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1 2 U.S. NUCLEAR REGULATORY COMMISSION 3 4 DAVIS-BESSE REACTOR VESSEL HEAD DEGRADATION LESSONS LEARNED TASK FORCE 5 6 PUBLIC MEETING 7 Meeting held on Wednesday, November 20, 2002, at 8 7:00 p.m. at the Oak Harbor High School, Oak Harbor, Ohio, taken by me, Marlene S. Rogers-Lewis, Stenotype 9 Reporter, and Notary Public, in and for the State of Ohio. 10 11 12 PANEL MEMBERS PRESENT: 13 U.S. NRC LESSONS-LEARNED TASK FORCE 14 Arthur Howell, Team Leader, Region IV 15 Robert Haag, Region II 16 Russell Bywater, Region IV 17 Joelle Starefos, Region II 18 Edwin Hackett, Assistant Team Leader, Office of Research 19 Joseph Donoghue, Nuclear Reactor Regulation 20 Thomas Koshy, Nuclear Reactor Regulation 21 Ronald Lloyd, Research 22 23 24 25

MR. HOWELL:

Well, good evening.

My name is Arthur Howell. I'm with the United States
Nuclear Regulatory Commission or NRC. For those
folks in the audience who may not know what the NRC
is, it's the Federal agency that regulates the
various commercial institution on uses of nuclear
energy, including nuclear power plants such as
Davis-Besse. I'm from the NRC's Region IV office in
Arlington, Texas.

For the past several months a number of NRC staff members and I have served on the NRC's Davis-Besse reactor vessel head degradation Lessons Learned Task Force. This task force was formed to review the full scope of regulatory activities related to the Davis-Besse reactor pressure vessel head damage that was identified this past February The task force's activities are separate and March. and distinct from the NRC's Oversight Panel of Davis-Besse, which some of you may be familiar with. This panel meets regularly here, typically about once a month. I believe their last meeting was last week, so this effort that we're here to talk about tonight is separate and distinct from the Oversight Panel.

One of -- there's two purposes that I wanted

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to relate to you all concerning this meeting. The first one is that we would like to provide an overview of the objectives and scope and review results of recommendations of the NRC's Lessons Learned Task Force report. This report was made publicly available last month, and if you had an opportunity, out there we have a graphic that provides some information which you can find the report on our web site.

The second purpose is to provide an opportunity to members of the public to make comments or ask questions regarding the task force's review activities, so what we'd like to do is for the first hour or so of the meeting is to present an overview of the report, and then we'll take a short break and then the task force members and I will come down in front of the orchestra pit, and then we'll have a Q and A session.

Before going any further, the team and I would like to thank all the folks in the audience who can be here to participate in the meeting tonight.

Also, we wish to acknowledge the outstanding support of Mr. Bob Stucker of the Oak Harbor High.

School on making this meeting possible at this facility.

| 1 | I'd also like to recognize Ms. Sonia Eischen. |
|----|---|
| 2 | Where are you, Sonia? |
| 3 | MS. EISCHEN: (Indicating). |
| 4 | MR. HOWELL: Back there. Sonia is |
| 5 | from the State of Ohio. She's works for the State of |
| 6 | Ohio Emergency Management Agency, and she |
| 7 | participated on the task force as an observer. |
| 8 | I'd also like to recognize Mr. Jere Witt, the |
| 9 | Ottawa County Administrator, who is also in |
| 10 | attendance. |
| 11 | There are a number of informative handouts at |
| 12 | the front of the auditorium including copies of the |
| 13 | NRC public meeting feedback form. I encourage |
| 14 | everyone to complete the feedback form and mail it to |
| 15 | the NRC. It's self-addressed and no postage is |
| 16 | necessary. |
| 17 | At this time, I'll ask the other members of |
| 18 | the task force to introduce themselves starting on |
| 19 | the left. |
| 20 | MS. STAREFOS: Joelle Starefos, |
| 21 | Region II. |
| 22 | MR. BYWATER: Russell Bywater, |
| 23 | Region IV. |
| 24 | MR. HAAG: Rob Haag, Region II. |
| 25 | MR. HACKETT: Ed Hackett, Office of |

| 1 | Research. |
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| 2 | MR. DONOGHUE: Joe Donoghue, Nuclear |
| 3 | Reactor Regulation. |
| 4 | MR. KOSHY: Thomas Koshy, Nuclear |
| 5 | Reactor Regulation. |
| 6 | MR. LLOYD: Ron Lloyd, Research. |
| 7 | MR. HOWELL: Thanks. These are |
| 8 | all the task force members with the exception of |
| 9 | Patrick Castleman of the NRC's Office of Nuclear |
| 10 | Material Safety and Safeguards and Elaine Raphael, |
| 11 | our Administrative Assistant, who could not be with |
| 12 | us tonight. |
| 13 | I'd also like to acknowledge that there are a |
| 14 | number of other NRC managers and staff members who |
| 15 | are present in the audience, including |
| 16 | representatives from the Executive Office of the |
| 17 | Executive Director for Operations and the Office of |
| 18 | Nuclear Reactor Regulation. |
| 19 | In just a moment Dr. Hackett will provide an |
| 20 | overview of the Lessons Learned report. This |
| 21 | discussion will include a number of areas including |
| 22 | some background information on past Lessons Learned |
| 23 | review activities, the task force objectives and |
| 24 | scope, task force team composition and attributes, |
| 25 | and task force review methods. I mentioned the |

report availability. We also had some coordination activities with other ongoing NRC reviews. The overall conclusions of the task force, including a summary of the detailed results, and then finally a summary of the task force recommendations.

Following Dr. Hackett's presentation, I will provide an overview of the NRC's approach to addressing the task force's recommendations.

After that, we would like to, again, as I mentioned, open up the meeting to comments and questions from members of the audience. Since there is quite a bit of material, I would request that folks hold their comments and questions until the end of the presentation. I mentioned that we'll take a short break, about five minutes, just long enough for us to reposition in front of the orchestra pit.

