

1 UNITED STATES OF AMERICA  
2 NUCLEAR REGULATORY COMMISSION  
3 + + + + +  
4 STATUS OF DAVIS-BESSE  
5 LESSONS LEARNED  
6 TASK FORCE RECOMMENDATIONS

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9 Nuclear Regulatory Commission  
10 One White Flint North  
11 Rockville, Maryland

12  
13 Thursday  
14 February 26, 2004

15  
16 The Commission met in open session, pursuant to notice,  
17 Nils J. Diaz, Chairman of the Commission presiding.

18 COMMISSIONERS PRESENT:

19 NILS J. DIAZ, Chairman  
20 EDWARD MCGAFFIGAN, JR., Commissioner  
21 JEFFREY MERRIFIELD, Commissioner

22 (This transcript produced from electronic caption media and audio  
and video media provided by the Nuclear Regulatory Commission.)  
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1 STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

2 Secretary

3 General Counsel

4 DR. WILLIAM TRAVERS, EDO

5 SAM COLLINS, DEDO

6 DR. CARL PAPERIELLO, DEDO

7 JIM DYER, Director, NRR

8 JACK STROSNIDER, Deputy Director, RES

9 WILLIAM BATEMAN

10 WILLIAM BECKNER

11 STEWART RICHARDS

12 NILESH CHOKSHI

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

2            CHAIRMAN DIAZ: Good afternoon.

3            I believe that this is about Davis-Besse Lessons

4 Learned. Is that correct? So welcome to the Commission meeting

5 on the implementation on the Davis-Besse Lessons Learned Task

6 Force and the recommendations.

7            As you all know by now, I personally believe -- and I

8 hope I have made that clear -- believe in strong safety programs

9 and a strong regulatory program which are well based on the

10 engineering and practical know-how. I think engineering and

11 practical know-how have to do with what happened in Davis-Besse

12 and have to do with the lessons that we learned after Davis-Besse.

13            It is my expectation that the outcome of the Davis-Besse

14 Lessons Learned Task Force, their activities will result in strong

15 safety and regulatory programs.

16            Technological know-how is an essential tool for

17 protecting the health and safety of the public. And that

18 technological know-how comes from many sources, including learning

19 from experience.

20            Davis-Besse reactor vessel head corrosion was not an

21 accident. But it was close enough to an accident that it deserves

22 our most serious attention. The event needed better focused

23 licensee safety programs and better focused and better

24 communicated regulatory programs.

25            An extraordinary level of oversight has been provided on

26 the Davis-Besse plant to the NRC 0350 process and many other

1 means. And as part of that process, the Commission has been kept  
2 currently informed, appropriately informed, and abreast of the  
3 issues.

4 I understand that Mr. Collins will provide us today with  
5 a brief update, as time allows, on Davis-Besse. However, the real  
6 purpose for the meeting today is to address the generic  
7 implications to the reactor vessel head corrosion for both the  
8 industry and for the NRC's regulatory programs.

9 Davis-Besse Lessons Learned Task Force provided the  
10 Commission with a broad and thoughtful evaluation of pertinent NRC  
11 programs and identified numerous areas for enhancements.

12 Today we will hear from the NRC staff on the status of  
13 implementation of those recommendations. And I know we're going  
14 to have a very interesting meeting. Before I turn to the staff to  
15 conduct the meeting, I would like to offer my fellow Commissioners  
16 the opportunity for any opening remarks.

17 COMMISSIONER MERRIFIELD: Thank you, Mr. Chairman.  
18 Thank you very much for convening this meeting.

19 As you mentioned, I think we all have been kept very  
20 well informed regarding the 0350 panel activities of Davis-Besse.  
21 Not only as a result of the efforts of our staff, as they are  
22 required to keep us fully and currently informed, but I think a  
23 very strong effort on the part of the individual members of the  
24 Commission and the Commission collectively, although not always  
25 open to the public, a very active effort on our part to keep well  
26 informed about the ongoing activities of that panel.

1 I appreciate the Chairman's comment and the suggestion  
2 that Sam Collins will be providing us a brief update on the status  
3 of the restart activities at Davis-Besse. I think that's useful  
4 just to make sure that we are always fully and currently informed.  
5 And I haven't gotten a briefing yet today. But that will be good  
6 to get today's briefing.

7 And I look forward to a discussion about the status of  
8 the ongoing activities associated with Lessons Learned Task Force  
9 recommendations.

10 I would say as a final comment, before we begin, this is  
11 the second one of these meetings that we have had. And certainly,  
12 from my part, I think it should not be our last. And I think our  
13 staff should be prepared.

14 Obviously, it's a joint decision on the part of the  
15 three of us. But I think we should be prepared at some  
16 appropriate point down the road, be it six months, nine months or  
17 a year from now to reconvene and hear yet again how further  
18 progress that is being made to ensure that we are keeping our eyes  
19 on the ball as it regards the lessons to be learned from this  
20 situation.

21 Thank you, Mr. Chairman.

22 CHAIRMAN DIAZ: Thank you very much, Commissioner  
23 Merrifield.

24 Dr. Travers?

25 DR. TRAVERS: Thank you, Chairman.

26 As you know, although the Davis-Besse reactor vessel had

1 degradation, it did not impact public health and safety. We have  
2 taken these matters very seriously and we have been keeping the  
3 Commission informed on how we have gone about leveraging the  
4 information on how our programs could and should have done a  
5 better job in helping to prevent these issues from arising.

6       To help to do that I established a Lessons Learned Task  
7 Force to perform a self-assessment of our regulatory programs  
8 related to degradation of the Davis-Besse Nuclear Power Station  
9 reactor vessel head. The task force completed its review and  
10 provided a final report that contains some 51 recommendations in  
11 September of 2002.

12       I established a senior management review team led by  
13 Carl Paperiello to review and evaluate the final LLTF  
14 recommendations. The review team endorsed all but two of those  
15 recommendations, prioritized them and grouped them into four  
16 overarching categories for action.

17       These categories included assessment of stress corrosion  
18 cracking, assessment of operating experience, the evaluation of  
19 our inspection assessment and project management guidance, and  
20 assessment of barrier integrity requirements.

21       In 2003, I tasked the staff to develop an overall plan  
22 that follows the senior management review teams's recommended  
23 course of action or courses of actions.

24       And as you pointed out, we are here today to continue to  
25 keep the Commission informed on how we are doing on these tasks  
26 and to give you some details on just where things stand.

1 I will offer you, Chairman, whichever way you would like  
2 to conduct the meeting, if you would like the status of the  
3 Davis-Besse first or at the end. We can proceed in any way you  
4 would like.

5 CHAIRMAN DIAZ: Dr. Travers, your choice, sir.

6 DR. TRAVERS: In that case, since it has come up, I  
7 think we will touch on the status of our efforts at the moment.  
8 And some things that happened just today that I think I will let  
9 Sam mention.

10 MR. COLLINS: Thank you, Bill.

11 Good afternoon, Chairman, Commissioners.

12 Let me review briefly for you the current status of  
13 Davis-Besse restart initiatives. First order would be the plant  
14 conditions themselves.

15 The plant is in mode three, which is the hot stand-by  
16 condition. That's the normal operating pressure, normal operating  
17 temperature condition that the plant is expected to maintain that  
18 condition until and if a restart decision is made.

19 Recent ongoing events would indicate that the licensee  
20 continues to work through a list that sums up to 11 remaining  
21 restart restraint items - that list changes daily. It is, however,  
22 declining in overall number.

23 As you know, we have been keeping the Commission  
24 informed as Commissioner Merrifield indicated. We held the  
25 Commissioner technical assistant briefing yesterday.

26 Recent events were two weeks ago, Jim and I were in

1 the area of the site for the public meeting in which the licensee  
2 presented a restart plan and their restart recommendation and the  
3 bases for that.

4 That would have been my third trip to the site.

5 Since that time, Region III, as the 0350 panel  
6 dictates, has been working through the restart deliberation  
7 process. And that restart deliberation process is comprised of a  
8 multi step deliberative process which originates and is centered  
9 around Region III, and the regional administrator, Jim Caldwell.

10 At this time, he has been briefed by the restart panel.  
11 He is working with the restart panel on the restart panel's  
12 recommendation to him. He would then take that restart  
13 recommendation and perform whatever independent measures or have  
14 questions answered if he needs to have that done. And I  
15 understand he is in that process today.

16 As part of the restart consideration for the plant, we  
17 have issued recently to the licensee -- and this is a public  
18 document -- a letter, a planned approach to an order for  
19 Davis-Besse which would require them to take actions following a  
20 restart decision, if and when it is made, to require them to  
21 commit to continuing reviews.

22 As you know, that order has been a topic of discussion  
23 amongst the staff and with the Commission. And that order has  
24 been proposed.

25 The document has been provided to the licensee. And my  
26 understanding is that the licensee has agreed to that document and



1 has returned it to the staff. That is a public document. There  
2 is a press release out. I believe you will have the advantage of  
3 acknowledging that.

4 All that has transpired within the past hour, hour and a  
5 half.

6 That does not mean that the staff has made a restart  
7 decision.

8 At this time, the Regional Administrator, Jim Caldwell,  
9 is still deliberating on the restart panel's recommendation. The  
10 next steps for him would be to conclude his agreement with the  
11 restart panel recommendations. That may take some adjustments and  
12 information.

13 And then we have a communications plan, if and when that  
14 decision is made, to allow the restart of Davis-Besse, that would  
15 roll out over a period of two to three days, including  
16 notification of a licensee, if and when it is appropriate.

17 CHAIRMAN DIAZ: Thank you, Mr. Collins.

18 Just a couple comments for the public record so the  
19 issue will be clearly understood.

20 For a significant period of time, the staff has been  
21 providing information to the Commission and we get the EDO notes  
22 essentially on a daily basis. The EDO, almost daily, briefed the  
23 Chairman and there are Commissioner assistants in the room that are  
24 currently kept abreast of what has been happening in Davis-Besse  
25 and essentially almost on a daily basis.

26 The second issue is that the Commission has delegated to

1 the staff the responsibility of delivering, analyzing, and  
2 essentially, you know, providing the licensee with an order, if  
3 such is the case.

4 It is a Commission where we understand that the process  
5 is clearly divided. We are abreast of it. But it is a decision  
6 that has been delegated to the staff. That, of course, a  
7 Commission can always make a difference, if this is necessary, to  
8 alter the process. But if that's the way the process is right  
9 now, correct?

10 MR. COLLINS: That is correct.

11 COMMISSIONER MCGAFFIGAN: Mr. Chairman, I just want to  
12 stress that it is a coincidence. This meeting, I think, was  
13 scheduled a few months ago. And the fact that this letter for  
14 Mr. Caldwell went out this morning could not have been foreseen  
15 two and a half months ago when we first talked about having a meeting  
16 approximately at this time on this subject.

17 We think it's very important that we follow the  
18 Davis-Besse Lessons Learned efforts. We have a lot to learn. A  
19 lot of people have a lot to learn. And we had scheduled this  
20 meeting for that purpose. And I think there is now some danger of  
21 confusion because of the coincidence of events.

22 But the Chairman's remarks, mine, and I'm sure  
23 Commissioner Merrifield's are all trying to point out that there's  
24 two separate processes here. And our focus today is on the  
25 long-term efforts and efforts already undertaken by the staff to  
26 implement the recommendations of the Lessons Learned Task Force of

1 more than a year ago.

2           COMMISSIONER MERRIFIELD: I would associate myself with  
3 the comments both of Chairman Diaz as well as Commissioner  
4 McGaffigan. Clearly, on almost a daily basis, through our staff,  
5 we have been receiving updates on the progress of the 0350 panel  
6 and the licensee.

7           In addition, we all, through regular contact with the  
8 staff, receive additional information as well.

9           I had the opportunity to talk that Jim Caldwell  
10 yesterday, again, as part of a regular process, to make sure that  
11 I'm keeping fully informed on the activities of our staff. So I  
12 feel very well informed and have had a real opportunity to  
13 understand what is going on in this given activity.

14           I would also agree with Commissioner McGaffigan, our  
15 intent here was to focus on the lessons learned. There is a  
16 happenstance of coincidence. Nonetheless, I think there's a  
17 utility, given the circumstances that we are presented with today,  
18 in receiving this information. And I would have to thank Sam for  
19 a succinct understanding of what is going on.

20           The last thing I would say, the principal purpose of  
21 this meeting, I think that Jack Grove and the folks up in Region  
22 III who have been the lead of the 0350 panel, assisted by a  
23 significant number of people here at headquarters, have done a  
24 very long, two-year, very hard piece of work that they ought to be  
25 proud of. We need to congratulate them and appropriately  
26 recognize them for that level of work that they have accomplished.

1 They are not done. They have not made any decisions.

2 But I think it is worth recognizing today the work they have

3 accomplished up until now, because it is extensive and worth

4 honorable mention.

5 CHAIRMAN DIAZ: Thank you, Commissioner McGaffigan and

6 Merrifield.

7 DR. TRAVERS: Thank you, Chairman. And we will turn to

8 the topic at hand.

9 As I pointed out earlier, we think one of the most

10 important things we can do as a staff following the situation that

11 we found ourselves in with Davis-Besse and the reactor vessel head

12 degradation is to carry out a self-assessment, to do that in an

13 in-depth way and to factor what we learn from that self-assessment

14 into our programs to make them better. That's what we are doing.

15 And we wanted to provide you with a status. And to do

16 that, Jim Dyer is going to be doing it.

17 Just to make quick mention, at the table we have Jack

18 Strosnider from Research and, of course, Carl is with me as well.

19 Thanks.

20 Jim.

21 MR. DYER: Thank you, Dr. Travers.

22 Good afternoon, Chairman, Commissioners.

23 Slide two, please.

24 The agenda for today's presentation follows closely the

25 four overarching categories created by the senior management review team for

26 the 49 recommendations that Dr. Travers discussed earlier.

