U.S. NUCLEAR REGULATORY COMMISSION
FIRST ENERGY NUCLEAR OPERATING COMPANY
PUBLIC MEETING

Meeting held on Tuesday, December 10, 2002, at 7:00 p.m. at the Camp Perry, Clubhouse #600, Port Clinton, Ohio, taken by me, Marlene S. Rogers-Lewis, Stenotype Reporter and Notary Public in and for the State of Ohio.

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PANEL MEMBERS PRESENT:

U. S. NUCLEAR REGULATORY COMMISSION

John (Jack) ~~Grove~~ Grobe, Chairman, 0350 Panel

William Dean, Vice Chairman, MC 0350 Panel

Christine Lipa, Branch Chief, Region III

Christopher (Scott) Thomas,
Senior Resident Inspector - Davis-Besse

Jon Hopkins, Project Manager

MS. LIPA: We're just about ready to begin. Well, good evening and welcome. This is the U.S. NRC, the Nuclear Regulatory Commission's public meeting today with members of the public. We held a meeting earlier today, and we'll give you a summary of what we discussed earlier, but the main purpose of this meeting is just to inform anybody -- interested stakeholders of the NRC's Oversight Panel activities, and up here, the five of us are members of the NRC, and also there is other NRC in the audience, so I'll just go through briefly.

Scott Thomas is the Senior Resident for the NRC at the Davis-Besse facility.

I'm Christine Lipa, and I'm the Branch Chief, and I'm stationed out of Region III, which is near Chicago, Illinois.

Bill Dean is the Vice Chairman of the Oversight Panel, and he's stationed in Rockville, Maryland.

Jack Grobe is the Chairman of the Oversight Panel, and he's stationed in Region III.

And then Jon Hopkins is the Project Manager, and he's stationed in Maryland also.

Next slide shows that one of the goals of this meeting is to receive comments and questions

from members of the public, and to ensure that we can hear everybody's comments today, we ask that you limit your comments or questions to five minutes. Now, we have a lot of people tonight, so that will be important as we go through, and then we'll follow the format we've used in previous meetings where we'll start with local members of the public first before we go onto other members of the public that are interested and want to provide comments or questions to us.

I want to mention a few handouts that were in the foyer on the way in. One of those is the NRC's newsletter for the month of December, and it provides a summary of the vessel head degradation issue, as well as some recent NRC Oversight Panel activities. There is also a feedback form that you can use to provide feedback to us on the format of this meeting, how the sound system works, if you can see the slide, which I'm thinking already we're partially blocking it, but any kind of feedback, we would really appreciate it. This is the first time we have used this facility, it's a very nice facility, but we need to work out the bugs and make sure it works for us going forward.

Also in the foyer there was a copy of the

utility slides from the earlier meeting today. There were some of those left if you wanted to grab one of those, and, you know, get a sense for what we discussed earlier. Also there's a summary of the Lessons Learned Task Force report out there that you can review.

The next thing I would like to go through on the agenda is a summary of the vessel head degradation issue, and we have some pictures that we can show you. Scott Thomas will walk through parts of that.

MR. GROBE: Everybody that's got an empty chair next to them, raise your hand. There's a lot of folks in the back here, why don't we just take a minute, and you folks can come up and find a seat. I don't want to -- and there's some seats up here in the front if you want to get that close to us. There is no splash zone here so you don't have to worry about that. Let's try again, there is about 10 more people in the back. Raise your hand if you got a chair next to you. Come on up, guys. There's seats up here. You just want to leave early, huh? Okay. Okay, good enough.

MS. LIPA: Okay. Thank you, Jack.

MR. THOMAS: How many are here for the first time, this is your first public meeting?

THEREUPON, several audience members raised their hands.

MR. THOMAS: What I'm going to do for the people that aren't familiar with the issue and with nuclear power process in general, we have five or six slides that we're going to talk -- go through very briefly and just give you a general idea of the issue that happened at Davis-Besse.

What we have here is a very simple depiction of what the power plant -- what makes up the power plant. This area here is the containment building, which is comprised of an inner containment, which is an inch and a half steel liner, kind of like if you picture a Thermos, the glass portion of the Thermos would be the containment, and then the outer building is what you see -- is the shield building, that's what you see from the road as you drive by. It's approximately two and a half feet thick, rebar reinforced structure. Inside containment you have the primary systems which consists of the reactor where fission occurs and generates heat. It's transferred to the steam generators where water is boiled which makes steam which drives the turbine

which drives the generator which makes electricity. One thing to note is that this cycle is a closed cycle, and this cycle is a -- is a cycle, and these two don't mix. This is hot, high pressure radioactive water, and this is non-radioactive water and steam cycle, so I think that's it for this one.

