch stainless plate, and

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1 these cracks are characteristic of stress relief.
2 And, in 2004, when the original indications in these
3 areas -- this area was identified, there was a lot of
4 discussion in that analysis about the stress induced
5 by the welding, by the original manufacturing process.

6 There are four symmetrical locations to
7 this specific spot, and only one of the four has these
8 indications.

9 MR. ARMIJO: So, G.E. dispositioned that by
10 saying, and correct me if I'm not saying what they
11 told you, but these cracks were caused by residual
12 fabrication stresses caused by the welding.

13 MR. LUKENS: That's correct.

14 MR. ARMIJO: ~~And they must have assessed~~
15 ~~that these cracks wouldn't propagate and leave you~~
16 ~~with a loose part~~

17 MR. LUKENS: That was our big concern, yes.

18 MR. ARMIJO: Okay, and that's been reviewed
19 with the staff.

20 MR. LUKENS: No, the staff --

21 MR. DREYFUSS: Well, we did do a -- we
22 had a telecon with Tom Scarborough and a number of the
23 consultants that were involved in the steam dryer
24 work, as a courtesy call, and did explain to them what
25 we saw and what we had identified as well.

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1 MR. RADEMACHER: And, in addition, we
2 forwarded our detailed report to the staff for their
3 review, as part of our license conditions, after each
4 inspection of the dryer wall, for the next -- this
5 cycle, as well as the next two refueling cycles, we'll
6 be continuing to monitor the steam dryer, and we'll
7 prepare a report for the staff for their review.

8 MR. LUKENS: That's a 60-day report.

9 MR. MANNAI: Yes, this is Dave Mannai. I
10 think it's worth noting, we had set up that courtesy
11 teleconference with the NRC staff ahead of time, even
12 before we noted these indications, and we discussed
13 those indications fully with the staff at that
14 telecon, and much of the questions that you are asking
15 now were similar to the questions they asked, and
16 staff, I believe, was satisfied at the end of that
17 teleconference. We owed them the formal reports in
18 accordance with our license condition, 60-day report.

19 MR. DREYFUSS: And, some of the industry
20 operating experience that we had followed is, there
21 were substantial flaws here along the lower plate,
22 along the gussets and shoes, as well as the gussets
23 pulling away from the actual base plate here. Again,
24 we looked at all of those areas, all of the preemptive
25 strengthening modifications that we had done, and

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1 found them to be in good order, no indications there.

2 MR. RADEMACHER: We performed over 460
3 inspections, both inside and out, and there was no
4 change in any of the previously identified
5 indications, and just the new ones that we have
6 mentioned during our conversation here today.

7 MR. DREYFUSS: Any other questions on the
8 steam dryer?

9 CHAIRMAN BONACA: Just the question I had
10 was, you will inspect again at the end of the new
11 cycle, and for how long do you plan to do inspections?

12 MR. DREYFUSS: We will follow the SIL-644
13 guidance. However, we did have a license condition
14 that, rather than every other outage that we would do
15 three successive --

16 CHAIRMAN BONACA: Yes.

17 MR. DREYFUSS: -- full inspections of the
18 susceptible, accessible welds. So, this outage and
19 the next two, we will also do the same type of high-
20 quality visual inspection.

21 CHAIRMAN BONACA: So, the dispositioning
22 was, essentially, for a cycle length, or a disposition
23 that's acceptable for a cycle of operation.

24 MR. DREYFUSS: That's correct.

25 CHAIRMAN BONACA: And, they will be

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1 inspected again.

2 MR. DREYFUSS: Inspect again next cycle,
3 correct.

4 CHAIRMAN BONACA: Thank you.

5 MR. RADEMACHER: In addition now, as part
6 of license renewal, we have an ongoing commitment to
7 meet SIL 644 for the license extension period.

8 MEMBER SHACK: And, it is sort of a rock in
9 a hard place. Every strengthening operation you make
10 to protect against fatigue just gives you a new ISSC
11 location.