1           The development of the plan for implementing the  
2 Davis-Besse Lessons Learned Task Force recommendations was a joint  
3 effort between Research and NRR. After my overview today, the SES  
4 managers assigned lead responsibility for accomplishing each of these  
5 overarching categories will provide you the status from the podium  
6 behind me and to answer your questions.

7           Those managers are Bill Bateman for the stress corrosion  
8 cracking action plan, Bill Beckner for the operating experience  
9 action plan, Stewart Richards for the inspection assessment and  
10 project management action plan, and Nilesh Chokshi from Research  
11 for the barrier integrity action plan.

12          Also present to assist us today is Brendan Moroney, who  
13 is the lead project manager for coordinating all four of the  
14 action plans together and making the presentations; Art Howell,  
15 the Davis-Besse Lessons Learned Task Force team leader; and Bill  
16 Ruland from the Davis-Besse 0350 oversight panel.

17          Additionally, there are countless other staff members  
18 that are listening or who have contributed to Davis-Besse. It's  
19 been a very significant effort, as you recognize, for over a  
20 two-year period. And the Lessons Learned Task Force has been  
21 going on for quite a while.

22          Slide three, please.

23          In response to EDO tasking, NRR and Research developed  
24 the overall plan in March of 2003 to implement the senior  
25 management review team recommended course of action. We have  
26 accomplished this through a two-tiered approach.

1 First, for the 21 high priority recommendations, we  
2 developed individual action plans in each of the four overarching  
3 areas. These plans identify the responsible office and provide  
4 the schedule for implementation and resource estimates.

5 Additionally, these plans are monitored by the  
6 responsible SES manager and quarterly status reports are provided  
7 to senior agency management.

8 Slide four, please.

9 The medium and low priority recommendations are  
10 incorporated into individual office operational activities using  
11 the Planning, Budgeting and Performance Management or PBPM  
12 process. Thus, they are integrated into the office ongoing  
13 priorities. And schedules may be adjusted due to emerging or  
14 higher priority work.

15 But we are still tracking those items through to  
16 completion.

17 The status of all of the recommendation is reported  
18 semiannually to the Executive Director for Operations and  
19 subsequently provided to the Commission, as was done with this  
20 most recent second report. This ensures we don't lose track of  
21 any of the items.

22 The most recent status summary we provided is provided  
23 at the entrance to the Commission conference room for any members  
24 who are visiting here today.

25 Slide five, please.

26 Overall we have made good progress on some very

1 difficult action items during the past year. There's been  
2 significant activity in the stress corrosion cracking and  
3 inspection assessment and project management guidance actually  
4 given, issued, developed, and sent to the industry.

5       The operating experience task force has provided  
6 enhancement recommendations for staff implementation to influence  
7 our reactor oversight program and the way that we conduct  
8 day-to-day business. And the barrier integrity action plan has  
9 been initiated to develop some long-term efforts that will result  
10 in long-term changes to the way we do business in the reactor  
11 oversight program and access barrier integrity.

12       We completed all seven high priority recommendations  
13 scheduled to be completed in 2003. Of the 16 medium and low  
14 priority recommendations scheduled to be completed in 2003, we  
15 completed 9 and rescheduled 7, using our PBPM process.

16       Twenty-two recommendations are currently scheduled to be  
17 completed in 2004. And we view this as a very challenging but  
18 achievable goal. As you will hear in the subsequent  
19 presentations, these initial action plans, as they were originally  
20 developed, are still being expanded as we learn more information  
21 and as we pursue further issues.

22       We are creating new milestones. We will be deciding the  
23 appropriate place to close, how to close out the various action  
24 items.

25       Five recommendations are scheduled to be completed in  
26 2005. Six recommendations do not yet have a completion schedule.

1 Primarily, because the scope of work involved will be determined  
2 by the outcomes of earlier recommendations.

3 The completion dates for some of these extend beyond  
4 2005 since they involve rulemaking or other significant  
5 regulatory actions.

6 At this time, if there's no questions, I would like to  
7 turn the meeting over to Bill Bateman to discuss the status of  
8 stress corrosion cracking.

9 Bill?

10 MR. BATEMAN: Thank you, Jim.

11 Good afternoon, Mr. Chairman, Commissioners, I'm Bill  
12 Bateman, Chief of Materials and Chemical Engineering Branch in the  
13 Division of Engineering in NRR.

14 I am here today --

15 MS. VIETTI-COOK: Could you talk into the microphone -- little closer  
16 to you.

17 MR. BATEMAN: How's that?

18 Did you get the first part of my talk?

19 I will be covering the activities relating to stress  
20 corrosion cracking.

21 There are five high-priority recommendations under the  
22 stress corrosion cracking categories which are included in the  
23 action plan. Two lower priority items closely related to these  
24 have also been included.

25 One recommendation was to assemble foreign and domestic  
26 information concerning Alloy 600, nozzle cracking and boric acid



1 corrosion. The Office of Research has been assembling information  
2 on nozzle, J-groove attachment weld and other pressure vessel  
3 penetration cracking and will complete this phase of the work in  
4 March of this year.

5       Collection of information on boric acid corrosion of  
6 reactor structural materials, particularly low alloy steel,  
7 which will also been done by the Office of Research, is scheduled  
8 to be completed in October of this year.

9       Another recommendation was to determine if it is  
10 appropriate to continue using the existing time and temperature  
11 stress corrosion cracking susceptibility model as a predictor of  
12 reactor vessel head penetration nozzle susceptibility to primary  
13 water stress corrosion cracking.

14       This evaluation was completed in July 2003. While there  
15 are many enhancements that could be made to make the  
16 model more accurate, the existing model was determined to be  
17 accurate and has proven very helpful in developing criteria for  
18 the inspections required in the bulletins and orders issued to  
19 address this subject.

20       The Lessons Learned Task Force recommended that the NRC  
21 encourage the industry to develop and incorporate revise  
22 inspection requirements into the ASME code which could then be  
23 endorsed and a revision to 50.55a, or to alternatively, to revise  
24 50.50a to address these areas.

25       I will discuss the status of these options later in my  
26 presentation.

1           There are three recommendations relating to inspection  
2 program guidance. One is to develop a revised existing guidance  
3 to ensure NRC inspectors periodically review reactor pressure  
4 vessel head inspections during licensee in-service inspection  
5 activities.

6           The other two relate to inspection of licensee boric  
7 acid corrosion control programs. Temporary inspection guidance in  
8 these areas was issued to support generic communications. And  
9 permanent changes to the inspection procedures will be completed  
10 this year.

11           Slide seven, please.

12           Previously initiated actions with which Lessons Learned  
13 Task Force recommendations were combined include the agency  
14 response to the Summer hot leg cracking, axial and circumferential  
15 cracking and reactor vessel head penetrations and overall efforts  
16 to better understand Alloy 600 cracking.

17           Substantial progress has been made on nearly all of  
18 these activities. Industry response has generally been positive.  
19 Two fairly new groups were formed to address materials issues that  
20 include the Materials Executive Oversight Group and the Materials  
21 Technical Advisory Group.

22           The Materials Reliability Project, the Electric Power  
23 Research Institute, INPO and the BWR Vessel Internals Project  
24 continue to be active players.

25           Most recently, industry has been aggressive in working  
26 both with a regulator and licensees. Particular examples include

1 a proposal by the Westinghouse Owners Group of an inspection  
2 program to address Combustion Engineering, pressurizer heater  
3 sleeve leakage, and a Materials Reliability Project proposal that  
4 proposes to perform bare metal visual inspections of the similar  
5 metal while it is within the reactor coolant pressure boundary.

6 Slide 8, please.

7 Since the Davis-Besse event and the Lessons Learned Task  
8 Force efforts, a number of activities have been completed and a  
9 number remain ongoing. Bulletin 2002-01 was issued to ensure that  
10 there were no other plants that had a similar situation as found  
11 at Davis-Besse. Efforts on this were completed and a regulatory  
12 information summary issued to inform industry of the results of  
13 staff review of the responses to the bulletin.

14 This will be discussed in more detail later in my  
15 presentation.

16 Slide nine, please.

17 Bulletin 2002-02 was issued to further expand on reactor  
18 pressure vessel upper head penetration inspection requirements.  
19 It introduced the concept of effective degradation years to  
20 characterize susceptibility to primary water stress corrosion  
21 cracking. It was effectively completed upon issuance of Order  
22 EA-03-009.

23 Just last week, a revision to this order was issued. I  
24 will be discuss this in more detail, as well, later on.

25 Slide 10, please.

26 Bulletin 2003-02 was issued in response to the finding

1 of reactor coolant pressure boundary leakage from penetrations to  
2 the lower vessel head at a South Texas plant. Pressurizer heater  
3 sleeve cracking and Alloy 600 heater sleeves has resulted in the  
4 staff considering a generic communication to address this concern.

5 Both of these activities are ongoing and will be discussed  
6 in more detail later in my presentation.

7 Slide eleven, please.

8 Following the discovery of significant degradation of  
9 the reactor head at Davis-Besse due to boric acid corrosion,  
10 Bulletin 2002-01 was issued to obtain information needed to  
11 determine the adequacy of boric acid corrosion control programs at  
12 pressurized water reactors.

13 Based on the review of Bulletin 2002-01, responses as  
14 supplemented by additional correspondence in some cases and the  
15 findings from several staff audits, it was concluded that in  
16 general, licensees are implementing adequate boric acid corrosion  
17 control programs.

18 As part of the review of the responses to Bulletin  
19 2002-01, the staff conducted audits at three licensee facilities  
20 for eleven plants. The staff reviewed licensee implementing  
21 procedures for Generic Letter 88.05 programs and for the ASME Code  
22 Section 11 requirements for visual inspection for leaks during  
23 system pressure tests.

24 The staff held discussions with plant personnel who  
25 performed the boric acid walk downs and the ASME code visual  
26 inspection for leaks during system pressure test walk downs.

1           The staff also held discussions with plant personnel on  
2 the procedures they used to quantify unidentified reactor coolant  
3 system leakage and on actions taken in response to increases in  
4 unidentified leakage.

5           The staff discussed various types of boric acid leaks  
6 that had occurred in recent years. How they were discovered and  
7 what corrective actions were taken to fix those leaks.

8           Based on the reviews performed and discussions with  
9 plant personnel, the staff who conducted these audits concluded  
10 that the boric acid corrosion control programs were consistent  
11 with the guidelines in Generic Letter 88.05. And that the  
12 programs for visual inspection for leaks during system pressure  
13 tests were consistent with ASME Code Section 11 requirements.

14           These reviews and audits were programmatic in nature.  
15 However, the staff has revised the NRC in-service inspection core  
16 procedure to add inspection requirements for the implementation of  
17 boric acid corrosion control walk downs.

18           The revised procedure is currently under review by the  
19 regions. And based on comments received from the regions, the  
20 procedure will be finalized.

21           As part of the review of Bulletin 2002-01 and their  
22 audits, the staff identified certain weaknesses in these programs  
23 relative to recent operating experiences. These weaknesses were  
24 identified in RIS 2003-13.

25           One of the weaknesses identified was the performance of  
26 walk downs without removal of insulation. Given the low level of

1 leakage that could occur from a potential through-wall crack,  
2 inspections without removing the insulation would likely not  
3 enable prompt identification of such leakage.

4         In a letter dated August 19, 2002, from the NRC to  
5 industry, the staff requested that Section 11 re-evaluate their  
6 inspection and corrective action requirements for all systems that  
7 are potentially susceptible to stress corrosion cracking and boric  
8 acid corrosion.

9         ASME agreed to form a task group on boric acid corrosion  
10 to clarify code requirements, current Generic Letter 88.05  
11 programs, and to suggest any revisions to the code to address the  
12 August letter.

13         The task group meets on a quarterly basis and has  
14 focused its efforts to date on insulation removal requirements,  
15 and an adequacy of acceptance criteria and corrective actions.

16         With respect to insulation removal requirements, the  
17 task group has developed new code language that will require  
18 direct. That is, bare metal visual inspection of all dissimilar  
19 metal wells. The frequency of such inspections is under  
20 discussion.

21         Performing direct visual examinations would assist in  
22 the early identification of through-wall leakage and borated  
23 water systems which can also assist in mitigating any subsequent  
24 boric acid corrosion of ferric materials exposed to such  
25 through-wall leakage.

26         With respect to acceptance criteria and corrective

1 actions, the task group has suggested code language changes that  
2 strengthen the code requirements. For example, once leakage has  
3 been identified, the source of the leakage must be identified.  
4 This reinforces a need to determine if the source was due to  
5 through-wall cracking or through a mechanical connection.

6 Also the degradation due to corrosion must be fully  
7 characterized. This reinforces a need to clean off the boric acid  
8 deposits to fully access the conditions.

9 Slide 12, please.

10 Bulletin 2002-02 provided a description of a  
11 comprehensive inspection program that addressed the combination of  
12 visual and nonvisual examinations on a graded approach and was the  
13 precursor to Order EA-03-009.

14 This order was issued about one year ago and provided  
15 specific inspection requirements for all PWR plants. It required  
16 that plants evaluate their susceptibility to primary water stress  
17 corrosion cracking using a formula for effective degradation years.

18 The order then provided specific inspection requirements  
19 based upon the effect of degradation year level of the plant.

20 The order also required that all licensees perform  
21 visual inspections to identify boric acid leaks from components  
22 above the reactor pressure vessel head with follow-up actions  
23 including inspection of potentially affected reactor pressure vessel head  
24 areas and vessel head penetration nozzles should any leaks be  
25 identified.