For the next part of the presentation, I wanted to mention that the NRC has changed its public meeting policy several months ago in order to enhance public participation in NRC meetings. I know many of you are aware of this change as a result of attending meetings held by the NRC's Davis-Besse Oversight Panel, the so-called 0350 Panel, as well as attending a meeting conducted by this task force in Oak Harbor this past June. This policy brings

consistency by introducing a system whereby the 1 public can participate or can anticipate the level of 2 participation that will be provided for during the 3 upcoming meeting. The NRC has identified three 4 categories of public meetings it convenes. 5 meeting has been designated as a Category 3 meeting, 6 which is defined as a meeting that is held with 7 representatives, non-Government organizations, 8 9 private citizens, interested parties or various businesses or industries not covered by the other two 10 The purpose of a Category 3 meeting is 11 to maximize discussions with the public to ensure 12 that issues and concerns are understood and 13 considered by the NRC. 14 I also wanted to mentioned that the NRC has 15 established a strong track record of conducting 16

established a strong track record of conducting critical assessments of its activities and processes as they relate to significant plant events and problems. Dr. Hackett will discuss this in further detail during his remarks.

I wanted to thank the members of the public who provided input to the task force review areas.

We conducted two public meetings in June and did receive input from the public, and all of the input,

I believe, was factored into our detailed review

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plans.

Before turning the presentation over to Dr.

Hackett, I just wanted to say that the results of our review revealed multiple missed opportunities on the part of the NRC to have identified the problem much sooner than it was ultimately identified by FirstEnergy.

I wanted to indicate that we have made more than 50 recommendations to address the findings and conclusions of our review, that the NRC has already taken action to move forward to address these recommendations.

Finally, in accordance with our normal practice, the information used from this meeting will be made publicly available.

At this time, if there are no further questions or any questions, I'll turn the presentation over to Dr. Hackett.

MR. HACKETT: Thanks, Art.

Hopefully, everyone can hear me okay. Art did such a good job there, I don't think I need to dwell over much on the overview, so go to slide three.

Slide three, basically wanted to say the NRC has previously taken the initiative to conduct these types of reviews for significant issues. These have

been self-critical. Improvements have been made at the agency in response to them, so this is not something that's going to go away. It's something the NRC will continue to do as part of an overall self-improvement. Recent examples include the Indian Point steam generator tube failure, year 2000, and NRC inspections at the South Texas Project in 1995.

Art already differentiated between our role and the 0350 Panel. Our role is really retrospective. It's to look -- take the event and look backwards and see why it wasn't prevented.

Now, we'll go to slide four. It's important to emphasize that this was an independent evaluation. None of the members of the team that you see up here had any significant prior involvement in Davis-Besse and oversight of the Davis-Besse plant, particularly with regard to inspection activities, so the evaluation was an independent evaluation even though it was the NRC conducting the evaluation. The review had these five elements that you see on the slide. This was basically the elements of our charter. The reactor oversight process is primarily the process by which NRC oversees the regulated power plants and the inspection activity basically inspection assessment and enforcement of activities.

I'll go to slide five. Art talked about the composition of the team. It is multi-disciplined, experienced team. I already mentioned no previous involvement in the oversight of Davis-Besse. Art introduced Sonia Eischen, and Sonia was an observer of the proceedings of the task force for the majority of the duration. We did have stakeholder input to the task force review activities. We had a meeting on June 12th here in Oak Harbor where we presented this to the public, and we had a follow up meeting at

We're also chartered to look at regulatory processes, including things like our generic communications bulletins and processes associated with those. Most of the focus of the task force was on the top two elements, but we are also chartered to look at research activities both NRC and industry, International practices particularly those of you who followed this activity, the French program. what were a lot of lessons learned associated with the French activity. The NRC Generic Issues program which is a process by which some, you know, longer term actions and verifications can be followed on by the NRC, and the idea, of course, is that we would identify and recommend improvements, and we have done that in our report.

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NRC headquarters on June 19th in Rockville.

Go to Slide 6. In terms of our review methods, we have two groups. One was based at headquarters. It's largely enacted by Joe Donoghue, to my right, which focused on licensing review requirements and guidance -- industry guidance, the International activities and generic issues.

We had a second group that was primarily focused on the site, activities in Region III that was acted by Bob Haag that really looked at inspection, enforcement, operating experience, generic communications and safety performance.

MR. HOWELL: Excuse me. I just wanted to point out that we actually conducted review activities involving all four NRC regions. There are four NRC regions. One of them is near Dallas, Texas, the one I'm from Arlington Texas. Another is Atlanta. A third is near Philadelphia, and then the fourth is NRC Region III, which is in the Chicago suburbs.

MR. HACKETT: Thanks, Art. The information collection is largely through document reviews and interviews. There were upwards of 35 plus interviews, I think, conducted with the licensee, over 80 with NRC personnel, as Art said,

you know, spread out over the headquarters operation and regions, a significant amount of fact-finding at the Davis-Besse site. There were also some elements that involved contacts with some of the foreign regulatory authorities and also with the U.S. industry.

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Move to slide seven. Some of you may have seen the poster out in the lobby. The report is available on an NRC electronic document management system called ADAMS. The accession number is listed there on the slide and is available out in the lobby. That can be obtained from NRC that way. There is also a public web site with the world wide web address listed there. This report issuance was coordinated with other NRC offices because of ongoing reviews in other areas. As the Lessons Learned Task Force progressed, and probably most importantly for us, the findings of the Lessons Learned Task Force were in issues that were plant-specific were provided on a regular basis to the 0350 Oversight Panel for any appropriate follow up.