12 MR. DREYFUSS: That was one of the
13 concerns that we had, in terms of the modeling that we
14 did on the steam dryer, to make sure that we had mesh
15 sizes small enough to really get a good understanding
16 of what the stresses were at those key locations.
17 That did prove to have been accurate, and we don't see
18 any indications.

19 MEMBER SHACK: Now, the fluids is up here
20 low enough, you don't have to worry about helium in
21 the stainless steel?

22 MR. DREYFUSS: Right, yes.

23 MEMBER ABDEL-KHALIK: Was the steam
24 pressure monitored during the power uprate to detect
25 any sort of high-frequency variations in steam

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1 pressure?

2 MR. DREYFUSS: Yes, we had highly
3 instrumented both the steam lines, feedwater lines as
4 well, and looked at steam dome pressure, and we
5 monitored any fluctuations there.

6 What we had learned from the industry is
7 that there were some signals, acoustic signals, that
8 were being brought from the main steam lines back to
9 the steam dryer, that's what we monitored.

10 MEMBER ABDEL-KHALIK: And, what were the
11 results of those monitoring activities?

12 MR. DREYFUSS: We stayed well within the
13 loads. We never -- it went as we predicted, and did
14 not approach the ASME loads.

15 MEMBER ABDEL-KHALIK: And, what were the
16 dominant frequencies?

17 MR. DREYFUSS: We had a frequency at 137
18 Hertz, and another one -- and we'll give you the exact
19 numbers, but a little bit -- I think it was 148, 148
20 Hertz, and they coincided with the SRB branch line
21 connections off the main steam lines. We had
22 predicted we would see a spike there, we did see it
23 there, it grew and then mitigated, and stayed within
24 the limits.

25 MEMBER ABDEL-KHALIK: Thank you.

1 MR. DREYFUSS: Okay. Flow accelerated
2 corrosion. This was another area that we paid
3 particular attention to under the uprate conditions.
4 We did increase the number of FAC inspections by 50
5 percent from what we typically do during outages. We
6 did do 63 inspections overall. They were satisfactory
7 and in fact they were consistent with your
8 analytical predictions that we use in our modeling for
9 FAC.

10 One area that, Jim, maybe you can talk
11 about, the cross-around piping inspection that we did.
12 It's one of the susceptible areas.

13 MR. FITZPATRICK: We've got one remaining
14 carbon steel cross-around. Jim Fitzpatrick. It's the
15 only thing left in the system that is still
16 susceptible, so we use that as an indicator, and we've
17 been doing visual inspections of that almost every
18 outage. And, it's, essentially, the same condition it
19 was in 1996, even with the power uprate.

20 We have visual marks on the inside, and
21 they are still there after this cycle.

22 MEMBER SHACK: Okay, that's how you do the
23 visual, it's still there.

24 MR. FITZPATRICK: Well, we did UTs, and we
25 have a mat on the inside, and you go inside the pipe

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1 and see if it's still there.

2 ~~MEMBER SHACK: There's no wall thinning~~

3 ~~MR. FITZPATRICK: No, and that's~~

4 ~~surprising~~

5 MR. LUKENS: This is Larry Lukens, maybe,
6 maybe the gentleman didn't completely understand what
7 you said, there were marks -- marks we put on the
8 inside --

9 MR. FITZPATRICK: Yes.

10 MR. LUKENS: to make sure that we
11 understood

12 MEMBER SHACK: I was sort of wondering how
13 you were going to do the visual, you know.

14 MR. ARMIJO: Poke in your head.

15 MR. LUKENS: Actually crawl down the pipe.

16 MEMBER SHACK: No, but I mean, you have
17 marks, and if they are still there that's an
18 indication you are not losing metal, yes.

19 MEMBER MAYNARD: ~~The 50 percent increase in~~
20 ~~number of FAC inspections is that just the number of~~
21 ~~inspections, or did you also increase number of~~
22 ~~locations that you are looking at?~~

23 ~~MR. DREYFUSS: Jim?~~

24 MR. FITZPATRICK: A mixture of both. We do
25 repeat inspections. We do some new areas, try to mix

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1 it up, try to add more areas on the same system, look
2 at the models, get more data for the check-works
3 models we are using.