26 All PWR's have verified the integrity of the reactor

1 vessel heads through over 100 separate nondestructive  
2 examinations. All PWR's have performed bare metal visual  
3 examinations of their reactor vessel head with one NRC  
4 approved exception.

5       The inspection findings to date support the  
6 susceptibility category inspection approach. As of January of this year, these  
7 detailed inspections have found 344 cracks in vessel head  
8 penetrations in 13 high susceptibility plants and one moderate  
9 susceptibility plant.

10       Of these cracks, 13 were potentially structurally safety  
11 significant as they were circumferential cracks in the nozzle  
12 material above the J-groove weld or high in the J-groove weld.  
13 All 13 of these cracks were in high susceptibility plants.

14       The industry is taking actions to address these flaws by  
15 repair or reactor vessel head replacements. Ten plants have  
16 replaced their reactor vessel heads, with another twenty-one plants  
17 having scheduled for reactive vessel head replacement. Only five  
18 of the remaining twenty-three high susceptibility plants have not  
19 officially announced plans for reactor vessel head replacement.

20       Slide 13, please.

21       The order provides a means for licensees to request  
22 alternatives from its requirements upon demonstration of good  
23 cause. As of January of this year, 24 plants had made alternative  
24 requests for inspection and the staff has approved some form of  
25 most of the requests.

26       A revision to the order resulted from a review of the



1 alternative inspections granted and inspection data which I  
2 indicated modifications could be made that would eliminate the  
3 need for some alternative inspection requests.

4 A temporary instruction accompanied the original order  
5 which provided regional inspectors clear communication of the NRC  
6 order inspection requirements. The temporary instruction provides  
7 regional inspectors with the necessary information to verify the  
8 effectiveness of licensee inspections of reactor vessel heads and  
9 their associated penetration nozzles.

10 Regional inspectors are required to perform the  
11 temporary instruction at least twice for all 69 PWR's.

12 Contact information for senior materials engineers at  
13 headquarters is included with the temporary instruction which has  
14 allowed rapid communications on developing licensee inspection  
15 issues. The effectiveness of the temporary instruction has led to  
16 the inclusion of its requirements in the forthcoming update of the  
17 in-service inspection inspection procedure.

18 The temporary instruction will be revised to reflect  
19 changes in the revised order to ensure continued consistent and  
20 clear inspection guidance is available to the regional inspectors.

21 Slide 14, please.

22 In the spring of 2003, the licensee for the South Texas  
23 Unit One identified apparent boron deposits on the lower reactor  
24 vessel head near two bottom mounted instrument penetrations.  
25 Nondestructive and metallurgical examinations determined there  
26 were through-wall cracks in the housing that resulted from primary

1 water stress corrosion cracking.

2           The NRC issued Bulletin 2003-02 to obtain information  
3 from all PWR's regarding inspection activities and inspection  
4 plans for the reactor pressure vessel lower head. A temporary  
5 instruction was issued to ensure clear communication of inspection  
6 requirements for regional inspectors.

7           After two outage seasons worth of inspections and 23  
8 licensee inspections with regional inspector verification through  
9 the temporary instruction, no other plants have identified leakage  
10 from penetrations in the lower reactor vessel head.

11           Slide 15, please.

12           Cracking of pressurizer heater sleeves attributed to  
13 primary water stress corrosion cracking in Combustion Engineering  
14 designed pressurizers has been occurring for sometime. Analysis and  
15 very limited inspection results prior to October of last year  
16 supported industry's conclusion that the cracking of these  
17 pressurizer heater sleeves would be axially oriented and  
18 therefore of minimal safety concern.

19           This was reinforced this past outage season when two  
20 plants with leaking sleeves removed the heaters from the sleeves  
21 and performed nondestructive examinations and determined the  
22 cracks were in the sleeves and axial in nature.

23           However, also during the past outage season, Palo Verde  
24 Unit 2 performed extensive nondestructive examinations of 36  
25 heater sleeves during a campaign to replace all of the units  
26 original Alloy 600 penetrations. This inspection determined that

1 through-wall circumferential cracking existed in five Alloy 600  
2 heater sleeves above the elevation of the J-groove weld. That is  
3 in a nonpressure boundary portion of the sleeve.

4       These inspection findings were unexpected and resulted  
5 in the staff considering a generic communication on this issue.  
6 Any generic communication would address pressurizer  
7 penetration inspection activities for dissimilar metal welds in  
8 the pressurizer environment.

9       The Westinghouse Owners Group has been pro-active in  
10 addressing inspection requirements for pressurizer heater sleeves  
11 at Combustion Engineering plants. They have proposed an  
12 inspection regime for the heater sleeves to the Combustion  
13 Engineering fleet and asked that the effective licensees commit to  
14 it.

15       Slide 16, please.

16       Results of Research activity related to stress corrosion  
17 have been and are being incorporated into regulatory actions,  
18 including Bulletins, Orders, and rulemaking. The long-term focus will  
19 integrate and assess degradation mechanisms, nondestructive  
20 examination and inspection techniques, and flaw growth evaluation  
21 and potential mitigation measures to allow evaluations of aging  
22 management strategies such as types and frequencies of inspection  
23 programs.

24       To this end, the current Research programs include  
25 determination of cracked growth rate in nickel-based alloys,  
26 including samples taken from the Davis-Besse head and replacement

1 alloys, for example, Alloy 690.

2           Research related to nondestructive examination includes  
3 examination of welds with advanced techniques and verification of  
4 sizing and detection probabilities.

5           In a recently initiated cooperative program, discarded  
6 North Anna 2 nozzles, weld cracks, and leak paths are being  
7 investigated. The stress and fracture mechanics analysis are also  
8 being conducted to understand the crack driving forces, failure  
9 modes, leakage and structural integrity evaluations.

10           These components of research are being integrated into a  
11 probabilistic framework.

12           Research also initiated a new program on boric acid  
13 corrosion to evaluate wastage rates for a range of solution  
14 compositions, temperatures and pressure boundary materials.

15           Slide 17, please.

16           Research programs include collaboration and coordination  
17 with the U.S. industry and foreign countries.

18           I mentioned the North Anna 2 program earlier in which NRC and  
19 the U.S. industry is sharing costs of acquisition, cleaning, and  
20 other programmatic aspects, sharing data from the use of various  
21 advanced techniques.

22           The NRC is forming an international group on  
23 nondestructive examination techniques for primary water stress  
24 corrosion cracking. The kick-off meeting was held in October of  
25 last year in connection with the vessel head penetration  
26 conference.

1 Results of the research in part provide a basis for  
2 review and evaluation of industry programs such as the plant's  
3 susceptibility models and proposed inspection programs.

4 Slide 18, please.

5 Work is continuing with the ASME code with NRC staff  
6 involvement to establish inspection requirements for the reactor  
7 vessel upper head penetrations that can be incorporated into the  
8 code and then endorsed through routine 50.55a rulemaking.

9 Industry has yet to provide a technically justified  
10 alternative to the inspection requirements of the order. At this  
11 point, this alternative remains a challenge with respect to  
12 completion.

13 Slide 19, please.

14 Because the approach discussed in the previous slide  
15 remains a challenge, the current staff plan is to incorporate the  
16 inspection requirements in the orders directly into 50.55a through  
17 rulemaking.

18 The process has started. And the current schedule would  
19 have a rulemaking plan to the Commission in June of this year  
20 with the final rule projected for two years after that.

21 Through the rulemaking process, all stakeholder input  
22 will be accessed as well as continuing order inspection results to  
23 effectively implement long-term inspection management of these  
24 issues.

25 The staff also has under consideration a rule that would  
26 address flaw management to the reactor coolant system as a whole.

1 This is currently in the conceptual stage and needs additional  
2 evaluations.

3 This completes my presentation.

4 I will now turn the presentation over to Bill Beckner,  
5 who will talk about operating experience.

6 MR. BECKNER: Thank you, Bill.

7 Good afternoon. My name is Bill Beckner. I'm the Chief  
8 of the Reactor Operations Branch within the NRR Office our Division  
9 of Inspection Program Management. And as Bill said, I will be  
10 talking about some of the operational experience activities.

11 If we can start with slide 20. Thank you.

12 An interagency task force was chartered in April of 2003  
13 with the objective of evaluating the agency's operating experience  
14 program and recommending specific program improvements. The task  
15 force was led by a division level manager from the Office of  
16 Research, Charlie Ader, who's here today, and it was guided by a  
17 steering committee of senior executive managers.

18 The task force completed its recommendations in November of this year,  
19 provided their report, which I believe is on the public record.  
20 And the steering committee endorsed 24 of those discreet  
21 recommendations in January of this year.

22 Now, I won't be talking about those 24 recommendations.  
23 But in a moment I will be talking about some of the major findings  
24 or recommendations that came out.

25 We go to our next slide, 21.

26 The staff is now in the process of developing an

1 implementation plan which we are targeting to complete in April of  
2 this year.

3       The recommendations that came out of the task force,  
4 while they are discreet, are not the type that can be immediately  
5 implemented. They are basically direction setting. The staff now  
6 needs to determine implementation details, specifically, the cost  
7 of implementation and also develop policy in the form of new  
8 management directives to implement it.

9       Our goal is to put at least a framework in place for  
10 these recommendations by the end of the calendar year. However,  
11 we don't expect to have the job completed by the end of the year.  
12 It will probably be a dynamic effort with continuous improvements.

13       We want to go the slide 22.

14       Talking briefly about some of the major findings and  
15 recommendations.

16       It's important to note -- and one of the key findings of  
17 the task force, is that they found that the agency's current  
18 reactor operating experience activities contain requisite  
19 functions in operating experience program. These functions  
20 include both short-term and long-term efforts directed at  
21 identifying safety issues, assessing their significance, and  
22 taking actions to address these issues.

23       However, a second key finding of this task force was  
24 that the agency lacked a clear vision on how all of the agency's  
25 operating experience program activities should function together  
26 to work in concert with the licensing inspection and research

1 activities.

2 Next slide.

3 As a result of that, really the key or the primary  
4 recommendation that came out of this report and many of the 24  
5 discreet recommendations are some way related, the principal  
6 recommendation to the task force is that there should be a  
7 designated senior manager assigned as a single point of contact to  
8 coordinate activities across offices. And that what the task  
9 force called a clearinghouse should be established within a single  
10 organization to collect, screen, prioritize, communicate, and  
11 manage operating experience.

12 That's basically the challenge that we have over the  
13 next few months to determine a plan for.

14 But I want to point out that in the interim we have not  
15 been standing still. In the last two years, we have accomplished  
16 quite a bit. Improvements have been going on even before the task  
17 force and before the Davis-Besse Lessons Learned Task Force  
18 Report.

19 The current organization that we have and the functional  
20 elements of the agency's operating experience program go back and  
21 have their roots in SECY-98-228, which transferred operation  
22 experience functions from the former office of AEOD to Research  
23 and NRR. As far back as the fall of 2002, operating level  
24 managers from both the Office of Research and NRR acknowledged  
25 that we were not appropriately leveraging our resources and began  
26 a series of interactions where we gained a common understanding of



1 each others' functions and responsibilities.

2       Indeed, these interactions that we started back in late  
3 2002 laid the foundation for the operating experience task action  
4 plan as well as the charter for the operating experience task  
5 force.

6       I am going to spend the bulk of my time talking about  
7 some of the efforts that we have made already.

8       To date, both organizations, both Research and NRR, have  
9 made substantial improvements in the access to and communication  
10 of operating experience information, mostly through leveraging  
11 information in web-based technology.

12       Both Research and NRR have new operating experience web  
13 sites, which provide easy searchable access to a host of operating  
14 experience information, including events, morning reports, license  
15 event reports, generic communications, important presentations the  
16 staff has given, initiating event frequencies, common mode  
17 failures, systems studies, accident sequence precursor database,  
18 and on and on. And even the INPO product line now is currently --  
19 of course, it's on our internal web site because it's proprietary. We  
20 have that better access now for the staff internally.

21       In addition, the Research sponsored license event report  
22 search system is now accessible from their web site, their home  
23 page. I'm told that a network announcement is being prepared and  
24 will be issued shortly to widely disseminate that fact to the NRC  
25 staff.

26       Other activities that we have done to try to improve

1 communication, NRR has replatformed its old event database into a  
2 more useful and powerful tool that will be rolled out for general  
3 staff usage very shortly.

4 In addition, we have provided presentations to both NRR  
5 and the regional staff on easier and more powerful ways to make  
6 use of ADAMS to look for operating experience information.

7 Basically, we have capitalized on the improved search  
8 capabilities in the web-based version of ADAMS.

9 Organizationally, the NRR operation experience section,  
10 which is headed by Terry Reis in my group, has been moved from  
11 the Division of Regulatory Improvement Programs to the Division of  
12 Inspection Program Management to more closely coordinate with the  
13 inspection program. We continue to make incremental improvements.

14 Some of the improvements we have had are now operating  
15 experience is routinely included as part of the inspector  
16 newsletter and we have come up with a matrix cross referencing  
17 inspection procedures with generic communications. We expect  
18 these types of things will continue.

19 And while I'm on the regional effort, I would like to  
20 turn to Art Howell and see if he wants to provide any other  
21 perspective from the region.

22 MR. HOWELL: Good afternoon, Chairman, Commissioners.

23 Again my name is Art Howell. I'm the Director of the  
24 Division of Reactor Projects in Region IV. I just wanted to offer  
25 a few comments, if I may, on some of the improvements in the  
26 operating experience program area that we see from a regional

1 perspective.

2           From an end user standpoint, for existing operating  
3 experience, the challenge has always been to obtain ready access  
4 and search that the vast amount of information and call that out  
5 and apply it on a real-time basis to follow up an inspection  
6 follow-up.