Go to slide eight. The overall conclusion that if you have seen -- you have copies of the executive summary available to you and also the report is that the NRC and industry recognized the

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potential for this type of event at least 10 years ago, going back to the initial cracking problem of this type of issue and control rod drive penetrations at the Bugey plant in France. There were boric acid corrosion and degradation events that predated that back almost 30 years. There were industry submittals made to the NRC by the U.S. industry that not only recognized the potential for this, but analyzed the boric acid type of attack that was ultimately seen here at Davis-Besse in approximately the 1993 time frame. The NRC and the U.S. industry's initial conclusion was that the vessel head penetration cracking was not an immediate safety This is due to the flaw tolerance of the concern. Inconel 600 material from these penetrations. the time it was axial cracking that was in concern, and what you get in a situation like that even if those cracks go through a wall, you get a situation called leak before break which means that you would have leakage that would be observed before there would be any catastrophic safety issues at the plant. The follow on to that was that the analysis from there became protracted and lead us to -- to not look at some of the -- some of the other connected items like boric acid corrosion.

The third element there is that the NRC and the licensee failed to learn key lessons from past boric acid events. As I mentioned there was one in particular that dated back 30 years. I think the date was 1969, 1970 at a foreign plant. The corrosion rates for boric acid attack were known to be potentially very rapid, although there was a mind set that developed that dry boric acid crystals on a reactor vessel head were not corrosive. The reactor vessel heads are hot during operation and that there would not be extensive corrosive attack due to that. Corrosion rates for this type of attack are often underestimated. There was also a -- I mentioned these industry submittals to the NRC. conclusion was that if there were corrosion that leakage -- there would be leakage that would be observable in NRC and licensee inspections and it would be found before it ever got to a situation like what happened at Davis-Besse. Obviously, that didn't happen.

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Two other events that I'll mention that happened at Davis-Besse itself in 1993 and 1998 were precursors. They had boric acid attack that was reasonably extensive on their steam generator shell in 1993 and again on some bolting and fastener

materials on a pressurizer spray valve in 1998. The lessons learned from those activities were very similar to what we've seen here for the reactor vessel head degradation.

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Go ahead to slide nine. The bottom line for us was this was a preventable event. obviously not prevented. That goes to our three, what we call, contributing conclusions, which are the three sub-bullets you see there on the slide. goes to Sections 3-1, 3-2 and 3-3 of our report. No. 1 really goes to how we did and how the industry and licensee did with regard to looking at operating experience. Obviously there is operating experience being accumulated all the time at the plants. had some incumbent upon us and the industry and the licensees to access that operating experience and follow up on anything that's relevant. That obviously -- there were some inadequacies in that category here. It's a major contributing cause. The licensee, for their case, and I think FENOC has put out their own conclusions on this and a presentation I first saw in August, but that they failed to assure that their plant safety issues were receiving the appropriate attention. I think Mr. Myers looked at that as a production versus a safety

focus, I think is what's been said before. There was also issues uncovered previously by the Augmented Inspection Team sent out by the NRC and the follow up to that Augmented Inspection Team.

The third element goes to the NRC's performance and it's really in, I think, the team's estimation, it's the NRC's failure to integrate what was a lot of available information in these areas, in particular, boric acid corrosion attack and stress corrosion cracking and some of the inspection assessments that were available to us at the time.

Go to slide 10. We had some other contributing factors, looking at our other guidance and requirements at the NRC and the inspection and reactor oversight process area, some contradictions and differences in our enforcement policy for reactor coolant pressure boundary leakage. We had some difficulties with the ASME code. The American Society for Mechanical Engineers has a code that specifies inspection requirements for these plants. Those inspection requirements were entirely inadequate for this particular situation of the vessel head penetration cracking.

Staffing and resources were problems for the NRC. The Davis-Besse plant was viewed as a good

Over the 1990's, which was early in the 1 performer. 2 1990's, the Region III resources in a lot of cases 3 were diverted to other plants that had been perceived at the time to have more problems. We had some 4 5 regional inspector in region -- region based inspector vacancies and some problems with coverage 6 7 during that time frame over which this degradation occurred. 8 9 MR. HOWELL: Resident inspector. MR. HACKETT: 10 I'm sorry, resident 11 inspectors not the region based inspectors. 12 In terms of communications with the licensee, 13 there were several items that the team found relative to if you follow this issue to bulletin 2001-01 which 14 related to the circumferential cracking at Oconee and 15 some inaccuracies in bulletin response, also related 16 to the nature and extent of the boric acid deposits 17 18 on top of the Davis-Besse head, particularly following their refuel outage No. 12 which was the 19 20 year 2000 and questions about effectiveness of some 21 previous inspections. 22 In the licensing process and implementation 23 area, we, the team, noted a lack of documentation for a decision justifying operation of the plant for an 24 additional six weeks in the year 2002. 25

also some issues with -- just to give you some examples with our project managers who were based at the headquarters operation and their oversight at the plant activities and visits to the plant and actions that they would take in the licensing arena.

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This goes to the operating Go to slide 11. I think I already mentioned the operating experience involving boric acid leakage and The report conducted or the team corrosion. conducted an independent review which is documented Ron Lloyd, to my far right, did most in Appendix E. of that work. It documents a long history of operating experience involving boric acid leakage and corrosion. That was available there for everyone to assess, quite a number of events, and, in addition, technical assessments of that information that were available that were not -- that were not properly followed up on for this particular issue.

Some issues with our generic communication program; in this case we had many generic communications both on the topic of stress corrosion cracking, in particular on those penetrations.

MR. HOWELL: Excuse me, Ed. Could you just take a moment and briefly describe what generic communications are to the folks?