4 MR. ARMIJO: Now you used you have
5 chrome-moly most here.

6 MR. FITZPATRICK: In the extraction steam
7 system it's all chrome-moly. The heated drain
8 systems, everything downstream of the local control
9 valves are chrome-moly or stainless, except for the
10 lowest load pressure here.

11 MEMBER SHACK: ~~Do you have a feel for the~~
12 ~~amount of margin you have with this material compared~~
13 ~~to the carbon steel, as far as IAC resistance?~~

14 MR. FITZPATRICK: EPRI publishes 34 times
15 more resistant than the carbon.

16 MEMBER SHACK: Order of magnitude at least,
17 huh?

18 MR. FITZPATRICK: Well, we are not seeing -
19 - we've done some monitoring in the past 15 years on
20 the chrome-moly and haven't seen anywhere at all.

21 MEMBER SHACK: And, this is 2-1/4 chrome-1-
22 moly or what?

23 MR. FITZPATRICK: ~~Some 2-1/4, some 1-1/4,~~
24 ~~EPRI rec even if you have a carbon steel that's got~~
25 ~~more than 10 percent it works~~

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1 CHAIRMAN BONACA: Going back to the 50
2 percent increase, what was the criteria used? I mean
3 you looked for still susceptible locations, right?

4 MR. DREYFUSS: Go ahead, Jim.

5 MR. FITZPATRICK: Jim Fitzpatrick.

6 Just for planning, going to the power
7 uprate, we had pretty good confidence in what was
8 going on prior to power uprate, and we figured we'd do
9 50 percent more inspections to get more data, just to
10 get it back into the check-works models, and then at
11 the end of the three cycles we'll be assessing where
12 to go from there.

13 We've been on a trend of small in order
14 inspections over time, and most of the industry is,
15 too.

16 MR. DREYFUSS: Okay, and again, we'll
17 continue to do the increased scope of these
18 inspections for two more cycles.

19 Now, moving on to the license renewal
20 project itself. As you have heard from introductions,
21 we have a multi-discipline team, a good blend of
22 people from both our Corporate staff, as well as at
23 the site. At the site, we have personnel, not just
24 from the key engineering programs, programs and
25 components and system engineering, design engineering,

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1 we also had operations, maintenance and other groups
 2 participate, so that we would get that synergy and
 3 make sure everybody sees what's coming here with
 4 license renewal.

5 ~~We did as far as the Revision 1 to the~~
 6 ~~Standard Review Plan in GALL,~~ it's noteworthy that
 7 both Pilgrim and VY were the first to go that route,
 8 and we are going to talk more about GALL exceptions.
 9 I know you are interested in that, but general overall
 10 -- over-arching philosophy on the GALL is that we
 11 comply with the GALL.

12 ~~There were a number of areas where others~~
 13 ~~could characterize them as technical exceptions for~~
 14 ~~the GALL that we needed to take,~~ but we were
 15 conservative in the development of the GALL, and I
 16 think you'll find that these are relatively minor
 17 exceptions, and we'll speak to them in detail as well.

18 Of course, we incorporated industry
 19 lessons learned, both at Pilgrim and other fleet
 20 plants that have undergone license renewal, and others
 21 in the industry.

22 As far as the exception types, we have
 23 overall 30 exceptions to the GALL. ~~As far as the~~
 24 ~~types of exceptions, you know for example, if we were~~
 25 ~~committed to a different version of an ASME code, we~~

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1 did take exception to the GALL. So we've broken down
2 the exceptions that we took into six categories that
3 we'll describe to you and I'd like to ask Alan Cox to
4 brief you on that.

5 MR. COX: These six categories -- this is
6 Alan Cox -- the six categories was our -- to try to
7 characterize these exceptions, and you can draw the
8 lines in different places, they are somewhat
9 arbitrary, I guess, and there's some overlap between
10 them. So, there's not a real clear-cut line.