7           As a result of some of these improvements, we are seeing  
8 dividends as we speak. I would like to highlight a couple of  
9 those by way of example.

10           In one case, one of the improvements that we began  
11 using in the region is the new electronic searchable plant  
12 issues matrix. This is where all the inspection findings are  
13 dumped into the matrix and they can be searched electronically.

14           A lot of good information from the inspection program.  
15 In the past, some of the more significant events generated generic  
16 communication documents such as information notices.

17           Some of the other more visible findings might find their  
18 way out to the staffs in the other regions from task interface  
19 agreements. But by and large, most of the inspection findings  
20 were not visible to folks in other regions if they are originated  
21 in one region.

22           With this new tool we are now finding that even issues  
23 that don't rise to the level of generic communications, we are  
24 getting that information and applying that to the inspection  
25 program.

26           I will give you an example. One plant in Region IV

1 recently experienced two separate fires. Both involved different  
2 equipment and different root causes. As a result of using this  
3 tool, we found that there was, in one case, a similar fire in a  
4 Region III plant. And in the second case, a similar fire at a  
5 plant in Region I.

6         We reaped two benefits from that. One was that we got  
7 the benefit of the inspection that actually occurred. That helped  
8 guide us and steer us in our inspection so that we were less  
9 likely to overlook something.

10         And then the second benefit was that it resulted in a  
11 consistent outcome of the findings, in that we applied the  
12 significant determination process in the same way.

13         So that's something that we are seeing already. Our  
14 folks in the region are using that tool.

15         Another example, there was a catastrophic  
16 failure of an emergency diesel generator at the South Texas  
17 project. It turns out that that same emergency diesel generator  
18 failed 14 years ago through a connecting rod.

19         And to be sure, there were people in the region that had  
20 a recollection of that 1989 failure. But we couldn't remember the  
21 year, we couldn't remember the unit, couldn't necessarily remember  
22 the cause.

23         But because of these, two of these improvements that  
24 were mentioned just recently by Mr. Beckner, we did find the  
25 docketed information on a real-time basis. Not only licensee  
26 event reports but we got a call from Mr. Reis' staff in NRR,

1 who uncovered some information. And that was provided to the  
2 branch.

3 And that information was used to develop the special  
4 inspection plan that helped guide the prompt follow-up on that  
5 event.

6 So that is just two examples. There are others. But I  
7 just wanted to share with you that we are seeing the benefits from  
8 these improvements in the field.

9 MR. BECKNER: Thank you, Art. It's good when one of  
10 your end users validates your conclusions.

11 One other thing I want to briefly touch on as far as  
12 information technology. We have developed an e-mail subscription  
13 service so that when specific operation experience becomes  
14 available, we can quickly get out that information out to the  
15 right people who have already previously identified that they are  
16 interested in a specific area.

17 That's a new effort that I think we will be expanding a  
18 lot more in the future.

19 In addition, some of our procedures and processes have  
20 recently been updated. These are NRR operating instructions. We  
21 have LIC-503, generic communications effecting nuclear reactor  
22 licensee. That was updated last summer. It provides a sound,  
23 well-tested framework for executing the agency's generic  
24 communications programs.

25 We have also updated LIC-401, NRR operating experience  
26 program in an interim manner until the task force recommendations

1 can be determined.

2           Basically, I think you see that the staff understands  
3 that access to and communication of operating experience is only  
4 part of the solution, however. The more difficult challenge lies  
5 in proper incorporation of these lessons learned into our  
6 programs.

7           I want to go to slide 25.

8           A separate group has also been addressing a medium  
9 priority recommendation that has come out of the Davis-Besse  
10 Lessons Learned Task Force. To conduct follow-on verification of  
11 licensee actions in response to previous generic communications.

12           This group has performed an initial screening of  
13 previous generic communications and narrowed the scope of review  
14 down to five focus areas.

15           These areas are, ECCS/sump, electrical power systems,  
16 service water fouling, pipe thinning and degradation, and fire  
17 protection. These are the areas that we intend to go back and  
18 verify how the generic communication process resolved these or did not,  
19 as the case might be, these issues. We are currently working with  
20 NRR for the exact process and resources to do it.

21           Our expectation will go out for some type of a sampling  
22 program through the inspection program, either through a temporary  
23 instruction or rolling some of these activities into a baseline  
24 inspection.

25           My last slide, I think I would like to summarize  
26 overall.

1 I think that while significant advances, I hope you  
2 would agree, have been made, implementation of the task force  
3 recommendations will be challenging, particularly given the  
4 resources and the fact that we are working across organizations.

5 Just to give you a brief idea of what we are doing and  
6 how much. The agency is currently extending about 20 FTE per year  
7 between the two offices, Research and NRR, roughly equally split.

8 Given the resource and organizational implications of  
9 implementing the task force recommendations, it is likely that we  
10 will be encountering policy issues. And as a result, it is  
11 highly likely the staff may be coming back to the Commission for  
12 policy guidance.

13 That concludes my presentation. Unless there's any  
14 questions you wanted answer immediately, we can move on to the  
15 inspection program with Stu Richards.

16 MR. RICHARDS: Thank you, Bill and good afternoon.

17 I am Stu Richards, Chief of the Inspection Program  
18 Branch in the NRR Division of Inspection Program Management. I  
19 will be discussing activities relating to inspection and program  
20 management.

21 We should be on slide 27.

22 The Davis-Besse Lessons Learned Task Force recommended  
23 several changes to the NRC's reactor oversight process. Included  
24 among the Task Force recommendations were the need for more  
25 focused inspections of long-standing equipment issues, enhanced  
26 inspector training, and better oversight of plants and extended

1 outages.

2 In response to these recommendations, several  
3 significant changes have been made to the inspection and  
4 assessment portions to the ROP.

5 Slide 28, please.

6 In order to provide for better follow-up of  
7 long-standing equipment issues, inspection requirements were added  
8 to screen all licensee corrective action entries and to perform a  
9 semi-annual trend review of corrective action issues.

10 The trend review to be completed by the resident  
11 inspectors is designed to focus on repetitive equipment issues that  
12 by themselves may not be that risk significant but that might be  
13 indicative of a more risk significant issue or programmatic  
14 concern.

15 This trend review should also provide for better  
16 communication of such equipment issues both within the NRC and  
17 externally to NRC stakeholders. The first trend review is  
18 scheduled to be completed at all sites in July of this year.

19 Next slide, please.

20 We have made enhancement to our inspection chapter 0350  
21 process which governs the oversight of plants and outages. These  
22 enhancements provide for better integration of the 0350 process  
23 with the reactor oversight process, including improved structure  
24 to the inspection approach used at such sites.

25 We have also revised our budget models to ensure that  
26 adequate resources are available to compensate for the resource



1 demands typically experienced when a plant enters the 0350  
2 process.

3 Slide 30, please.

4 With regard to inspector training, we have developed and  
5 implemented a new read and sign inspector training process. Using  
6 a web-based interface, we now have the ability to effectively  
7 provide timely training to NRC inspectors on important issues.

8 Since implementing this program last fall, we have  
9 completed three read and sign modules, including one module on  
10 boric acid corrosion and stress corrosion cracking and one module  
11 on the importance of maintaining a questioning attitude.

12 For this last training model, excerpts from the Columbia  
13 Space Shuttle Accident Investigation were used to effectively  
14 illustrate the importance of maintaining a questioning attitude.

15 This training was followed up with a presentation at all  
16 four regional inspector counterpart meetings.

17 Slide 31, please.

18 While not associated with the reactor oversight process,  
19 NRR has also developed and issued guidance for requiring more  
20 complete documentation of important staff decisions, particularly those  
21 decisions that are made based upon risk considerations. This  
22 action is primarily directed at actions made as part of the  
23 licensing process, a follow-up effectiveness review of this  
24 training is scheduled to be completed later this year.

25 Slide 32, please.

26 While we have completed these important actions,

1 challenges remain, particularly with regard to the timely  
2 incorporation of operating experience into the inspection program.  
3 Our goal is to develop an effective process that will provide  
4 inspectors with important operating experience information that  
5 can be used both for inspection sample selection and for accessing  
6 inspection results.

7         This concludes my presentation and I will now turn it  
8 over to Nilesh Chokshi from the Office of Research.

9         MR. CHOKSHI: Thank you, Stewart.

10        Good afternoon, everyone.

11        My name is Nilesh Chokshi. I am Chief of the Materials  
12 Engineering Branch in the RES Division of Engineering Technology.  
13 I will be covering the activities associated with the assessment  
14 of barrier integrity requirements, which is the fourth category of  
15 recommendation.

16        From a practical standpoint, the reactor coolant  
17 pressure boundary cannot be made completely tight since some  
18 leakage is expected through pumps, valves, seals and other locations.

19        However, improved requirements can lead to more correct identification  
20 measurement and collection of leakage from known sources to  
21 minimize interference with leakage detection from unknown sources.

22        In addition, improved leakage requirements can also  
23 permit more effective characterizations prior to the development  
24 of significant pressure boundary degradation. With this type of  
25 considerations, the Lessons Learned Task Force give us six high  
26 priority recommendations for this category.

1           To summarize the recommendations, the recommendations  
2 call for improvements to the reactor coolant system leakage  
3 requirements and other improvements that ensures that plants do  
4 not operate with pressure boundary leakage and that plants have  
5 the ability to discriminate between unidentified reactor coolant  
6 leakage and pressure boundary leakage.

7           Let's go to the next slide, slide number 34.

8           In order to implement this recommendation, we have taken  
9 several activities. The first of these activities was the  
10 initiation of the barrier integrity research program at Argonne to  
11 reevaluate the technical basis for reactor leakage detection  
12 requirements.

13           And a NUREG report describing this work is on schedule  
14 for completion by July 2004.

15           I will come back to some details of this particular  
16 program a little later.

17           Also as a part of this effort, the staff also reviewed  
18 the basis for the current leakage requirements in the regulatory  
19 guide 145. This is the guide which deals with the reactor  
20 coolant pressure boundary leakage detection systems.

21           The technical specification requirements and the Reg Guide  
22 requirements were essentially developed in the 1970's and they  
23 were primarily based on the capability of the leakage detection  
24 systems at that time in the plants and also some supporting  
25 evidence from pipe rupture experiments carried out to better  
26 understand the correlations between crack sizes and leak rates.

1           Secondly, the staff has also reviewed the technical  
2 specifications for all PWR's to identify where there might be some  
3 differences from the standard Tech Specs and has identified nine  
4 units with the pressure boundary leakage requirements that defer  
5 from the standard tech specs.

6           Just to understand the differences. The standard  
7 Tech Specs require that if the pressure boundary leakage exists, that  
8 you need to be replaced in hot standby within 6 hours and in cold  
9 standby within 36 hours.

10          Though most of the differences that we have found so far  
11 are minor and are basically associated with the time requirements,  
12 to be in the hot standby or cold shut down, one plant does  
13 not differentiate between identified leakage and pressure boundary  
14 leakage.

15          So this forms the bases, additional information bases  
16 for grouping of the improvements.

17          Next slide, please.

18          The third activity underway is review of current barrier  
19 integrated performance indicators who identify improvements that  
20 can be made under existing requirements. A potential improvement  
21 may be to monitor all reactor coolant system leakage measurements  
22 and compare them to the allowable limits.

23          This work is underway. It's on schedule. And we are on  
24 schedule to identify this improvement by June 2004.

25          Next viewgraph, please.

26          Now at this time I'm going to take a little bit more

1 time to describe the barrier integrity research program at Argonne  
2 because it relates to the development of the technical basis for  
3 the leakage detection systems and requirements.

4       The program began in September 2003 and is principally  
5 made up of three tasks. The first task is the integrated  
6 assessment of the leakage associated with the degradation of  
7 various reactor coolant pressure boundary components. It's  
8 looking specifically at degradations and the leakage.

9       This is being done by looking at the experimental data which is  
10 available and also looking at the models and their availability to  
11 predict these leak rates.

12       The improvements, there have been specific improvements  
13 in the ability to model and predict leakage. There has been some  
14 implementation of the computer code in this area. And these  
15 analysis are on schedule for completion by March of this year.

16       The second task is the review of leakage operating  
17 experience by developing a database of leakage events. The  
18 information in this database includes leak location, leakage rate,  
19 operation of reactor, operational mode of reactor, when leak was  
20 detected, causes of leakage, and actions taken.

21       This database will allow us to benchmark and relate the results  
22 from the experimental analogical predictions and allow us to look  
23 at the reasons of task one. Again, this database is on schedule  
24 for completion by April of this year.

25       Now, the third task is the evaluation of the accuracy,  
26 sensitivity, reliability and response time of various leakage

1 detection systems. The state of the art techniques we are looking  
2 at include radioactivity monitoring systems, humidity sensors,  
3 acoustic monitors and some other systems.

4       These systems have the potential for predicting leak rate  
5 less than 1 GPM. And they have been installed in some plants in  
6 the U.S. and abroad to detect leakage in particular areas such as  
7 the reactor pressure vessel head. So we have some field  
8 experience with some of these systems.

9       Now, in addition to the enhanced resolution which the  
10 system provides, we are also evaluating the capability of the  
11 systems -- the source of leakage.

12       In particular, the radioactivity and humidity monitoring  
13 systems are localized leakage detection systems. They are used to  
14 monitor, again, the specific areas such as the reactor pressure  
15 vessel head.

16       The capabilities of this system will be compared to the  
17 recent -- from the earlier two tasks radioactivity applicability in the  
18 real life situations.

19       Now, in addition to the leakage detection system, we are  
20 also looking at the systems which are capable of systems like  
21 acoustic commission which may be used to monitor and detect crack  
22 growth before leakage occurs. That's also a component of this  
23 activity.