1 MR. HACKETT: Good point. The NRC 2 communicates with the licensees through a variety of mechanisms one of which is the Generic Communication 3 The Generic Communication program, the 4 program. mechanisms that you'll see in there are things like 5 information notices, generic letters and bulletins. 6 7 Most of you are probably familiar with the bulletins 8 that have been issued in reaction to this particular 9 issue, but typically these generic communications are 10 in reaction to events, although they don't have to 11 be, and they most typically request information from 12 the licensees to enable the NRC to get a better 13 picture of what needs to be done in a regulatory 14 sense. They typically do not impose requirements, 15 so it's good to lay that out. Thanks, Art. 16 I guess I was also at this point going to lay 17 out -- what I'm going to try to do in these next few 18 slide with you is just to give you some samples. 19 The report itself can be more than a little bit 20 intimidating, I think is probably fair, although I have been told we're not good objective judges of 21 22 that, of course, we think it's excellent, but it is 23 98 pages in length. There are over 50

recommendations that are documented there, so what

I'm going through here is just a series of highlights

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and some examples for you in some of these areas.

With regard to our Generic Communications

program, as I mentioned, there were many generic

communications on this issue and the boric acid

degradation. What we found in terms of some

systematic weaknesses, we think in some the NRC's

processes is one thing is that we have seen a lack of

verification for licensee responses to these

communications. It's not required by the process

and in a lot of cases the NRC focus was not on these

generic communications for the longer term, now,

let's say many years after they had been issued.

There was also --

MR. HOWELL: Just to clarify, in some cases, there is verification of the generic communications, but I think Ed is focusing primarily on the one's that deal with boric acid corrosion. There was some inspection guidance that was developed, for example, that was in effect optional, so in the case of Davis-Besse this procedure was never implemented over the years, for example.

MR. HACKETT: Yeah, Art's -- one of the examples Art's referring to there is our generic letter 8805, which was issued in 1988. There was some follow up on the part of the Office of Nuclear

Reactor Regulation and some follow up inspections to verify responses to that generic letter, but what didn't happen is many years since I think there was a lack of focus on that particular area so that one was of the weaknesses the team identified.

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I'll jump to the last bullet, looking at our operating experience review with the NRC, we had a significant amount of changes in the agency in the 1990's that related to trying to, you know, achieve increased efficiencies within the budget constraints that we had and some reductions in the size of the NRC staff. Some of that lead to a dissolution of an office at the NRC in 1999. We had an office prior to 1999 that was an office for analysis and evaluation of operational data. This office was originally established in reaction to the Three-Mile Island event and then served as a -- I guess I'll use the phrase, clearinghouse, for looking at operating experience, review and assessment of the NRC, so I think one of the weaknesses the team identified there was a diminished capacity at the NRC for dealing with this type of assessment.

In fairness to the Davis-Besse situation, the degradation that we're talking about here tonight was most likely in progress well before that time frame.

This wasn't something that was operating in a positive direction.

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In terms of slide 12, I won't dwell on that, I think the licensee has covered this in previous presentations of their own, but we have the items that you see listed there, and I think some of these tend to get repeated. There were numerous symptoms and indications of reactor coolant system leakage that were not properly addressed. I think the bottom line there was that the licensee was addressing the symptoms and not the causes for the Some examples that the report goes into leakage. are fouling of the containment air coolers with corrosion products and boric acid deposits and also fouling of the radiation filter element monitors. There was a history of leakage from CRDM flanges and valves and other components and repairs were often

With regard to the boric acid corrosion control program at Davis-Besse, the team found that it was never properly established or effectively implemented in reaction to our generic letter 8805. Boric acid removal from the head was looked at, I think, as more of a -- or what the team thinks is more of a decontamination issue rather than safety

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The cleaning of the head, we found, was issue. limited in a number of instances by pressure brought there from the outages themselves. In terms of owners group and industry guidance, the B&W owners group, as an example, had served a structure modifications that would have enabled better access for inspection cleaning of the head at Davis-Besse that were not implemented at Davis-Besse in the early to mid 1990's. In terms of industry guidance there was an electric power research institute corrosion control handbook for boric acid corrosion that had some -- there are some things in there the team would have differences in or with, but there are some elements that provided some very good guidance on what to do about this issue and what some of the symptoms would be that didn't appear to be internalized by the licensee.

I have mentioned before that there was a lack of awareness both internal and external operating experience, particularly in the area of boric acid corrosion and boric acid corrosion control. In terms of safety related activities just to give a few examples, I think the licensee had during this time frame strained engineering resources, again, they were operating and addressing the symptoms of this

RCS leakage and not the causes. I think we saw a lack of questioning attitude on the part of their inspectors and their inspections and a lack of engineering rigor in a lot of the analysis that were performed over that time frame just as some examples.

Go to slide 13. This slide tries to summarize the NRC's performance. I think I have covered some of these. With regard to reactor coolant leakage assessment, the NRC was aware of these symptoms as the licensee was. There was a lack of questioning attitude, a questioning of some assumptions that the licensee was making at the time, a lack of questioning attitude on the part of our inspection activity. Probably most importantly, the inspections over that time frame and that time frame being probably 1996 and on, inspections related to reactor coolant system leakage were not properly integrated into the NRC overall safety assessment. The inspection program implementation, particularly with regard to refueling outage 12, there wasn't an awareness of boric acid deposits on the part of the resident inspection team. There was a lack of follow up in terms of the NRC on enforcement action that related to the boric acid attack event on the pressurized spray valve in 1998, and there were some

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deficiencies with regard to implementation of corrective actions.

In terms of integration and assessment of performance data, I think again, it points back to the numerous opportunities and missed opportunities on the part of the resident inspector staff in some of the region based inspection assessments, particularly in the area of reactor coolant system leakage to not be integrated over a range of activities and also a certain time period.

With regard to guidance and requirements, it goes both to the NRC inspection guidance not being as clear as it could be in certain cases, some conflicts or differences in our enforcement policy over exactly what to do about reactor coolant pressure boundary leakage, also goes to the ASME code that I mentioned previously and some inadequacies in their inspection, inspection requirements. Staffing and resources --

MR. HOWELL: Excuse me, Ed. Before we go to staffing and resources, I just -- in terms of the first three bullets what we're trying to convey is that the NRC knew a whole lot about the symptoms and indications of the leakage that in this case that resulted ultimately in the degradation of the vessel head.