11 The first category we've got there is
12 where an activity is not applicable to the plant
13 design. That was pretty straightforward. We may have
14 -- I think we took an exception to metal enclosed bus
15 program, where it talked about insulation between
16 phases, we didn't have insulation between phases. In
17 our bus, we had insulation or insulators that
18 supported the bus, but we didn't have any insulation
19 between phases.

20 So we took, I guess, an overall
21 philosophy on these exceptions, we took a pretty
22 conservative or a literal interpretation of what was
23 in GALL. If it said do an inspection, we did have an
24 inspection, we tended to call that out as an
25 exception. I think if you compare applications from

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1 plant to plant you'll see that there's different
 2 degrees of that, there's different levels of
 3 conservatism or how literal you take things, so you'll
 4 see differences in numbers probably because of those
 5 factors.

6 The second category we've got there is an
 7 alternative that's consistent with approved methods.
 8 I guess one of the other philosophies that we took
 9 was, if we had a -- as you know, GALL says that that's
 10 one way of doing things, if we had an existing plant
 11 program that had proven within the, you know, the
 12 circumstances of our plant, our people, our training
 13 programs, if that existing program had proven
 14 effective over the years in dealing with that aging
 15 effect, we didn't make the change in the program just
 16 to say that we were consistent with GALL. We felt like
 17 it was more important to use what's already in place
 18 and what's establish and proven for our plant, for our
 19 circumstances.

20 The third category is programs based on
 21 different code --

22 MEMBER MAYNARD: ~~Excuse me alternative~~
 23 ~~consistent with approved methods from what I~~
 24 ~~understood you to say. I'm not sure what the approved~~
 25 ~~methods are. Is it approved method just because it~~

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1 has worked for you or is it other things in the
2 regulations that

3 MR. COX: In some cases it's -- the most
4 obvious thing that comes to mind is the BWR VIP
5 program. A lot of times you have specifics there that
6 are -- maybe we've got an approved exception to the
7 BWR VIP program because of plant unique circumstances,
8 and we would take that approach.

9 MR. DREYFUSS: You know, Alan, we have an
10 example that we could go to here.

11 MR. COX: Right.

12 This is one that dealt with the frequency,
13 and we had approval of the Generic Letter 89-13, to do
14 things at a refueling frequency, and I think the GALL
15 report may have been more specific than that, it may
16 have said annually. In some cases it was not
17 practical to do it annually, you had the access to the
18 system, you had plans to do things during refueling
19 outages.

20 MEMBER BARTON: Your refueling outages are
21 how often?

22 MR. COX: Eighteen months.

23 MEMBER BARTON: Eighteen months?

24 MR. COX: Right.

25 MEMBER BARTON: Okay.

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1 MR. COX: That's an example of that
2 category. Again, there are others. There was, oh,
3 seven or eight examples I think that we had in that
4 category.

5 ~~the third one different ASME code~~
6 ~~edition. That's pretty straightforward. There's been~~
7 ~~a lot of discussion about that. There's was a handful~~
8 ~~of things that fall in that category.~~

9 Again, this category met the equal to or
10 better than the NUREG 1801 method, that's a little bit
11 of, you know, the second category that we talked about
12 earlier is a little bit of the same thing, but we've
13 got an example of that -- can you click on the example
14 there?

15 MR. DREYFUSS: Yes, let's look at that.

16 MR. COX: The GALL analysis program, the
17 GALL program, you know, again, was a program that was
18 developed off of somebody -- some specific plant that
19 was reviewed and accepted. Well, it turns out that
20 that particular plant program had flashpoint testing
21 in there. We have a practice at vy to do a fuel
22 dilution test, which is considered to be a better
23 indicator of the contamination of the lube oil with
24 fuel oil than a flashpoint test. So again, it's an
25 alternative that's equally effective, if not better,

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1 than what was in the NUREG, and it's a fairly minor
2 thing, it took pretty little interpretation and
3 decided that that was something we needed to flag as
4 an exception.

5 MR. DREYFUSS: Okay

6 MR. COX: The experience justifies
7 exception.

8 MEMBER BARTON: That's a scary one

9 MR. COX: It really kind of ties back in to
10 the philosophy that we were talking about earlier,
11 where you've got an established program that's been
12 proven effective under the plant specific
13 circumstances that it's applicable to, and just go and
14 click on the example of that, if you will.