24       Now, as I mentioned earlier, a final report integrating the results  
25 all the previous tasks is on schedule for completion by July. This report  
26 will be a comprehensive technical basis to look at the

1 improvements in the coolant system leakage requirements.

2       So this will be, this program will be ending around

3 July.

4       Next viewgraph, please.

5       We are also reviewing the plant alarm response procedure  
6 for leakage monitoring system and accessing the adequacy for  
7 identifying pressure boundary leakage. Regulatory Guide 145  
8 recommends that indicators and alarms for this system be located  
9 in the main control room and that the procedures be given for  
10 promoting this indication to leak rates.

11       We are in the process of revising inspection guidance to  
12 verify that licensee's have programs and processes in place to  
13 meet existing requirements related to such things as a degraded or  
14 inoperable leakage detection instruments and the use of inventory  
15 balance check, that is unidentified leakage. Again, this is on  
16 schedule for coming up for these improvements by March '04.

17       Now, the results of all of the above activities, including  
18 the barrier integrity, will be integrated to develop a set of  
19 final recommendations for improving inspection procedures and  
20 RCS leakage requirements.

21       The recommendations for inspection guidance will look at  
22 including actual levels that will increase the NRC level of  
23 inspection with licensee in response to increasing levels of  
24 unidentified leakage.

25       Now, the goal of the improved RCS unidentified and pressure  
26 boundary leakage requirement will be to ensure that plants do not

1 operate at power with pressurized boundary leakage consistent with  
2 the recommendations.

3       Next viewgraph, please.

4       Now, this is basically the six high priority  
5 recommendations. There is one recommendation in the barrier  
6 integrity category which was not given a high priority. And this  
7 recommendation calls for an evaluation of adequacy of risk  
8 analysis methods associated with passive component failure and  
9 degradation and the integration of the results of such analysis  
10 into the regulatory decision making process.

11       A primary scoping review has been performed by the  
12 staff. This is a particularly challenging task because of the  
13 large number of combinations of passive failure mechanisms and  
14 potential locations.

15       The staff is pursuing a multi-disciplinary review to  
16 prioritize combinations of failure mechanisms locations and system  
17 responses which should be considered for further study. And this  
18 work is being reviewed as a part of the PBPM process for 2005 and  
19 2006.

20       Now, having said that, you know, while the systematic  
21 review of passive failure is being pursued, there are currently  
22 ongoing efforts which help to deal with the passive system  
23 failures.

24       And a perfect example, one of these activities is the  
25 reevaluation of the pressurized thermal shock rule which does require  
26 understanding of the failure mechanisms for the passive component.



1 Another example is the effort to redefine large break  
2 LOCA and estimate LOCA frequencies which is, again, primary contributors of the  
3 passive systems. Seismic risk analyses -- there are many  
4 other things which the passive systems do. So we are looking at  
5 the systematic enhancement of the matter, how to incorporate this.  
6 We have some experience also with looking at these passive system  
7 failures.

8 So finally -- last slide, please.

9 And I think as noted before, any changes to the  
10 regulatory requirements, including the technical specification  
11 changes which will result from the technical basis and the  
12 recommendation, they all look, under these activities under this  
13 action plan, will have to be implemented using the appropriate  
14 regulatory process. And I think that some of the TBD milestones,  
15 because of this process with staff involved.

16 This concludes my portion of the presentation. I will  
17 turn the presentation back over to Mr. Dyer for the oral summary.

18

19 MR. DYER: Thank you, Nilesh.

20 Slide 40, please.

21 In summary, we have made significant progress in  
22 implementing the recommendations in the four overarching areas  
23 established by the senior management review team. But as you have  
24 heard, we still have a very challenging period ahead of us to  
25 complete our implementation plans.

26 The details of all the implementation plans are still

1 evolving. And we are continuing to review those plans and  
2 revising our schedules to make sure that we have accomplished the  
3 intended objectives and not just accomplished an output that  
4 doesn't lead us to the right place.

5         Some of the major challenges -- in summarizing, some of  
6 the major successes and challenges that you have just heard,  
7 certainly in the stress corrosion cracking action plan area, we  
8 are ensuring the safety of the plants through the use of the NRC  
9 bulletin, generic letter and order process.

10         It's not the most efficient process but it is effective.

11 We do believe we have maintained the safety at these plants.

12         The industry response in this area has been continually  
13 improving as noted with the establishment of the materials  
14 executive oversight group and the materials technical advisory  
15 group and their interaction with the staff.

16         So in the future, our future challenges in this area are  
17 to continuing to work to become more pro-active with the industry,  
18 to become more pro-active in responding to the challenges in this  
19 area and to get our regulatory process into a more stable form  
20 where traditionally, there's codes, standards and references that  
21 we can endorse and preferably through rulemaking as we go.

22         But as it stands right now, we are still dealing with it  
23 in the bulletin and the use of bulletins, orders and generic  
24 correspondence. But we are detailing the processes.

25         In the operating experience area, as you have heard, we  
26 have improved communications considerably, both within the

1 headquarter's organization, as well as with the regions and with  
2 the industry. Some of the advancements in the databases and the  
3 technological efforts have really improved the information that's  
4 actually provided to the inspectors, as Mr. Howell detailed.

5       As a result, the operating experience task force  
6 report -- we are really taking a look at a top down revision of  
7 the way that we do business and the way that operating experience  
8 influences our day-to-day activities. We are going to continue  
9 putting together an implementation plan for that.

10       And as Mr. Beckner said, if we identify any policy  
11 issues, we will be coming back to the Commission for any further  
12 guidance in that area.

13       In the inspection assessment and project management  
14 action plans, again, you heard that there have been changes to the  
15 inspection programs to shore up the accountability and follow up  
16 on a lot of the generic correspondence that we have issued. And  
17 also to improve the implementation of operating experience, again,  
18 at the inspectors, where it's best needed.

19       In the barrier integrity, there's been a lot of analysis  
20 and evaluations initiated as Nilesh went through with you. Our  
21 challenge there is to translate that into actual information that  
22 the industry and the agency can use through its inspection and  
23 licensing and performance indicator programs to track the  
24 performance and again, be in a pro-active posture to deal with  
25 emerging issues.

26       So in doing forward, our overall goal is to make the

1 recommendations and the resulting program changes in that, you  
2 know, integrate them into the fiber of our operations. And that's  
3 our goal.

4 As Dr. Travers said, Davis-Besse was a significant event  
5 for the -- not by public health and safety, but certainly from our  
6 regulatory practices, we have learned a lot of lessons as a result  
7 of that. I think it's very, very important that we implement  
8 those programs to make sure that we have learned our lessons and  
9 have actually implemented them.

10 And that concludes my presentation.

11 DR. TRAVERS: Chairman, that concludes the staff's  
12 presentation this afternoon.

13 CHAIRMAN DIAZ: Thank you very much, Dr. Travers,  
14 and all of the members of the staff for a very comprehensive  
15 presentation. I know you guys have been working very hard at it.  
16 We appreciate hearing a summary of what you have done.

17 We have had the opportunity to look at your reports and  
18 we are pleased that progress is made. Of course, we always look  
19 forward to closure.

20 With that, I do believe that Commissioner McGaffigan  
21 goes first today.

22 COMMISSIONER MCGAFFIGAN: Thank you, Mr. Chairman.

23 I will join the Chairman in complimenting you on a very  
24 broad scope of work that's underway and significant process in  
25 many of the areas. I think the operating experience area, some of  
26 the things that we are doing there are particularly significant.

1 I am going to start with the question that really comes  
2 from a letter or a memo that the Inspector General sent to the  
3 Chairman on the 2nd of February.

4 And the essence of that was -- while I'm interested in  
5 your answer -- that they don't believe that we have thus far  
6 adequately dealt or addressed the underlying more generic  
7 communications failures that they have found both upward  
8 communication flow within the agency and downward communication  
9 flow to the regions.

10 I think you partially addressed that in talking within  
11 the operating experience area. But I would be interested in a  
12 broader response to wherever you stand today in response to the  
13 IG's concern.

14 MR. COLLINS: Let me start at a higher level for that,  
15 Commissioner McGaffigan. Thank you for the question.

16 By way of background, of course, this relates to the OIG  
17 event inquiry that was issued in October 2003 having to do with  
18 the oversight of the Davis-Besse plant. It was prompted by a  
19 Congressional concern having to do with a handling of a corrective  
20 action request that was initiated during the outage at Davis-Besse  
21 in the 2000 time frame, April 2000.

22 This prompted a series of communications back and forth  
23 with OIG. As a result of that event inquiry, the first being the  
24 January 12th, 2004, response to Mr. Bell, which categorized the  
25 findings in the OIG inquiry and provided a matrix and a stack up  
26 of the matrix against those Davis-Besse Lessons Learned actions

1 that we believed addressed the findings themselves.

2           And finding, two, had to do with specifically  
3 ineffective communication amongst Region III managers. Although,  
4 clearly, communication was a cross-cutting issue across all of the  
5 findings. I believe there might have been five of those, if I  
6 recall correctly.

7           Communications is always difficult. As indicated, we  
8 were not effective in communicating our response to that concern  
9 to OIG. The first we heard about the concern was when Mr. Bell  
10 responded to that in February 2, 2004, with his concern having to  
11 do with improved communication between and among headquarters and  
12 regional staff. And that we should outline specific guidance to  
13 achieve the goal.

14           And then thirdly, in the communications area there has  
15 been media coverage in Inside NRC. We have been following those  
16 pieces of information and trying to understand the issue itself.

17           And I think Jim has had some direct communication with  
18 OIG.

19           We believe, as indicated by a brief summary of our  
20 findings, that we are dealing with moving technical information  
21 and technical programs to a higher level, including communicating  
22 those directly to the stakeholders and the end users of those  
23 processes. And you have heard some examples of those.

24           Where our challenge is -- and I believe the OIG,  
25 perhaps, is focused on this -- and we will find out through more  
26 discussion -- is the cross-cutting issue of thresholds of

1 information and when that information reaches a level that moves  
2 it to a different plane.

3 As Jim is fond of saying, communication is transmission,  
4 receipt, and a sensitivity of what to do with the information.

5 When we look at the OIG inquiry, it's full of  
6 communication. What it's lacking, in some regards, is the  
7 perception that there's a lack of sensitivity of what to do with  
8 the information based on an individual's perception of the issue  
9 being resolved, being addressed, or being appropriately  
10 dispositioned within the regulatory and the licensee process.

11 Some of these actions today address those. But clearly  
12 there were others, in a broader sense, that we can focus on to try  
13 to move our processes to an area where it's visible to people that  
14 we are focusing on communications as well as these technical  
15 areas.

16 So that was a --

17 COMMISSIONER MCGAFFIGAN: I think that personally that  
18 this communications area, particularly -- in both directions, but  
19 from bottom to the top and top to bottom, played a role there.

20 One of the points made in the OIG report back -- it's  
21 not a point it's a paragraph in the OIG report, I will just read  
22 it to you.

23 The DRP Director told OIG that he was aware of Generic  
24 Letter 88-05 and Generic Letter 97-01 bearing on boric acid control and  
25 the issues they addressed. However, he said he was unaware of any  
26 Region III inspections at Davis-Besse to track licensee's

1 compliance with these generic letters. His words

2 aren't quite right.

3       He noted that historically -- this is a sentence that  
4 bothered me. He noted that historically because few problems were  
5 identified at Davis-Besse, the plant received a good rating from  
6 NRC which resulted in the licensee receiving minimum inspection  
7 oversight.

8       That's what he said. I think that we had these  
9 indications at Davis-Besse of, you know, the filters getting  
10 clogged and the red picture that may or may not have been seen by  
11 a number of folks at the bottom of the organization, et cetera.

12       And that information didn't get acted on properly. We  
13 may have been diverted. God knows Region III had other battles to  
14 fight. But it strikes me that the communication issue is -- I  
15 don't always agree with the OIG. But in this particular case I  
16 think he's on to something that information -- bad news didn't  
17 flow upward within the organization very readily or bad news  
18 wasn't even recognized necessarily.

19       And then from the top of the organization down,  
20 expectations were not being conveyed with regard to how we were  
21 going to be following up on these boric acid degradation issues.

22       So I will look forward to whatever answer -- you are due  
23 to give the OIG an answer in the relatively short term in writing?

24       MR. COLLINS: Yes, sir.

25       COMMISSIONER MCGAFFIGAN: I will look forward to seeing  
26 what you have to say there.



1 MR. COLLINS: Commissioner, the response is actually to  
2 the Chairman and so --

3 CHAIRMAN DIAZ: I have tasked the EDO to provide a  
4 response within 30 days. We will be looking forward to that.

5 MR. DYER: Commissioner, if I may address the one issue.

6 I think the OIG, the event inquiry, again, was about the  
7 condition report that identified the ugly red photo. And one of  
8 their conclusions was that the senior resident, the resident  
9 inspector, and possibly the ISI inspector had viewed the condition  
10 report during the outage but it didn't recognize the significance  
11 of it.

12 And I think that a lot of our -- the information that we  
13 provided to the IG in response to this dealt with the fact that  
14 they didn't recognize the significance of it.

15 And so that was the thrust of our information. We did  
16 not address specifically communications.

17 It is sort of indirectly referenced in the response when  
18 it talks about operating experience and sharing information and  
19 training and things like that, in improving the plant status  
20 follow-up and specific -- some specific inspection procedure  
21 changes.

22 But we did not address the issue of communications  
23 head on.

24 I believe that we are addressing it, as you have heard.  
25 But, again, it's a case where when we responded to the event  
26 inquiry, because we are really just focused on the issue of the

1 red photo, we didn't address it.