Now, at the time, of course, they didn't know that the source was the nozzle, but we conducted a

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number of inspections over the years, primarily in the 1999, 2000 time frame, 2001, in which the NRC was cognizant of some of the operational problems that were being evidenced by the symptoms of this problem, but we never pieced all that information together to ultimately identify the source, and so that's essentially what we're trying to convey is that we did know a lot, we followed up on some of these indications, but, ultimately, we never pieced all the information together. MR. HACKETT: In terms of the recommendations now on slide 14, the report has an Appendix A, which documents the detailed recommendations that the team came up with. believe there are about 51 of them. What we tried to do here is just stay at a fairly high level and give you these eight categories in which the majority of those recommendations fall. First on the list is inspection guidance. One of the things that we're looking at hard there or one of the recommendations went to revising inspection guidance with regard to RCS leakage and differentiation of RCS leakage and RCPV, RCPV leakage and RCPV degradation. I think

it's fair to say the team found that some of the guidance in that regard is not as clear as it could be and there are some improvements that we could make in that area. In terms of the operating

experience --MR. HOWELL: Excuse me, Ed. Also obviously we made some recommendations to address future inspections of boric acid corrosion control I mentioned earlier, the NRC had an programs. inspection procedure to conduct essentially programmatic reviews of licensee boric acid corrosion control programs. This procedure was optional. was rarely implemented not only at Davis-Besse -- it was never implemented, but nationwide it was rarely implemented over the 10 plus years that it was in force, and so one of the recommendations is to go back and revisit the decision to cancel that procedure, and, in addition to that, we made a number of other recommendations. I believe fully a third of our recommendations are in the inspection guidance We made some recommendations pertaining to area. how we go about conducting assessments of corrective action programs, employee concerns programs, safety conscious work environment, as well as a number of other areas including nozzle inspections, too.

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MR. HACKETT:

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That's one of our

2 longer recommendations went to the operating experience category and operating experience 3 assessment, particularly with regard to looking at 4 the longer term -- the longer term performance, and 5 I'll just read to you from some of that actually, but 6 we're looking at some directed recommendations in the 7 area of looking at the agency's capability to retain 8 operating experience indignation and perform longer 9 term operating experience reviews, also to evaluate 10 thresholds and criterion guidance for -- we talked 11 12 about these generic communications earlier for issuing and following up on these generic 13 communications. We're looking at evaluating the 14 effectiveness of our generic issues program. 15 didn't talk a whole lot about that tonight, but 16 that's an element of the longer term aspect of this, 17 and also evaluating our effectiveness internally with 18 the dissemination of operating experience to the 19 ultimate end users within the NRC. We didn't talk a 20 21 whole lot about the foreign experience, but there was a wealth of experience that was available to the NRC, 22 particularly from the French program that was not --23 I use the word again, internalized, as well as it 24 25 could have been or not may be disseminated as well as

1 it could have been. With regard to the --2 MR. HOWELL: If I could just add 3 one other example of --4 MR. HACKETT: Sure. 5 MR. HOWELL: Sorry. We also made a 6 recommendation -- as you could imagine over the 7 years, the NRC has issued many, many generic letters and bulletins on a variety of safety issues, 8 9 different technical areas, and so one of our 10 recommendations is to go back and revisit on a sampling basis some of those generic letters and 11 12 bulletins that were issued in the past to verify 13 whether or not the actions that were indicated to be 14 done actually addressed the problem, so we think that's one of our more important recommendations in 15 this area. 16 MR. HACKETT: I mentioned the ASME 17 code earlier. The American Society of Mechanical 18 19 Engineers has a code of requirements for inspections 20 for nuclear power plants. It's called Section 11 of the ASME code. The NRC endorses Section 11 of the 21 22 ASME code through our regulations. 10CFR50-55A. 23 One of the things we found early on with these types 24 of inspections is all that was relied upon for 25 evaluation and leakage from nozzles or potential

cracks in vessel head penetration nozzles were visual examinations. These visual examinations could be done from quite a distance, these were examinations they refer to as VT-2 examinations. In certain cases, the nozzles themselves could be obscured by the insulation. In other cases they could be obscured by boric acid deposits which again when you go back to the mind set that caused part of this as a problem, so it goes to the inadequacy of the ASME code inspection requirements, and the ASME code is currently working on revising those requirements. Some of the NRC staff are working closely with them on that with the hope that somewhere within probably the next year we'll have some revisions there that the overall inspection requirements.

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We had a fairly long recommendation that went to NRC's programs and general capabilities, including training and experience, but also went to questioning attitude or lack of questioning attitude on the part of our inspection activities, an inspection follow up, and also, in particular, the issue of reactor coolant system leakage and reactor coolant pressure boundary leakage. Also going towards communicating

problem, that was something that wasn't really viewed hopefully will act in a positive direction, improving

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to the staff, expectations regarding inspection

follow up and maintaining the appropriate awareness

and surroundings when conducting inspections.

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and surroundings when conducting inspections. Leakage monitoring and requirements, monitoring requirements and methods was an area that the team had an awful lot of discussion on. this -- the way this particular degradation is inspected for, as I mentioned, is visual. One of the problems that is incumbent in that situation is the fact that you cannot make a connection between how seriously cracked or degraded these nozzles are and how much leakage is evident there. There is not a one-to-one correlation, so inspecting visually just for leakage can become very problematic. to say it's not helpful, but in terms of going from there to the situation with how serious a potential degradation I have is very problematic, so we have several recommendations that go towards re-examining the NRC requirements in this area. Our technical specifications basically prohibit reactor coolant pressure boundary leakage, but differentiating between reactor coolant pressure boundary leakage and unidentified leakage from the reactor coolant system say that might be from flanges or other bolted and flanges connections is very problematic. Basically

our recommendations in this area are going towards trying to provide better assurance of no reactor coolant pressure boundary leakage.