Next slide, please. This is a picture of the top of the head. It's comprised of -- this is the reactor vessel head. These are the control rod drives, and these are the nozzles that penetrate the reactor head. Where you have this circled area is where the degradation occurred. We have a better picture of that, I think.

MS. LIPA: Yeah.

MR. THOMAS: One area -- prior to one of the things that lead to the inability to observe and clean the reactor head is this is a very tight clearance. This is an insulation piece. This is a steel assembly, and the only way into this area is through rectangular -- they are called weep holes, mouse holes -- they have a number of names which are positioned right about here. Since then there has been inspection ports cut here around the periphery, but one thing that lead up to the issue was difficulty to be able to inspect this area here.

Next picture. This is a depiction of a nozzle. My pointer gave out. This is a nozzle itself. This is the head area. The way this is put into the reactor head is, it's a compression fit, the nozzle is a compression fit in the head with the J-weld here, and that's how it's held in place, and that's about all we get out of this picture.

Next slide. This is a picture of the reactor vessel head post 2000 outage. What you're seeing here is these are the studs and the bolts that hold the reactor head on. This is the transition between the head to the service structure, and remember when I just -- the last slide I talked about the weep holes, these are the weep holes. They're about five by seven, about this size, (indicating). What you see here is a -- boric acid combined with iron oxide that has come from the cavity area that was on top of the head, flowed down the top of the reactor head, down the side of the head and collected on the reactor flange area.

Next slide, please.

MR. COLLINS: Oh, sorry.

MR. THOMAS: This is a -- excuse me, a drawing of the cavity itself. This is the reactor head. This is the nozzle penetration. This

is another -- this is nozzle 11. This is nozzle No. 3. As you can see, it doesn't have -- the nozzle's been removed here, but this area is a -- a depiction of the cavity itself, so that was the shape of the cavity. All that was left was the cladding on top of the reactor vessel right here.

Next slide. And, excuse me, this is an actual picture of the cavity itself. Go back to that one real quick. This where nozzle 3 would have gone in, and the cavity itself goes back this way toward nozzle 11, and there's been a number of descriptions of the cavity, anything from football size to milk bottle size to -- a number of descriptions. A football size would be an accurate description.

Next. This is just another picture of the cavity. I don't have anything to add for this one.

Any specific questions on this what I have shown here? This is just a brief overview of the issue itself.

MS. RYDER: I had a question about one of the photos.

MR. THOMAS: Yeah.

MS. RYDER: The one with the red rust down the side.

MR. THOMAS: Yes.

MS. RYDER: How is it that your inspectors didn't know that that photo existed?

MR. GROBE: That's a good question, Amy. The -- why don't you introduce yourself?

MS. RYDER: My name is Amy Ryder, I'm with Ohio Citizen Action group.

MR. GROBE: There's really, I think, two answers to that question. As I'm sure you can imagine there is roughly a thousand people that work at an industrial facility this size, and there's a lot of activities that go on, and we sample different activities, and we didn't choose during the course of our day-to-day work to look at this specific inspection photograph that was taken in April of 2000, I guess.

Second answer is, back last fall in the, I think it was September through late November into December time frame, we had quite a long dialogue with FirstEnergy employees regarding the condition of the reactor head. It was following up the issuance of a bulletin. A bulletin is a document that we use to communicate with a number of reactor licensees. In this case it was all pressurized water reactors,

Davis-Besse is a pressurized water reactor. We asked for information that would assist the NRC in understanding the condition of the head, and that photograph was not provided. Quite a bit of information was provided, but that specific photograph was not provided by the company.

MS. RYDER: Do you find that acceptable? Doesn't it seem like they were intentionally hiding the problem?

MR. GROBE: That's kind of a loaded question. The folks that do inspections are engineers. They're not investigators. Whenever we come across a situation that doesn't seem quite right to us, we have an office called the Office of Investigations, and these are all former criminal investigators, and in this situation it didn't seem quite right to us that some of the information didn't come to our attention, and we initiated an investigation. That investigation is ongoing, and when it's completed we'll know the results.

MS. RYDER: I'm not an engineer or investigator and looking at that photo, you'd think the photographer would have said, look, guys, I think we've got a problem here.