2 COMMISSIONER MCGAFFIGAN: If we think about this beyond  
3 the stress corrosion cracking and the barrier integrity and all of  
4 that, and think about ourselves as an organization -- and the  
5 Chairman is smiling -- he talked to you all, I believe, last year  
6 in Annapolis at the annual review meeting about communications  
7 both upward and downward within the organization. And I think  
8 he's challenged the leadership team to figure out ways to improve  
9 that.

10 And I think we have been making improvements.  
11 Commissioner Merrifield mentioned how well informed we all feel at  
12 the moment with regard to the Davis-Besse activities and literally  
13 being able to follow those on a daily basis.

14 We sort of have our own Inside NRC at the moment. It is  
15 actually ahead of Inside NRC most days, which I credit Mike Knapik  
16 and all the people who work on Inside NRC and Nuclear News  
17 Flashes. We have our own Nuclear News Flashes today. But we are  
18 very well informed.

19 And I think that's a step forward in terms of the bottom  
20 of the organization keeping the top of the organization well  
21 informed. And I think there are some examples that you cite of  
22 the top of the organization letting the -- not the bottom -- but  
23 the people out of the field, who are among the most important  
24 people in this organization, keeping them better informed about  
25 operational experience, so that they can then act on the  
26 information.

1 But we have got a ways to go there. I think that that  
2 is one of the big lessons learned. It doesn't lend itself to the  
3 sort of detailed technical analysis that we do on some of these  
4 other things. But it deserves analysis.

5 Indeed, the Chairman, the Director of Communications  
6 position that we are hoping to fill may also help us move in a  
7 direction of putting ever more emphasis on both upward and  
8 downward communication within the organization and external  
9 communication. All are important, both inward and outward.

10 In terms of the issues that you have described, I'm  
11 going to start with barrier integrity and some of these very  
12 challenging tasks.

13 In viewgraph 38 -- I'm going backwards because it's  
14 freshest in my mind. The completed preliminary scoping of risk  
15 assessments involving passive component degradation, this is just  
16 an enormous task.

17 I sat on a panel probably about a year and a half ago  
18 with George Apostolakis at the Research conference you have  
19 every fall. And George Apostolakis went out of his way to point  
20 out that there's no PRA anywhere in the industry that would model  
21 a vessel head failure of the sort that we saw at Davis-Besse.

22 And is there a prospect that this is going to lead to  
23 something? It's a very large task.

24 There's a fancy word that the ACRS uses for the sort of  
25 uncertainties where things are left out of models. But there's a  
26 certain -- once you know something, you can put it in the model.

1 But the stuff that you don't know is very hard to model.  
2 And we didn't know that this was a possible phenomenon. So  
3 modeling the unknown phenomenon in a PRA sounds like it's pretty  
4 hard.

5 MR. STROSNIDER: I agree. It is a challenging task and  
6 I think Nilesh was pointing that out. Our initial look at that  
7 reaffirms that in fact it's challenging.

8 But I think what -- there are a couple of things we are  
9 focusing on. One is, if you look at PRA models in general, and  
10 advancing the state of the art of the PRA model, how would you, in  
11 general, incorporate these kind of degradation mechanisms into  
12 these models? Right now they are treated as initiating events.  
13 And that's all the further it goes.

14 But they could factor in in other ways. So one is just  
15 understanding fundamentally how you would incorporate it into a  
16 model.

17 I think the second part of it is that we have to  
18 recognize, we can't model all potential degradation mechanisms.  
19 And as Nilesh pointed out, what we are doing, then, is we are  
20 going back on a risk-informed view of this to say, well, what are  
21 the most important ones that we need to look at?

22 And I think we have, in some other related activities,  
23 some of the phenomenon identification in ranking activities  
24 looking pro-actively at materials degradation.

25 When we get the results of that, if we understand how to  
26 model some of this stuff and we then incorporate with that our

1 knowledge of conditional probabilities and what's the consequences  
2 of a failure at a given location, we may be able to pinpoint some  
3 of the more important things that should be incorporated in the  
4 models.

5       So to capture everything is, I agree, extremely  
6 challenging. Can we capture some of the higher priority more  
7 important items? I think if we pull together to work properly  
8 that we can make progress there.

9       And one other comment on this is I guess the other thing  
10 in terms of knowing how to model this is that we have to recognize  
11 that this sort of event does occur. That degradation is found.  
12 And when it does, we need to discuss it through the significance  
13 determination process and understand its significance.

14       So we do need to understand how to model and how to do  
15 those things also when they are found.

16       COMMISSIONER MCGAFFIGAN: Let me mention the slightly  
17 less difficult, but I still think very hard -- just go to the  
18 previous page. This leakage detection capability, the more  
19 advanced leakage detection capabilities, the last memo that I saw  
20 I think you, Mr. Strosnider, and Mr. Sheron's names were on it.

21       And you were basically saying you were not at that time  
22 -- and it's a couple of years ago -- in a position to recommend  
23 any system because there were problems with each of the more  
24 advanced technologies. That there were false positives -- and the  
25 amount of detection that you are trying to get to for some of  
26 these events -- I mean, you know, some of the cases where you can

1 get boric acid degradation is so small that the probability of  
2 finding a leakage detection system that will find something -- there was an  
3 example, I think, at Oconee of the initial stuff there. It was really very  
4 minute amounts. The leak rate was so small.

5       So how far are you going to likely push the state of the  
6 art? Are you likely to come back to us say, it's only a couple of  
7 months away. There is not a lot of stuff at this point ready to  
8 recommend?

9       MR. STROSNIDER: That's an excellent question. One of  
10 the things that I want to emphasize in this area is the need to  
11 take an integrated approach to it.

12       The first question that people typically ask is how  
13 small a leak can I find. And that's the natural question to ask.  
14

15       COMMISSIONER MCGAFFIGAN: As soon as you answer that,  
16 false positives come with it.

17       MR. STROSNIDER: But I will tell you that there have  
18 been systems out there for quite a while that have the capability  
19 to find very small leaks. But they need to be looked at in terms  
20 of what is the relationship between that leakage and structural  
21 margins and what's the degradation that's actually occurring.

22       And the important thing, I think, that needs to be  
23 focused on, then, is not just the sensitivity but as Nilesh  
24 mentioned, the ability to discriminate, to understand what type of  
25 degradation it is. Is it reactor coolant pressure boundary  
26 leakage? Which means it's coming through a metal component and

1 represents a crack or some sort of other degradation? Is it a  
2 gasket that's leaking?

3 Which can also be significant. But it's important to  
4 know how to respond to it properly. So part of what we are  
5 looking at, when we look at the advances in these technologies, is  
6 to understand that discrimination capability and see if that will  
7 allow some additional improvements in the way things are currently  
8 being done.

9 COMMISSIONER MCGAFFIGAN: Mr. Chairman, I think I have  
10 taken enough time, at least for now. And if we have a second  
11 round, I will do it. Literally, you can spend a lot of time on  
12 this stuff and I want to give my colleagues a shot.

13 CHAIRMAN DIAZ: Thank you, Commissioner McGaffigan.  
14 Commissioner Merrifield?

15 COMMISSIONER MERRIFIELD: Mr. Chairman, I want to say  
16 that I would share the concerns that Commissioner McGaffigan has  
17 raised relative to the most recent letter that we have received  
18 from the Inspector General about communications.

19 I do think this is a valid issue for the Inspector  
20 General to have raised. I do appreciate the detailed explanation  
21 that Sam has provided to us. I look forward to reading the  
22 further information from the staff that will go to the Chairman.  
23 But I think this is a very important area.

24 I would say, having listened to, I think, an associated  
25 comment -- I'm sort of putting together, maybe he didn't but that  
26 Jack Strosnider just made about discriminating information.

1 There's a counterbalance to all of that.

2       The counterbalance is that sometimes you can provide too  
3 much information to people in a way that would overwhelm them. I  
4 know by way of analogy that the Defense Department is trying to  
5 create the tools of a digital battlefield to provide the  
6 front-line troops information to give them the most effective  
7 ability to fight an adversary force.

8       One of the things that they have to deal with is making  
9 sure that they don't overwhelm those individuals with too much  
10 information, thus making that flow of information ineffective.  
11 And I think the issue of discrimination in communications is  
12 something that we also need to be mindful of in that effort as  
13 well.

14       I want to turn -- on slides three and five, as well as  
15 some of the information that was provided by the staff, there was  
16 a discussion of 7 of the 21 high priority recommendations being  
17 completed by December of 2003. That means that 14 of the 21 were  
18 not.

19       I know that there's a schedule for completion of a  
20 variety of these high priority recommendations. I want to get  
21 some better sense -- and I know some of that is included in the  
22 report that was recently sent up to the Commission. But I want to  
23 get some sense for the time line to completion for the remainder  
24 of those high priority recommendations.

25       Is there anything that the Commission can do to speed up  
26 the completion of those high priority recommendations? And what



1 implications might there be, perhaps, from a budgetary standpoint  
2 if we try to get you to complete them, say, prior to December 2005  
3 or otherwise when they are expected to be completed?

4 MR. DYER: Commissioner, without going through the  
5 individual items -- we can do that, maybe, afterwards and adjust  
6 schedules -- some of them involve rulemaking. As we have found  
7 out, that is a long deliberative process once the technical basis is  
8 finalized.

9 So if our proposal is to develop a technical basis and  
10 then implement by rulemaking, those are the ones that tend to  
11 extend out beyond 2005 window.

12 And then, as I believe in the area of Research, some of  
13 it is follow on implementation activities, particularly on the  
14 barrier integrity and possibly in the stress corrosion cracking  
15 where we have long-term research projects going on that would then  
16 continue to lead to a longer period out before completion.

17 COMMISSIONER MERRIFIELD: That is a very reasonable  
18 answer. And I think this goes to the issue that Commissioner  
19 McGaffigan has raised that I agree with about communications.

20 I think people reading that we have only had an  
21 accomplishment of a third of these might not fully understand that  
22 there are practical implications of why we haven't completed  
23 those. And I agree with you when it comes to rulemaking when it  
24 comes to research efforts, some of that is more difficult to do in  
25 a quick amount of time. And there are good explanations for that  
26 that we need to be clear and transparent in providing.

1 I think there's a utility in a fresh look at these.  
2 Setting aside the understandable time lines of rulemaking and  
3 research, are there high priority recommendations that staff would  
4 find some utility in additional resources so that we can  
5 effectuate those early? I leave that as an open question that I  
6 would like to get an answer from the staff at some later time.

7 In terms of keeping all of the pieces together, I guess  
8 I would like to get a better understanding of the steps the  
9 offices have taken to ensure that the remaining recommendations  
10 are integrated into the operating plans and effectively tracked  
11 and targeted to ensure that they are completed in a timely manner?

12 MR. DYER: Yes, Commissioner. I think the process by  
13 which we are following is, again, we have the detail action plans  
14 for each of the four overarching areas. We budget those out.  
15 They go through our PBPM process. If they are not -- the high  
16 priorities are ranked high. And we follow them.

17 And the low and the medium priorities, again, there is  
18 some give and take as the prioritization process goes through.

19 But regardless of the schedule, we still hold it  
20 accountable is that any changes to the dates are reflected in our  
21 status report and they come to me, to Ashok Thadani. It goes  
22 to the EDO, and eventually to the Commission.

23 So we take a look -- the fact that it's part of the  
24 Davis-Besse Lessons Learned Task Force Report, and it may be a low  
25 priority, but because we are reporting on it, it still receives a  
26 continuing amount of attention and a decision whether or not of

1 all low priority work we are doing within the office, that's an  
2 item that I want to get done.

3           COMMISSIONER MERRIFIELD: I reflect and appreciate the  
4 comment on PBPM. And obviously that is the model that the staff  
5 is using and the Commission has bought into in terms of making  
6 budget assumptions and budget decisions in the overall management  
7 of the agency.

8           The only counterbalance and concern that I would  
9 certainly want to raise is that, you know -- I guess putting on my  
10 budget hat, that's not always entirely transparent to the  
11 Commission. It's a function of the process. It's not as a result  
12 of anyone's fault. I wouldn't assign any fault to that.

13           But I think the thing that we just need to be mindful of  
14 is that when looking historically back at other lessons learned  
15 efforts, one of the charges made against those in the past is that  
16 as a result of an ongoing budget review, that some of those things  
17 continue to get pushed off.

18           There may be good reasons for that as we go forward.  
19 But I think the Commission does need to have a good information  
20 flow about those decisions so that when called upon by our  
21 stakeholders or by the Commission itself, we can answer in an  
22 articulated way what was the decision-making process for those  
23 decisions. Because we certainly wouldn't want to be in a  
24 circumstance where, because of other things, we have put them off  
25 and put them off and here we are, however many years down the  
26 road, and saying, there's another list of recommendations that

1 ultimately were never implemented by that Commission.

2 I guess this is the final question that I want to ask at  
3 this point.

4 How are we gauging the effectiveness of the actions that  
5 we have taken? And what are the measures that we can really point  
6 to as part of our attempt to gauge how well we have done?

7 MR. DYER: Well, I think, right now it's customer  
8 feedback and actual hands-on implementation. As you heard  
9 Mr. Howell, what are we finding out from the feedback from the  
10 regions and from our own operating experience groups in the  
11 offices, as well as the industry. And you can sort of see the  
12 direction that we are headed.

13 The challenge that I have right now is when -- how do we  
14 go to closure. I don't know if that was the question.

15 We can see a vector right now informally by the  
16 accomplishments and the direction that the program is going. But  
17 whether or not when all action items are done, whether we are in  
18 the right place that we originally intended to be when we started  
19 out is one of the areas I think we need to focus ongoing forward,  
20 you know, as a close out to this action plan.

21 Too often we would have discreet action items that we  
22 accomplish but it doesn't come together to solve the original  
23 problem. And I think that's some of the lessons.