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In terms of technical information and quidance, I think Art mentioned that several times. There is a wealth of information available on stress corrosion cracking in this particular case and boric One of the issues there is acid degradation. appropriate training of the NRC staff to be focused on these issues and looking. In this case the recommendation goes not just to the situation, but well beyond. There are many penetrations of the reactor coolant pressure boundary in a nuclear power plant. A lot of them are Inconel 600 or stainless steel. These materials are susceptible to these degradation phenomena. One of the recommendations goes towards making sure the NRC staff, and particularly the inspection activity has the appropriate awareness in that category.

NRC license processes I discussed before, but there were some areas I maybe didn't mention in the case of some contributing factors that, you know, we need to do better on in terms of our project management effort at the NRC headquarters. We have project managers that oversee the activities at the

plants, at all the plants, at headquarters, and a 1 couple of cases here at least --2 MR. HOWELL: Ed, I just want to 3 4 add, from a licensing prospective --5 MR. HACKETT: From a licensing prospective, not an inspection prospective. In that 6 7 case, in the case of Davis-Besse there was a significant amount of turnover in this project 8 9 management staff during the 1990's, more than we would have liked to have seen. There were less 10 frequent site visits by the project manager and staff 11 during that time frame also which goes contrary to 12 some of what we like to see in terms of the NRC 13 There is also an issues with review of 14 guidance. 15 topical reports. These topical reports I mentioned 16 earlier were actually, you know, quite descriptive in terms of analyzing the potential for the type of 17 degradation that was seen at Davis-Besse ultimately, 18 19 and they were reviewed by the NRC staff, but I don't 20 think connections -- appropriate connections were made particularly between the boric acid degradation 21 and the stress corrosion cracking issue. 22 23 The last piece here and then I'll turn the presentation back over to Art regarded previous 24 25 lessons learned reviews. We have an Appendix F in

the report that did a -- I think what we call a cursory look at previous lessons learned, of the lessons learned reviews that the NRC has conducted to look for some common themes. As you'd expect in any kind of structural or human failure situation, there are some common themes, so one of the recommendations that the team made was for the NRC to conduct an effectiveness review of these lessons learned activities to make sure we're learning the lessons from the lessons learned and that these things aren't just going to sit on the shelf, and with that, I think we'll turn it back to Art and talk about some future plant activities with the -- for the following.

MR. HOWELL: Thanks, Ed. The next slide, as I mentioned, the report was issued last month and so many of you may be wondering, well, what will became of these recommendations, and the NRC's approach to understanding the issues from a regulatory perspective at Davis-Besse is really a two step approach, and the first step is what we're talking about here tonight, and that is to conduct a lessons learned review by senior staff members who are familiar with the subject matter who are independent in the sense that they've had no

I just wanted to point out that even though we have made 51 recommendations, many of them -- not many, but some -- some of the more important ones are already being addressed. For example, the NRC has already issued another bulletin which would suggest that more stringent nozzle -- vessel head nozzle inspections may be needed, and, in fact, a number of plants throughout the country are in refueling outages right now and many are conducting more stringent inspections as recommended in the bulletin

significant oversight at Davis-Besse activities and to identify issues and make recommendations, and we've done that. The next step is already underway and that is the agency has formed a -- a team of senior executives, very high level team to not only assess our recommendations and review them, but also really to go through the whole entire report to see if there are other issues that may need to be addressed that we didn't make recommendations to address, and so that effort is underway, has been underway for a number of weeks, and it's expected that -- that the senior management review team will complete its activities in the near future, in the next few weeks or certainly before the end of the year.

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and additional cracking has been found.

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Now, the degradation to the extent that occurred at Davis-Besse has not been found at other plants, but the nozzles that leaked at Davis-Besse, similar nozzles have been found if not to be leaking to at least have been found cracked and at some point may have resulted in leakage had they not been detected through these more stringent inspections.

Also the NRC is well underway in plans to obtain additional information from other reactor plants, nuclear plants throughout the country in terms of their boric acid corrosion control programs and once that information is obtained, then additional future actions will be identified as appropriate, and then, finally, we mentioned that we've made a number of recommendations pertaining to inspection quidance and some of that guidance is already in the process of being revised. inspection procedure may not be issued yet, but the individual procedures are being reviewed and revised in a number of instances already, so, in other words, action is being taken even though the senior management review team is reviewing all of the recommendations in the report and will make its findings available to the public before the end of

the year.

So, with that, we are at the end of our prepared remarks and what we'd like to do now is move onto the question and answer phase, and the team -- we're going to come down to the front of orchestra pit, we have a microphone down there to give everybody an opportunity to ask questions, make comments, and then we'll adjourn the meeting after folks have had an opportunity to do that. I think the schedule has us going until about 9 p.m. We'd like to try to keep to the schedule.

There's really two methods in which one can ask a question or make a comment. One is to come to the podium here, identify yourself, and then ask your question, make your comment. Another is, we have some cards, is that right, some folks, if you would prefer, you can write your question on a card, you can pass it up, and then we'll read the question.

We're going to give priority to questions that are within the scope of the task force. If there are other questions that are outside of the scope of the task force, if we're not in a position to answer them, then we'll try to obtain the contact information so we can get back to you at a later date, and, finally, since we are scheduled to go

1 about another hour and 10 minutes, there's a number 2 of folks in the audience, you want to just be mindful 3 of giving everybody an opportunity to ask questions, and, in particular, I'd like to extend an invitation 4 5 to the folks that live near the community to ask 6 their questions first, so we can take a very short 7 break, five minutes, gives us an opportunity basically just to walk down in front of the orchestra 8 9 pit, and then we'll resume the meeting. Thank you. 10 THEREUPON, a brief recess was taken. 11 Okay, we'll go ahead MR. HOWELL: 12 and resume the meeting. At this point we do want to 13 go into a question/answer phase, so I invite members of the audience to come up to the podium or pass 14 15 their cards forward. 16 MR. WHITCOMB: Good evening to the 17 members of the panel. My name is Howard Whitcomb. 18 MR. HOWELL: Good evening, Howard. 19 MR. WHITCOMB: And I am a resident of 20 Oak Harbor. I have had an opportunity to read your 21 report and make some comments. It is a -- I mean, 22 it's a monumental effort in terms of number of pages, 23 and I don't intend to get into the nitty-gritty 24 I'm going to give you a couple of prepared details. 25 comments that I've made in terms of some things that

I think, perhaps are missing from your report.