MR. GROBE: It's, like I said,

when things don't appear quite right, we ask our investigators to take a look at it, and they're in the process of doing that. When they complete their investigation, that will be public knowledge.

MS. RYDER: What do you think of it?

MR. GROBE: I'll have to wait for the investigation results, Amy. Thanks.

MR. THOMAS: Anything else about the basic description? We'll have a question and answer session later on, but I can answer any basic questions about what I have talked about here. Sir?

MR. DUSSEL: Yes, I was wondering --

MR. GROBE: Could you approach the microphone, please?

MR. THOMAS: And please state your name, too, for the stenographer.

MR. DUSSEL: My name is Tim Dussel, and I was wondering -- I've read articles where I believe some 20 years ago Davis-Besse was told to open up those inspection holes so inspections could be done and a lot of things I've read about inspections, they keep saying that the lid was clean as far as people could see. I think that's kind of

a loaded question there.

Is there any reason why they went 20 -- almost 20 years when they knew that those inspection holes should have been opened up so you could get in to see or inspect the rod ends?

MR. THOMAS: Well, it wasn't a requirement for them to install this modification, so -- plants have operated successfully without it, so --

MR. GROBE: Because of the difficulty in inspecting the head, as I think some of you -- Jay, could you put up that drawing of the head? Yeah, that one.

MR. COLLINS: Yes.

MR. GROBE: As you can appreciate, because of the curvature of the reactor head, it would be difficult to inspect, and the way that was done was with a camera that was remotely controlled on a pole, and the -- Davis-Besse internally initiated a modification to install inspection ports. They're about one foot diameter ports that are much higher than service structure. As Scott indicated earlier, they are up here. There is seven reactors that are very similar to Davis-Besse, and they're manufactured by Babcock & Wilcox Corporation. Five

off those seven had installed the inspection ports, two had not, and Davis-Besse was one of them. The decision was based on their belief that they had the ability to inspect reactor heads sufficiently from the weep holes, so it's not like they were directed to do this. It was an enhancement, and they chose not to do it at that time.

MR. DUSSEL: I just don't understand how an inspection can be done if you can't see. You know, that strikes me very peculiar. I just don't understand how all these inspections have been done and I keep reading and reading where the lid was clean, and how could anyone say it was clean if you can't see if it was clean and 900 pounds of boric acid taken off? 900 pounds of boric acid, how many burlap sackfuls would that be?

MR. GROBE: It's -- maybe we should give a little bit more background because it's clear that some of you don't have the depth of knowledge that others may have.

There's requirements both through the American Society of Mechanical Engineers as well as through internal procedures at the site that require certain types of inspections. Boric acid is a constituent of the reactor coolant and pressurized

water reactors -- there are roughly 70 pressurized water reactors in the United States. Every one of them has boric acid in the reactor coolant. It's an additive that is used to help control nuclear reaction. Because boric acid -- the solution of boric acid that is actually in the coolant is very, very mild. It's not corrosive. The concern is the -- if there is a leak in the reactor coolant system, wherever the leak exists, the water which has boric acid in it -- a very mild solution can exit through the leak and the water immediately vaporizes, and leaves a higher concentration of boric acid on the surface, so the -- back in the late '80s, the NRC required licensees not only to have the American Society of Mechanical Engineering standards that deal with potential corrosiveness of boric acid, we required licensees to explain to us how they were going to control boric acid corrosion because it's a -- an artifact of this type of reactor, but you need to be able to do that, so each licensee put into position a procedure that whenever there was a discovery of boric acid, it appears to be a white powder when it is left, a white residue. Whenever you see that you have to clean it off, and it's a requirement through a number of different

regulations, you have to clean it, you have to clean it down to bare metal. You have to clearly inspect the metal to make sure there isn't any corrosion. If there is corrosion, you have to repair it or in some cases you can justify why -- if it's a very mild pitting or something like that, you can justify that that's an acceptable leave as is. Davis-Besse did not follow those requirements, and through the course of the '90s -- from the mid '90s to the late '90s they left boric acid residue on the reactor head, and I think your number is one that I've heard before, and I don't know that anybody knows the quantity of boric acid that was on the head with precision, but it was in the hundreds of pounds of boric acid. That obstructed the view of the individuals that were trying to inspect the head. Those individuals didn't follow station procedures and the American Society of Mechanical Engineering requirements that required them to clean that boric acid, and internal documents documented that it had been cleaned and that the head was inspected, and there was no damage, and, in fact, that had not occurred. All of these issues are being looked into, but the fact of the matter is, this was a completely preventable situation, and that photograph -- Jay, put up the

picture that shows the red rust. This is a clear indication that there is corrosion going on. It's rust. It's iron oxide, and that was not adequately responded to by the staff at Davis-Besse. These are things that happened in the past, and they were not corrected, and these are cited as violations in our inspections. There's an investigation ongoing into why it happened, and once we find out why it happened, we will take appropriate actions.