24 You know, one of the activities that we have is to  
25 review previous lessons learned and find out why some of them may  
26 not have been fully effective. Well, as part of the close out of

1 this, I intend to take a good close look at did we, in fact,  
2 accomplish what we set out to accomplish.

3 And again, possibly use the actual lessons learned task  
4 force team to review for closure of those activities.

5 But at this stage, we haven't done anything.

6 COMMISSIONER MERRIFIELD: Well, I think -- I like the  
7 way you have articulated that. I think the danger that one always  
8 has is that you rely on a checklist. We had a certain number of  
9 boxes we had to check and here's our list of checked boxes.  
10 That's, projecting forward, thinking of a future Commission  
11 meeting when I wanted to ask you guys about how we are doing. I  
12 think you are right to conclude in your answer that we need to go  
13 beyond that, that we really need to have a some way of grasping.  
14 Not only have we implemented these, but have they been effective  
15 in changing our way of doing business.

16 DR. TRAVERS: I think you are exactly right,  
17 Commissioner. I might just say one word.

18 We tried to give you a sense in the course of the  
19 briefing of the integrated elements of these programs. And that's  
20 got to continue. I haven't heard Jim say before, but I certainly  
21 concur with his notion that as you get near the end or at the end in any  
22 particular area, you assess whether or not you have gotten to the  
23 point where you have set out to be when you listed these items.

24 And I think to some extent we have got to do that sort  
25 of thinking as we go through it, not just wait until the end. We  
26 will try to do that.

1 COMMISSIONER MERRIFIELD: Great.

2 Mr. Chairman, I'm going to -- I'm going to make two  
3 quick comments and then pass back to you for your questions.

4 There were comments about the internal web site today  
5 and efforts to improve the way in which we are communicating  
6 internally to our internal stakeholders and externally to our  
7 external stakeholders. Recognizing I have not had an opportunity  
8 to review the changes to the internal web site, I won't comment on  
9 that.

10 I will say my familiarity with our external web site  
11 does not rise to the level of some of our more frequent users. So  
12 I'm probably closer to a more casual user than perhaps others.

13 I think the staff was a bit sanguine and over optimistic  
14 in its belief that we are getting that information there. We may  
15 have an awful lot of information we have put on the external web  
16 site. I'm not convinced that it's integrated in a way on our web  
17 site that it's easily accessible to an average member of the  
18 public.

19 It may well be that some of our stakeholders who are  
20 very familiar with our way of doing business, including our  
21 internal stakeholders, might be able to find some of that. But I  
22 think we do need to be mindful of the residents who live around  
23 Davis-Besse who may be interested in some this and their ability  
24 to get access to that very same information.

25 From my standpoint, I'm afraid that I don't share the view that we are  
26 there yet.

1 Final comment, Mr. Chairman. And you knew this one was  
2 coming. I'm going to play my broken record.

3 I think I would agree with the Chairman and Commissioner  
4 McGaffigan that the staff has provided an excellent presentation  
5 today. My broken record is that I wish that more of the  
6 information had been provided to the Commission earlier on so we  
7 could review it in a written form so that I could be better  
8 prepared today.

9 I have a limited staff. They work very hard to try to  
10 develop and work with me to figure out what I was going to talk  
11 about today, much of which would easily not have been necessary to  
12 prepare had I had better access to the information that was  
13 provided by the staff.

14 So I know we have talked in other formats of trying to  
15 provide some direction to the staff in that regard. And I will  
16 continue to beat that particular drum.

17 Thank you, Mr. Chairman.

18 CHAIRMAN DIAZ: Thank you, Commissioner Merrifield.

19 Let me just start with an issue of communication. If we  
20 look at slide 40, the very last sentence in this briefing. It  
21 says, "Activities have resulted in significant positive outcomes  
22 for the agency and the nuclear industry."

23 Fundamentally, I would like just to make sure that we  
24 all understand that the bottom line is that the significant  
25 positive outcomes are in the public. The significant positive  
26 outcomes are in ensuring that we have reasonable assurance of

1 adequate protection. That is the bottom line. I'm sure you all  
2 have that in mind.

3 But it's missing in here. And that, of course, is an  
4 issue. You know, sometimes we do all of these things by due  
5 process. But it, again, is a fact that I know, we know and you  
6 know that's how we do it. But it needs to come clearly across.  
7 And in this case it obvious.

8 It's a very simple thing. But I just want to point it  
9 out that it would just have taken a simple second to do that.

10 Having said that and realizing that the public welfare  
11 is our main concern, that their safety is our main concern, let me  
12 go ahead and now go into some of the other issues.

13 I think it's been addressed in here, but one of the  
14 things that we have to get better at is telling the difference  
15 between process and knowing what to do when you are presented with  
16 a situation.

17 In other words, it's having a difference, a trigger, and  
18 having technical know-how in how to appreciate that that trigger,  
19 that difference, means that you have to do something.

20 And so one of the lessons learned from all of this is  
21 the fact that the training of our inspectors the awareness of the  
22 licensees to respond to those triggers have to come up. It is not  
23 a check mark, okay. And I know you know that. I just need to  
24 make sure that we emphasize it.

25 We are at a point in the history of our agency and in  
26 the history of nuclear power that know-how is here. And it needs



1 to be used.

2           Therefore, I consider the issue of training to exercise  
3 those technical capabilities a major issue that this agency has to  
4 do that goes way beyond Davis-Besse and maybe even way beyond the  
5 Davis-Besse Lessons Learned Task Force recommendations which is in  
6 there. But I think it's a little more generic than that.

7           So when you, in slide 24, you came and said, you know,  
8 we are going to put this information in the hands of end users, I'm  
9 sure that you mean it.

10          Now, can you tell me what improvements have already been  
11 achieved in putting this information in the hands of users?  
12 Beside the web site -- do we get this feedback? I know you talked  
13 about it a little bit but I want to hear about it in a more direct  
14 form.

15          MR. DYER: I think we have focused on trying to improve  
16 the technical quality -- to also include the improvement of the technical  
17 quality of the information we are providing at our inspector  
18 seminars in that area.

19          Additionally, I can speak from my time in the regions  
20 where as a result of the large influx in interns, we had focused  
21 considerably on a training program. Not only the QUAL card  
22 expertise that would say, you understand how a BWR and a PWR work  
23 and what Part 50 is, those kind of activities, but also the  
24 lessons learned of the history, if you would, Brown's Ferry fire.  
25 The significant historical aspects that have driven our regulatory  
26 agency to where it is.

1           So I think there's been this increase, not so much with  
2 Davis-Besse but certainly the recognition when we started hiring  
3 entry-level employees, started driving us that way in the region.

4           And I will go to Art now.

5           MR. HOWELL: Chairman, I can only speak for Region IV.  
6 But I have had some conversations with my counterparts in the  
7 other regions. And I believe in a general sense they have done  
8 some of the same things.

9           To pick up on what Mr. Dyer indicated, we spent a  
10 considerable amount of time over the past year, separate and apart  
11 from the lessons learned, in working with our staff so that they  
12 would internalize the lessons.

13          You mentioned the counterpart meetings. We spent days  
14 in counterpart meetings early last year where we had break-out  
15 sessions discussing not only operating experiences but  
16 communications, integration of assessment data.

17          We have gone out and done outreach with the utilities in  
18 various forms. We have been to American Nuclear Society meetings,  
19 utility meetings in Region IV, utility group meetings with various  
20 managers and we have posted what licensees are doing with some of  
21 the INPO documents that parallel our efforts with respect to  
22 Davis-Besse to see what kinds of issues are being identified and  
23 how they are dealing with those.

24          We have had separate management meetings with certain specific  
25 utilities, not so much on Davis-Besse but in many cases, questions  
26 surrounding the Davis-Besse Lessons Learned do come up to post

1 them on what they have done and what they have learned and what  
2 their staffs have learned.

3         We have also spent time actually training our staff.

4 There was a mention of the required reading on the Columbia  
5 Shuttle accident. Well, we actually took the Columbia Shuttle  
6 accident and we gave a quiz to the staff where we compared and  
7 contrasted the lessons learned from the shuttle disaster with  
8 Davis-Besse to see whether or not the staff had understood some of  
9 the common themes from both of those two issues.

10         The response was quite good. It was quite apparent  
11 that, at least in the Region IV inspection staff, that they had  
12 taken the time to go through that.

13         There is one other example I wanted to leave with you  
14 that perhaps illustrates some of the lessons learned that have  
15 been internalized.

16         Everyday in the region -- and all regions do this, we  
17 have a status meeting on plant status. The DRP branch chiefs  
18 report out on all, in our case 14 reactor facilities at the site.

19         Prior to Davis-Besse, that meeting used to be about 10  
20 or 15 minutes long. Today that meeting is probably 30 to 45  
21 minutes long.

22         So you ask yourself, what happened? There's not two or  
23 three times more issues, obviously. But the branch chiefs lowered  
24 their thresholds for communicating information to regional  
25 management.

26         And they did it not simply because we changed our

1 regional policy guidance, which we did, or simply because we told  
2 the branch chiefs that we want to hear more, which we did. But it  
3 occurred over time. And the reason that I believe it occurred  
4 over time is that the branch chiefs and inspection staff started to truly  
5 internalize some of the key lessons from Davis-Besse.

6       And I think two of those lessons are that seemingly  
7 insignificant anomalous conditions can, as was pointed out,  
8 actually point to a more serious problem and this is that a  
9 complex business and that no one person can know it all. And the  
10 more that we share and talk about it, the greater chance that we  
11 have in which future problems will be prevented.

12       I can go on --

13       CHAIRMAN DIAZ: No. I want to thank you for that  
14 last example. Because I think it's a very valuable insight into  
15 what is happening.

16       So I would just end up with the question, you know, is  
17 this change permutating our structure to the point that we can say  
18 that it's slowly but surely its importance is realized by the  
19 staff of the NRC?

20       COMMISSIONER MCGAFFIGAN: I suggest to the staff that  
21 they paraphrase, Mr. Howell's last statement in whatever you are  
22 preparing for the Chairman to send back to the IG, because that  
23 was, I think, the best anecdote that we have gotten thus far that  
24 something significant is happening.

25       MR. STROSNIDER: On the research perspective, just to  
26 note that we have been sending people to the regional counterpart

1 meetings. Of course, our support is through the program offices.

2 But we want to make sure that they understand our work.

3 And I think it's also very good for our staff to go out

4 and hear from the regional staff what products they need and in

5 what form because it helps us to focus our programs. So we have

6 been participating in that also.

7 CHAIRMAN DIAZ: I want to hear from the EDO. You

8 manage the staff of the NRC.

9 DR. TRAVERS: I think you have heard some anecdotal

10 evidence of an affirmation to the question you asked about whether

11 or not we as a staff have appreciated what happened at Davis-Besse

12 and the lessons that have been drawn from it. Are we taking those

13 and moving forward in the way that we intend? And that is simply

14 to build and to enhance our processes.

15 I think we are doing that. I think it's working its way

16 through the staff. I think it going to be something that we are

17 going to continue to need to foster from all levels of management.

18 CHAIRMAN DIAZ: So it is permeating the structure?

19 DR. TRAVERS: I think it is. And we need to continue to

20 foster that.

21 MR. DYER: If I can add -- the one other thing probably

22 on a more global that's going throughout the Commission is the

23 efforts in strategic workforce planning. I know from the regions

24 and NRR we are identifying what are the technical skills we think

25 we are going to need in the out years. And, again, we are looking

26 at succession planning, planned retirements and identifying what

1 critical skills do we need and what are those areas.

2 In our case, the critical area was in electrical  
3 engineering. And coupling on top of that, IDC, in developing  
4 individual development plans for key employees to develop those  
5 skills so that we are ready for what we are going to need in the  
6 future.

7 CHAIRMAN DIAZ: Thank you so much. The next issue  
8 is almost one of my favorite issues because it deals, as Carl  
9 knows very well, with the fact that I believe that zero and  
10 infinity are very different numbers and both very difficult to  
11 achieve. It's a significant difference between zero and infinity.  
12 But they are also extremely difficult to achieve.

13 In fact, I think I said one time that you need an  
14 infinite amount of effort to get to zero or that you need to  
15 divide by zero to get to infinity.

16 On slide 33, you indicated that the Task Force  
17 recommended that we assure -- the word is assure -- that plants do  
18 not operate with reactor coolant pressure boundary leakage. Is  
19 that zero? Is that 100 percent confidence of zero leakage?

20 I believe, of course, that's a very desirable goal. I  
21 think you have been hinting at it by trying to say let's go ahead  
22 and measure it.

23 But as a practical matter, how are we going to provide  
24 reasonable assurance that reactor coolant pressure boundary is not  
25 a threat to public health and safety?

26 That includes the structures, that includes -- it's not --

1 I'm not concerned with zero. Remember, I'm concerned with is  
2 it a threat to reasonable assurance for the public health and  
3 safety?

4 MR. STROSNIDER: I will take a shot of that.

5 I will come back to the comment I made earlier about the  
6 importance of an integrated approach. And I would add to that a  
7 risk-informed approach.

8 Reasonable assurance, as you pointed out, getting to  
9 zero leakage, assuring zero leakage is probably not possible.  
10 However, I think the important thing is, if you look at it from an  
11 integrated perspective, in terms of what a leakage rate, what  
12 leakage rates mean in terms of margins to failure, what the  
13 reliability of your nondestructive examinations are, whether they be  
14 visual, surface, volumetric, and then taking that into  
15 understanding those margins.

16 But then you need to go the next step and understand,  
17 well, if you do miss this, what are the potential consequences.  
18 And working that all the way through conditional core damage  
19 probabilities and everything that we look at in the risk  
20 assessments.