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The contents of the NRC's Lessons Learned Task Force report clearly indicates the NRC is given greater weight to the technical issues surrounding the degraded reactor vessel head than it has to the problematic NRC oversight issues regarding the Davis-Besse Nuclear Plant. The findings of the task force even attempt to provide a rationale that the NRC's actions over the last decade rise to the level of "excusable neglect." It appears that the Lessons Learned Task Force has chosen to ignore the realities of the relationship which has existed between the NRC and FirstEnergy managements over the last 17 years. The problems at the Davis-Besse Nuclear Plant resulted from a lack of technical and management integrity. While the findings in the report attempt to address the technical issues with some vigor, it fails to forthrightly address the apparent loss of management integrity regarding both the FirstEnergy and NRC staffs.

On June 12th, Mr. Howell, as team leader of the NRC's Lessons Learned Task Force, you stated that as part of your review, the team would review the allegation history pertaining to the Davis-Besse facility and determine if the NRC had appropriately

facility and determine if the NRC had as MARLENE S. ROGERS-LEWIS & ASSOC. REPORTERS
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dispositioned those allegations. Nowhere in the report is there any discussion about a review of the allegation history of the Davis-Besse Nuclear Power Plant. Had an appropriate review of the allegation history been performed, the team would have found at least nine separate allegations regarding the occurrence of specific reported improprieties at the Davis-Besse Nuclear Plant during the period of time from January 1993 to present. The team would also have discovered that the regional NRC office improperly dispositioned a certain alleged material false statement made by Toledo Edison management personnel to the NRC in September of 1988. It is inconceivable that a thorough review of the allegation history at Davis-Besse could possibly overlook the significant dispositional error on the part of NRC management. The Lessons Learned Task Force did not include the allegation history at Davis-Besse in its final report because either: The Lessons Learned Task Force did not conduct a review of the allegation history at Davis-Besse as was promised on June 12th or The Lessons Learned Task Force members

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were not qualified or adequately competent to

determine whether the disposition of the past allegations at the Davis-Besse facility had been performed in accordance with Federal law, or

3. The Lessons Learned Task Force deliberately ignored the allegation history and the NRC's prior dispositions at the Davis-Besse Nuclear Plant.

Any one of the three choices is problematic.

First, the failure to perform a review of all -- a

review at all is contrary to the expectations of the

public, particularly since the public's expectation

is based on specific assertions made by you, Mr.

Howell, on June 12th.

Secondly, the use of unqualified or incompetent inspectors is unlikely in light of the number of personnel employed by the NRC.

Finally, the most likely possibility is that the NRC has reviewed the allegation history at Davis-Besse and has chosen to sidestep making a critical assessment of the NRC's mis-handling of past allegations at the Davis-Besse Nuclear Plant. Such a decision violates the public's trust and confidence in the NRC's ability to fulfill its responsibility regarding the protection of the health, safety and welfare of the public.

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The executive summary of the report further claims that the managers and staff members of the NRC's regional office responsible for the Davis-Besse Nuclear Plant oversight were more focused on other plants that were the subject of increased regulatory oversight. The report further claims that the distracted management attention contributed to staffing and resource challenges impacting the regulatory oversight of the Davis-Besse Nuclear Plant. The NRC is fully aware of the problematic history at Davis-Besse over the last 17 years. cannot now feign ignorance of the problems or blame events at other facilities as the basis for why aggressive action was not focused at the Davis-Besse Nuclear Plant. The warning signs of waning problems were either apparent or presented to the NRC staff through the established program for processing and investigation -- investigating allegations submitted to the NRC. What the Lessons Learned Task Force failed to identify in its report is that the established program for processing allegations was inadequate to intervene and prevent the current inability of the typical Davis-Besse worker to raise genuine concerns and safety issues without fear of What has again been demonstrated is that reprisal.

when the process fails, reactor safety is compromised.

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The lack of management integrity at both the Davis-Besse Nuclear Plant and the NRC is the root cause of the current problems at Davis-Besse. The reactor vessel head degradation is only a symptom of that problem. Over the last several months, FirstEnergy's management has continued to violate quality assurance requirements and generally accepted maintenance practices. FirstEnergy's management continues to mislead and deceive the public about matters of significant general interest regarding the Davis-Besse Nuclear Plant. The lack of any recommendations in the final report, Section 3.3.6 titled "Davis-Besse Nuclear Power Station Communications" clearly shows that the NRC either does not consider the lack of management integrity as being a foundational building block in assuring reactor safety or it refuses to consider it at all. Either way, reactor safety is compromised.

It is time for the NRC to discontinue the practice of affording FirstEnergy management disparate and preferential treatment in comparison to the rest of the industry. FirstEnergy's deleterious actions over the last 17 years clearly deserve more,

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not less, critical treatment, particularly since FirstEnergy's management has conceded that at times they have placed production demands over reactor safety. It is time for an independent review of the NRC and Davis-Besse management issues as requested by the 2-206 petition submitted earlier this year. This review should focus on an independent and critical assessment of the integrity of both the NRC and FirstEnergy managements. Additionally, it is time that the legislative branch of the Federal Government investigate the continued and sustained ability of the NRC to fulfill and execute its responsibility in an independent and unbiased manner, and without alternative motive other than ensuring the health, safety and welfare of the public. Thank you.