MR. DUSSEL: What do you think appropriate actions would be for falsifying records? Evidently, there was --

MR. GROBE: We need to have the results of the investigation before we can make that determination.

MR. DUSSEL: Is Davis-Besse going to be allowed to operate and start running before the investigation is done?

MR. GROBE: We need to get our arms around what those issues are and make sure that NRC adequately dealt with before we restart.

MR. DUSSEL: Thank you.

MR. GROBE: Uh huh.

MS. LIPA: Okay, thanks, and those are good questions, but what I want to do

before we get into the question and answer period, we're actually going to provide for everyone's benefit who was not here earlier today a summary of the afternoon meeting with FirstEnergy, and then the next item on the agenda following that summary is questions and answers, so everybody will get a chance to ask their questions, it's just let us give a summary of the afternoon meeting and Bill will do that and following that, we'll get into more questions and answers. Thank you.

MR. DEAN: Thanks, Christine. Hopefully I'll make this short, so we can get to the answers and questions. We do have a fairly large audience tonight, but it is important, one of the purposes of this meeting that we have it in the evening with the public is to give you the opportunity to be informed as to the types of things that are transpiring, the types of things that the NRC and this Oversight Panel is doing relative to monitoring the activities at Davis-Besse, and so it's important to do a recap of today's meeting.

We discussed, first off, some of the activities that have been ongoing in the last month or so from the NRC's perspective. There are two inspections that have been completed and inspection

reports issued which are available -- publicly available. One of those is the containment extent of condition. That report generally found that the licensee has done a good job of evaluating their containment in terms of the spread of boric acid and its impact on containment components. There are some unresolved issues that we're still looking at. There is some work that is still ongoing that we will continue to follow, but that inspection report basically documents what the licensee has done to date.

The other one is the reactor pressure vessel head replacement activities. Basically the effort to cut the hole in the shield building and containment and to move in and out the replacement reactor vessel head and move out the old one and get that in place, ready for installation, and basically that inspection report determined that the licensee did a pretty good job on all of those activities, maintained good positive control of what was going on. Some of the things that are ongoing, there are inspections ongoing that are not yet completed, will not be completed because completion of them is contingent upon activities that the licensee still has ongoing relative to things like program reviews.

There is a number of programs that the licensee has endeavored to evaluate and assess those programs, for example, boric acid corrosion control program, the corrective action program, and so on, that were instrumental in this event occurring, and so they've gone back and done an in-depth review of those programs. We are inspecting their efforts in that area and they still have some additional work to do so we will not complete our inspection until they are done. Another area is system health. Obviously, we felt it was important, as did the licensee, that they had to assess the health of other safety systems in the other plant not just the reactor vessel head to assure themselves, assure us and assure the public that they don't have other issues of safety significance, and so those activities are ongoing. We have not completed our inspection efforts in that regard because the licensee still has a certain amount of work to do in terms of their system health assurance efforts. The other issue and one of the things really that Scott didn't address in terms of the event, but really is kind of at the core of the issue that occurred here and this is failure in terms of managerial organizational behavior at Davis-Besse. Some of you may hear this referred to as safety

culture issues. We have a substantial part of our assessment process to look at what is the licensee doing relative to organizational effectiveness and human performance and then, of course, we have the Resident Inspector and the Senior Resident Inspector on site that do daily observations of ongoing activities of the licensee, and so those are all ongoing, continuing NRC activities that have yet to be completed.

One meeting of note to discuss or that occurred over the past month; on November 26th, we had a meeting in the headquarter's office in Rockville, Maryland to discuss with the licensee their activities regarding the bottom of the reactor vessel, the picture that you saw, the oxide and the boron that collect at the top of the reactor vessel. Over the course of time some of those materials found their way down the side of the reactor vessel and you could actually see, some of you that might have gone to our web site -- unfortunately, we don't have any pictures to show you --

MS. LIPA: Yeah, we do.