21 So you need to look at it from that overall risk  
22 perspective.

23 And I would add that after you have done that, to make  
24 sure that it's risk informed, you need to add some engineering  
25 judgment and look at those traditional things that we have laid  
26 out in Reg Guide 1174. There's a lot of good engineering

1 experience out there. You need to bring it to bare.

2           So I think that integrated approach will provide the  
3 reasonable assurance that we are looking for.

4           COMMISSIONER DIAZ: So the statement which is somewhat  
5 incomplete is, assures that plants do not operate with reactor  
6 coolant pressure boundary leakage that could compromise reasonable  
7 assurance of adequate protection. Is that what it means?

8           DR. PAPERIELLO: I think you heard a engineer's zero and  
9 not an physicist's zero.

10          COMMISSIONER DIAZ: Let me hear a physicist's zero.

11          COMMISSIONER MCGAFFIGAN: A physicist's zero is an absolute one.  
12 To give the briefer credit, I think the slide doesn't reflect the --

13          CHAIRMAN DIAZ: I understand --

14          COMMISSIONER MCGAFFIGAN: He had these nuances in --

15          CHAIRMAN DIAZ: I know. I know. But that was what  
16 was projected. That's what people who listen to -- I just want to  
17 make sure that we are all on the same basis.

18          There is no zero. There is no infinity. But we have  
19 the responsibility to provide that reasonable assurance. And an  
20 integrated manner is definitely the way to do it from my  
21 perspective. And with that, Commissioner McGaffigan, you are in  
22 luck today. We have time for a quick second round.

23          COMMISSIONER MCGAFFIGAN: Let me just see. There was  
24 brief reference in one of these -- I think in the operating  
25 experience task force. Mr. Beckner mentioned towards the end,  
26 slide 26, that this was resource intensive, that you were likely



1 to encounter policy issues that might require resolution.

2 I just always -- whenever I hear the word "policy  
3 issues" Commissioners salivate or whatever, can you give us a  
4 taste of what some of those might be?

5 Or your boss --

6 MR. DYER: I can, Commissioner.

7 I think as Bill described it, the Operating  
8 Experience Task Report was a direction setting and it talked about  
9 realigning ourselves with respect to operating experience.

10 It also goes back, again, to the late '90's Commission  
11 papers which I think sort of just disestablished the office of AEOD,  
12 which the Commission approved, and sent the responsibilities to  
13 NRR and Research.

14 What we are anticipating, as we look at the Operating  
15 Experience Task Force and their recommendations, it may be -- some  
16 of the recommendations as we figure out what is the best way to  
17 implement them, may be in conflict with the earlier Commission  
18 guidance on how would disestablish AEOD or what the resources would  
19 be in order to provide the appropriate level of emphasis from the  
20 Operating Experienced Task Force.

21 So what we are looking at is if we are going to redirect  
22 or if we are going to change something from the previous  
23 Commission guidance, we would again go back to the Commission with  
24 a recommendation.

25 COMMISSIONER MCGAFFIGAN: I look forward to that. I  
26 honestly do think you guys -- especially as time passes, previous

1 SRM's were arrived at in the context of the time and date that  
2 they are arrived at. And they are not wholly written. We are  
3 open to changing our guidance if it's presented to us. So I look  
4 forward to that.

5 The other item on slide 28, there was an inspection  
6 guidance was revised to require resident inspector screening of  
7 all corrective action items.

8 Whenever I see "all," it isn't an infinity, but it's a  
9 lot. My antenna goes -- is this the best use of resident time to  
10 -- or is this perhaps an overreaction?

11 If I were a resident and I were assigned this task, and  
12 I was never a resident and I was never assigned this task, I would  
13 think, my review might be, my screening might be very cursory for  
14 much of the items on the list.

15 MR. RICHARDS: You would make a good resident.

16 I was a resident and your screening, the screening that  
17 we expect is pretty cursory. I mean, most of the things that go  
18 under the corrective action system -- are cosmetic or non safety related.

19 So what we are asking the inspectors to do is to be  
20 sensitive to, apparently, safety significant issues going into  
21 corrective action, have I seen that before, is it something that I  
22 should go pull the string on?

23 COMMISSIONER MCGAFFIGAN: That guidance, I would  
24 understand. Look for the ones that are showing up repeatedly.  
25 Look for the ones that are potentially significant that don't seem  
26 to be getting resolved like the filters at Davis-Besse and start

1 asking questions and getting help on those. That's what this  
2 means.

3 MR. RICHARDS: And I would like to add that I would imagine,  
4 based on having talked to some people from my own experience, that  
5 there were a lot of resident inspectors that were doing this  
6 before it was put into the procedure. So this is just to try and  
7 tell everybody we expect this.

8 COMMISSIONER MCGAFFIGAN: Thank you.

9 That's all, Mr. Chairman.

10 CHAIRMAN DIAZ: Commissioner Merrifield?

11 COMMISSIONER MERRIFIELD: Commissioner McGaffigan's last  
12 question raises one that I have been sitting here thinking about.

13 I go back to my own training in law school. A lot of  
14 people think that -- lawyers do spend a lot of time when they are  
15 preparing for the bar in law school learning statutory law and  
16 various types.

17 One of the other important elements is that you have to  
18 understand fact patterns. You have to be able to identify  
19 problems.

20 And I guess I will admit, I don't understand well enough, and I will get  
21 a briefing on this, how our inspectors are trained. And it makes me ask the  
22 question do we really do enough to train our inspectors to identify  
23 potential problems through role play?

24 Do we give them -- you know, here's all of these things  
25 going on at the plant, find what you think the problem is, follow  
26 your nose, you know, give us some sense of what you think might be

1 the problems and give them some instruction as to, well, you did  
2 well here, here and here but you missed this one.

3 Do we do enough of that? Is that part of the program  
4 that we use to train our inspectors?

5 MR. DYER: Let me take a shot at that. There's a  
6 day-to-day interaction with the branch chief and regional and the  
7 daily status calls as they talk about issues that have come up.  
8 So it's not just the resident inspector.

9 A lot of times, there's a lot of on-the-job training and  
10 communications from the branch chief down to the inspection staff  
11 at the sites.

12 The other thing that I know in the two regions I have  
13 been in, there's common practice is to recognize good findings and  
14 not only with awards but when an inspector would have a good  
15 finding, is for the branch chief to write up or take the excerpt  
16 from the inspection report and they have an internal web site  
17 almost with every region. And the regions share it with each of  
18 the DRP directors.

19 And there's a communications, if you would, of it may  
20 not have been a big deal when it went through the SDP, but this is  
21 a practice that we want to encourage. And it may be -- they used  
22 to be called good inspection findings. I can't remember what all  
23 acronyms the regions would have with them.

24 But it was -- an inspector was looking at a level gauge  
25 and challenged the licensee because of the failure mode. And if  
26 it's something that we see that is a behavior we want to

1 encourage, then we put it out. We give the inspector recognition  
2 for it. And like I said, it goes sort of on a regional web site  
3 that goes to the inspection branch here at NRR and all the other  
4 corresponding division directors in the region.

5 And they can look and say, hey, this is something I want  
6 my sites to look at as part of this module.

7 COMMISSIONER MCGAFFIGAN: It goes to all the regions?

8 MR. DYER: I believe it goes to the divisions. Let me  
9 get more current here with the people who are closer to that than  
10 me.

11 MR. RICHARDS: To try to answer your question about  
12 how people learn to inspect, I think -- I don't believe there's  
13 much role playing going on as far as the formal training process  
14 goes.

15 But new inspectors typically are paired up with more  
16 experienced people. Obviously, at the sites, the resident  
17 inspectors work for a senior resident. They go out and do  
18 inspections. They come back to the office and they talk about  
19 what they did and what they found. They are seeking guidance.  
20 I'm sure the senior residents are looking to mentor these junior  
21 people along.

22 Likewise for people coming out of the regions, typically  
23 when they go back to the regions, they write their reports, they  
24 likely sit down with the branch chief and do a debrief. The  
25 branch chief is almost always a former, you know, senior  
26 inspector.

1 He will spend time talking about what did you look at,  
2 what did you find, how did you interact with the licensee.

3 So there's that on-the-job training experience that  
4 comes from working with more senior people. And then we send out  
5 a lot of -- well, small teams, to do inspections with the senior  
6 people leading those. And the junior people have an opportunity  
7 to learn from those senior inspectors.

8 I can say that when I was starting out as an inspector,  
9 you quickly find out who the good people are, the people that do  
10 the best inspections and you tend to go to those folks and ask  
11 them what do you think of what I have found. What can I do  
12 better?

13 So there's a lot of on-the-job training that gets done  
14 that way.

15 MR. COLLINS: You have asked a question that has a lot  
16 of answers to it. You are getting into the how rather than the  
17 what.

18 We do have root cause training that's a part of the  
19 higher level training from Manual Chapter 1245. That root cause  
20 training does give scenarios. It has set scenarios with symptoms  
21 and causes and external and internal conditions. And you break up  
22 into groups and you try to solve the problem, get to the root  
23 cause, determine the effective corrective action. Then you come  
24 back together.

25 At a higher level, for the incidence response training,  
26 there's actually a period of time of seven to ten days where

1 people go off, in the formal training sense, and they are given a  
2 real life scenario that includes actual role players where you are  
3 in the plant, you have a allegers, you have a plant managers, you  
4 have recalcitrant licensees, you have non-cooperative inspectors.  
5 You have all of these scenarios. You try to get those, using a  
6 team, to a root cause analysis to conclusion.

7 Then there's a formal presentation at the end to a mock  
8 Commission. One of those groups is chosen to make a presentation  
9 to a Senate subcommittee.

10 So we have ranges --

11 COMMISSIONER MCGAFFIGAN: Mock trials. Moot court? Is  
12 that what it is called?

13 COMMISSIONER MERRIFIELD: I guess I need to get a briefing to  
14 understand this a little bit better.

15 Taking it at its heart, here we have a case of -- you  
16 know, we had evidence that was available to our residents that  
17 wasn't picked up on. And it begs the question, was part of that  
18 caused by a gap in the training that we gave to those folks?

19 You provided, collectively, some very good elements that  
20 one would use to train. Certainly mentoring and on-the-job  
21 training is very, very good. That can vary depending upon who  
22 your mentor is.

23 And I think in order to have a high degree of  
24 consistency in terms of quality, I'm pleased that, Sam, you have  
25 filled in some of the blanks for me because that gives me a  
26 greater comfort level.

1           Perhaps not only talking about the good things but  
2 certainly keeping lessons learned of things that didn't work so  
3 well, here's some cases of where an inspector missed something and  
4 here's what happened.

5           I think we really do need to read your history there.  
6 And to have that kind of role playing and those fact-based  
7 scenarios to make sure that we are giving our residents and our  
8 inspectors in the field the best tools available and giving them  
9 an opportunity to enhance their judgment the best way so when  
10 confronted with circumstances that they have not encountered  
11 previously, that they judge that in the right way and follow up as  
12 we hope and expect that they should.

13           MR. COLLINS: I think that the inquiry recognizes that -- the  
14 event inquiry, it does indicate in there careful reading would  
15 show that one of the residents indicated that he wasn't trained.  
16 Even if he would have seen the photo, he is not sure he would have  
17 recognized the significance because he didn't consider that he was  
18 trained. He was fairly new on the site, within six months.

19           I believe the senior resident indicated that based on  
20 the symptoms, based on the licensee's root cause, for a lot of  
21 reasons, they thought they had the problem solved. And they  
22 thought that the head was going to be cleaned.

23           There's a lot of thinking going on, a lot of  
24 communications. But the significance of those, which is the third  
25 part of the communications, as we mentioned earlier, wasn't tied  
26 together, all the pieces of information.



1           So we are not, by any means, intending to tell you we  
2 have the problem solved with communications or with root cause  
3 analysis. We still have to work at it.

4           MR. DYER: Going back to the Davis-Besse, looking at  
5 certainly not necessarily the picture but the concept of boric  
6 acid leakage on the head, with the history of flange leakage, all  
7 of the leakage had been attributed to the flange leakage.

8           What we didn't ask ourselves was, could this be masking  
9 something else? And that is that questioning attitude. Not to  
10 take the first answer and ask yourself is there anything that this  
11 problem could be masking that could be worse?

12          And I think that is really the case that occurred at  
13 Davis-Besse on leaking head vessel penetrations.

14          COMMISSIONER MERRIFIELD: Thank you, Mr. Chairman.

15          CHAIRMAN DIAZ: Okay, Commissioner Merrifield.

16          I have one little tiny question and it requires a  
17 risk-informed answer.

18          Are generic communications resolving the issue that they  
19 are intending to resolve? And I know that once you put it out it  
20 does. But does it stay in there for a sufficient amount of time?  
21 Or do we have another risk-informed assessment of that?

22          MR. COLLINS: I was okay until you made that last  
23 statement.

24          CHAIRMAN DIAZ: I understand. You were getting too  
25 comfortable.

26          MR. DYER: Chairman, I don't know if I can give you a

1 risk-informed assessment. But that is one the areas we are  
2 looking at as part of the Lessons Learned Task Force. That was  
3 part of the second task force for medium priority issue is to  
4 develop a strategy for going back to make sure.

5 MR. RICHARDS: I think you have just given me an  
6 additional attribute to add to that task.

7 COMMISSIONER DIAZ: Very good. Excellent. Thank you.

8 And if my fellow Commissioners do not have any  
9 additional comments, I want to thank the staff again. I know  
10 there's a tremendous amount of work that has gone into this. I'm  
11 sure the agency is better for it. The industry probably is better  
12 for it. And I'm sure that the public is better for it.

13 Thank you so very much. We are adjourned.

14 (Thereupon, the briefing was adjourned.)

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