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you.

MR. HOWELL: Thank you, sir. Mr.

Whitcomb, you raised a number of issues over the last few minutes, and, forgive me, but we'll try to respond to them. One of the things that I would suggest if you're willing is that perhaps if you have some time that we can get together so we can more fully understand your issues. We can either do that after the meeting or the next day or by phone, but in the short term, what we'd like to do is try to

address some of the points you just raised. 1 MR. WHITCOMB: 2 I will make myself so that we can set up some kind of a meeting. MR. HOWELL: Thank you. First, I the management lapses that we identified by reviewing material that dated back some 10, 12 years prior to the event.

Secondly, I would point out that we did conduct a review of the allegation history, not only for Davis-Besse, but the other FirstEnergy plants, and Mr. Haag is going to address the scope of that review. Bob?

MR. HAAG: Our intent was never to look at every allegation at -- through FirstEnergy sites and try to verify that they were handled What we were doing is we were looking for properly. similarities and allegations related to our mission and by submittal to the task force. As far as boric acid corrosion with problems with the way the utilities were handling boric acid corrosion program, allegations dealing with nozzles, and that was our scope of looking at the allegations, not to look at every one in detail and verify that they were handled properly, so I'm not sure where you got that impression that we were looking at all of them, you know, in that level of detail. That was part of our inspection charter. We had a very detailed charter, you know, where we looked at a number of areas. The reason we didn't have anything in the report is

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because our review did not identify any problems 1 2 related to previous allegations that would have brought light on the issue at hand. 3 THEREUPON, Mr. Haag conferred with Mr. 4 Howell. 5 MR. HAAG: The one allegation you 6 7 mentioned, the 1998 allegation, we did some review of that, some of the letters and correspondence that 8 9 were going back and forth between the alleger providing the basis for that. We reviewed that, 10 and, you know, that did not relate again to what we 11 12 were doing, but we did look at that because there was 13 a request from our management to review it, and there 14 was nothing we saw in that correspondence and the 15 issues that were brought up that, you know, that 16 would give us reason to look at it in more depth and 17 try to provide some view of whether it was handled 18 properly, but, again, we did look at that in more detail than the other ones. The other ones were 19 20 basically just a review of the issues. We had the 21 region that the sites were located provide us a 22 historical listing of all the allegations and provide 23 us enough description where we could understand what 24 the issue was, and I think we went back 10 years. 25 MR. HOWELL: At least.

| 1 | MR. HAAG: As far as looking at |
|----|--|
| 2 | what allegations had been provided at the three |
| 3 | sites. |
| 4 | MR. HOWELL: And, again, after the |
| 5 | meeting we'll get with you, Mr. Whitcomb. |
| 6 | MR. WHITCOMB: (Nod indicating yes). |
| 7 | MR. HOWELL: Any other questions? |
| 8 | MS. SPAULDING: My name is Helen |
| 9 | Spaulding, I live in Port Clinton. |
| 10 | MR. HOWELL: Good evening. |
| 11 | MS. SPAULDING: And I have several |
| 12 | questions. I know that you have a dual function |
| 13 | oh, if you lean on this it moves. I know that you |
| 14 | have a dual function at the NRC to both regulate and |
| 15 | encourage the use of nuclear power, and the building |
| 16 | of nuclear reactors. |
| 17 | MR. HOWELL: Actually, that second |
| 18 | statement is not part of our role, we do not |
| 19 | encourage the use of |
| 20 | MS. SPAULDING: Oh, when did they take |
| 21 | that out? |
| 22 | MR. HOWELL: When the agency was |
| 23 | split apart from the atomic energy agency and |
| 24 | their |
| 25 | MS. SPAULDING: The atomic energy |

1 commission was, is the NRC, so I would submit that 2 you still probably are charred with both at least 3 according to the regulations that I have been 4 reading. Perhaps, there have been updates more 5 recent than 2002. 6 MR. HOWELL: Right, it's not part 7 of our charter. 8 MS. SPAULDING: It wasn't in the copy 9 I read; however, shortly after the shut down and 10 permitting Davis-Besse to continue operating despite the findings in March until it was time for their 11 scheduled shut down, you gave Davis-Besse your Golden 12 13 award after the inspection. Why the hell did you do 14 that? 15 MR. HOWELL: Can you help me out in 16 terms of Golden award? Are you referring to the --17 MS. SPAULDING: I am referring to the 18 award that you all gave Davis-Besse right after the 19 inspection for their efficiency and operation of the 20 plant. It was referred to as the Golden award. kind of goes along with their little sign that has 21 22 been saying six million hours with no lost time 23 It now says seven million hours with no lost time unless, of course, the media is around then 24 25 they turn the little sign off. Even here on the

first page of the update that we picked up today in 1 2 the first paragraph, Containment Extent of Condition Inspection, Part 2, found that plant personnel were 3 properly trained and qualified to identify components 4 5 and systems inside the building that could be 6 affected by boric acid deposits and corrosion. 7 used adequate tools and followed adequate quality standards and guidance, so how come they had a hole? 8 9 Paragraph 3, same page, plant personnel 10 performing these inspections weren't properly trained and certified. 11 Excuse me, but that seems to be in 12 contradiction. Would you explained that, please? 13 MR. HOWELL: I can't, because I 14 don't know what document you're referring to, ma'am. 15 MS. SPAULDING: This one, right there. 16 I've underlined the parts. Help yourself. 17 MR. HOWELL: Roland, Jan, I think she's referring to the NRC Update. Perhaps you can 18 19 provide some clarity. 20 MR. LICKUS: Yeah, what you're 21 referring to is a recent inspection that was just 22 completed that looked at the individuals that were 23 doing work by the Utility to identify components and 24 systems within containment. MS. SPAULDING: Were those the 25