MR. DEAN: Do we?

MR. COLLINS: Give me a minute.

MR. DEAN: Okay, Jay is going to

pull up a picture what the bottom of the reactor vessel looks like. Basically, they had some distinct trails of both iron oxide, rust, as well as boric acid trailing down and collecting to the bottom of the reactor vessel, and when the licensee pulled off the insulation to see where those trails led, the bottom of the reactor vessel head had notable trails of boric acid deposit and rust, and so that raises the question is -- are those items at the bottom of the vessel a result of just wash down, things that have collected from the top of the reactor vessel, or are they indeed -- and there you see an example of the bottom of the reactor vessel. This is after it was cleaned. Go back to that previous one, Jay. This is an example of what the collection looked like at the bottom around one of the penetrations, and there is another example, you see how it was collected, so that raises questions. Is that leakages perhaps from these penetrations, or is it, indeed, just wash down and trails from all of the materials, the 900 pounds of boric acid, and so on, that were at the top of the reactor vessel, and so the licensee has yet been unable to definitively determine that, and so they came to the headquarter's office to meet with a number of our engineering

specialists there to describe their plans to try and assure that these penetrations at the bottom of the reactor vessel -- which are not the same at the top, they operate at a lower temperature, they're much smaller. There is not a history of leakage or cracking from those penetrations both internationally and domestically, but it still a question that has to be answered, and so they described their plans to do testing. Basically, what they intend to do is at some point next year bring the plant up to normal operating pressure, normal operating temperature and have it sit there for seven days, and then go in and do a close visual inspection of all those penetrations. That is why it's important if you go back to the one that was clean, shows a clean head, they would be able to go in there and do a visual inspection, and see if there was any of these little boric acid crystals that Jack was talking about, these white crystals. That would an indication that perhaps there might be a small leak, and so we had that meeting on November 26th, and I don't think that meeting summary is yet available, but I think -- are the meeting slides?

MR. HOPKINS: The slides are up on the web site.

MR. DEAN: Okay. The meeting slides are up on the web site, so if you were to access our web site, you could see the licensee's presentation. That was a pretty important meeting.

The other thing that came out of that meeting is that the licensee described their plans to install a sensitive leak detection system. It's called a flus, F-L-U-S, which is a system of German design, and that's been used at some European facilities. It hasn't been used here in the United States which is basically a very sensitive moisture detection system which they would install at the bottom of the reactor vessel. They hope to be able to do that before this extended outage period is completed, so they described their plans to do that.

Okay, to talk about what the licensee described in terms of their restart readiness plan, the other major purpose of our meetings -- we come here every month and meet with the licensee is to get an update from them on where they are in terms of all of their activities related to their Return to Service Plan. In the area of Management and Human Performance, which I said was a very important area, they talked about some of the things that they're doing in terms of enhancing communications and

training. In particular, they have accomplished some things over the past month relative to specific training for supervisors and managers relative to assuring a safety conscience work environment. They also described -- they have a fairly active -- what they call their management observation program and the purpose of that is to get managers out into the field to look at ongoing activities and work and to assure themselves that the types of things that they have developed in terms of expectations for performance and how they expect work and activities to be accomplished, are there safety standards being met by the work force, and, generally, they describe a fairly satisfactory results from their management observation program thus far. They do have issues relative to things like job planning, housekeeping, some documentation issues, but, in general, they felt that the results have been fairly satisfactory in terms of how well they believe their safety standards and expectations are being translated to the staff.

The other major area they talked about is -- one of the issues that has emanated from looking at the licensee's root cause is the role that their operations department has played relative to establishing safety standards at the plant, and I

think the licensee has determined, and we would ~~degree~~ agree that their operations department did not take a leadership role in the past in establishing safety standards, and it's something they want to embody into their organizational philosophy, so they described some of the ongoing activities that they have in terms of developing this approach, bringing the operations department to the floor in terms of leading safety standards, and they describe some of the activities that their operations department is getting involved in and taking a greater role, things like plant safety reviews and maintenance work activities.