15 Diesel fuel additives is specified in the
16 particular GALL program. At VY, there's a long
17 history of not requiring any additives beyond those
18 which are provided as part of the manufacturing
19 process by the fuel vendor, and we've had very good
20 operating experience with the existing process. We
21 didn't feel like it was appropriate to change that.

22 MEMBER BARTON: How about how about
23 containment leak rate tests ten to 15 years, where did
24 that one come from?

25 MR. UNDERKOFFLER: We presently Ted

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1 Underkoffler -- we presently test containment on a
2 ten-year basis.

3 MEMBER BARTON: Right.

4 MR. UNDERKOFFLER: We are right in a five-
5 year extension right now.

6 MEMBER BARTON: About what?

7 MR. UNDERKOFFLER: On the analysis of the
8 uprate analysis. We did the extension for five years.

9 MEMBER BARTON: One time?

10 MR. UNDERKOFFLER: One time only, and we'll
11 be doing our integrated test in 2010.

12 MR. DREYFUSS: Go ahead.

13 MR. COX: I'd say there's only a couple
14 exceptions that we considered in that fifth category.

15 The final one is the NUREG 1801 method is
16 not feasible, and again, this examples that we had in
17 that category were all related to the BWR VIP program,
18 where the VIP program recognizes that some of the
19 inspections that they called for are not technically
20 feasible at this time, and, you know, they have some
21 allowances in there. Larry could probably speak
22 further to this, but that was -- all three of the
23 items we put into that category were BWR VIP items,
24 where the technology is not there to allow you to do
25 the particular inspection.

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1 MR. LUKENS: This is Larry Lukens.

2 ~~Probably the classical example of this is~~
3 ~~the so-called P9 weld and the core spray around the~~
4 ~~collar. The P9 weld is inaccessible. It's not visible,~~
5 ~~can't get there. Several years ago, we got a technique~~
6 ~~approved by EPRI to interrogate this weld by UT~~ and
7 that technique was subsequently disqualified because
8 nobody currently believes we can come up with a UT
9 technique to interrogate that weld.

10 So, that weld is inaccessible, and that
11 weld is redundant to other welds, which we can
12 examine, and which we have examined, we do examine
13 those at the frequency specified by the BWR VIP, so
14 that our inability to examine that weld doesn't affect
15 structural integrity of the connection, it is an
16 artifact of the way the plant was built, as all BWRs
17 we build.

18 ~~MEMBER BARTON: I think the concern I've~~
19 ~~got about this whole issue is that there were - you~~
20 ~~explained your reasoning for not complying with all~~
21 ~~the GALL issues, but yet the audit team did find, when~~
22 ~~you did divert to your own program for whatever reason~~
23 ~~it was, that you did have to make additional~~
24 ~~commitments to that program that you were using, even~~
25 ~~though it wasn't a GALL program. So, that kind of~~

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1 ~~says they, how smart was the NRC team that was there~~
2 ~~that did the audit that picked these up that made you~~
3 do -- that you then did agree to do some additional
4 commitments to what you were doing. And, there were
5 several of those in this whole stack of exceptions,
6 and I guess that was the thing that was most
7 concerning to me. Suppose somebody didn't pick this
8 up, and you guys agreed to do additional things to the
9 program you were doing. And, I don't specifically
10 remember which ones they were, but there were a few of
11 those like that.

12 MR. LUKENS: This is Larry Lukens.

13 I remember a few of those.

14 MEMBER BARTON: Yes.

15 MR. LUKENS: They dealt, in my area they
16 dealt with things like frequency of inspections in
17 fire protection systems.

18 MEMBER BARTON: Yes, that's one.

19 MR. LUKENS: And, the intervals that we
20 have used are currently in our TRM, they were derived
21 from are the same intervals that used to be in tech
22 specs. They were the intervals that we've used
23 successfully for as long as we've had a fire
24 protection program.

25 And, we -- our preference would have been

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