The second area they discussed talked about some of their near goals relative to activities to support potential plant restart, and we talked to some degree about some near term activities mainly to support this testing that I talked about of the bottom of the reactor vessel head to assure themselves and assure us that those penetrations are not leaking, and what they described is that basically beginning in about the middle of January or so they hope to be able to begin the evolution of reloading the fuel in the core, putting the reactor vessel head, the new reactor vessel head on top of

the core, performing an integrated leak rate test of the containment. Of course, they got this big hole to move the reactor vessel heads in and out. They have to assure themselves that containment is leak tight, so they have to do what's called an integrated leak rate test, where they pressurize containment and observe it for leaks, and then eventually bring the actual reactor plant up to normal operating pressure and temperature using basically their large reactor coolant pumps and the pump heat that that generates to bring the plant up to temperature and basically do a seven day stay at that and then go and look around evaluate the plant for leaks. Also to give them an opportunity to test a number of these systems that they have been working on, so they described their plans to do that. There is a lot of work that remains physically before the plant can even be at the position to be able to do that. They have a number of valves that are being worked on to assure leak tightness. They're doing some major work on some of their reactor coolant pumps to assure that those are going to be leak-free, and there is a number of issues that have emerged from all of the work they have done to try and identify all the issues that -- basically what they call mode

restraint. In other words, they can't change their mode of operation until they complete a lot of these activities, and so there's hundreds of those issues that still need to be resolved, so the licensee still has a lot of work on their plate to even get to that point.

Third area we talked about with the licensee was their containment health. Basically they have completed for the most part their discovery activities in terms of identifying all of the issues in containment that would have been a result of the boric acid and leakage, and so they basically have about 900 plus issues. They have not yet identified or reviewed all of those issues to determine what the corrective actions are; however, they do have some major work in progress, in particular, rebuilding the containment air coolers, expanding a screening area for the emergency sump, and, basically, recoating and painting the entire containment and some of the core flood tanks.

Let's see, system health reviews, I talked about this earlier as an area that the NRC has ongoing inspection activities. They still have a lot of work to do in that area, though, they have completed many of the reviews and are awaiting

management to sign off basically, and approval of the results of those review, but there's a number of key design issues that have emerged from those reviews that await resolution. We, matter of fact, will have a meeting with the licensee probably on December 23rd in the Region III office to discuss some of their plans and activities as result of the lessons learned and the findings that they have had from their system health assurance, so that will be a pretty key meeting for us to get a better feel for where they're going in terms of system health.

Plant programs is an area where much of the review work is done. I talked about that as an area the NRC still has ongoing inspections; however, the licensee is further ahead in assessing their programs and revamping them, and so we will probably be able to complete some of our inspection activities hopefully in January regarding that, and then, finally, some of you may have the opportunity -- I noticed earlier some of you were looking at -- over on the side there, the licensee put up some of their performance metrics that they were using to basically monitor progress at the plant, and one of the points that they try to make is that if you looked at those, basically those show that they believe they're at a

point where they've completed the majority of their discovery, and by that, I mean, basically they're identification of issues that need to be resolved whether they're physical issues or program issues and that their work off rate is now starting to exceed their discovery, so, basically, that's kind of a critical point in terms of plant recovery and a plant that's in an extended shut down, when you complete a lot of the work in terms of discovery and now your work off rate exceeds that, so you start to see a decline now on all of the work that's on their ~~plant~~ plate, so they have kind of reached that turning point, but that doesn't mean they're anywhere near being ready for restart. That's a lot of work that remains on their plate just from a physical point of view, not to mention where are they in terms of safety culture assessment which is a big issue we raised with them and something we want to make sure that they discuss with us at our meeting next month. We want to hear some fairly detailed discussion about their activities related to safety culture, how are they monitoring and measuring that, and so that's an issue that we will have some detailed discussion with the licensee next month, so that's probably a little bit longer than I wanted to take, but it was a fairly

lengthy meeting and a lot of good discussion. Jack, do you have anything to add?

MR. GROBE: Thanks, Bill, that was a really good summary. While Bill was talking -- I already heard the meeting, so I wasn't listening very closely, but I was trying to think of what might be good information to share with you. We're involved in this day in and day out in a great amount of detail and sometimes we get lost in the trees and when folks like you come out to find out what's going on, you're not in the level of detail that we are, and we sometimes lose sight of the fact that some foundational information might be helpful. I wanted to just spend three or four minutes and tell you what this is all about because it probably appears kind of strange.

Over the last several years we've put in place a reactor oversight program for all of the operating reactors in the United States that has a number of elements that are foundational to its success, and that reactor oversight program is comprised of two principle things; one is performance indicators, each licensee in the United States, each operating utility is required to report on a quarterly basis to the NRC a set of performance

indicators and we've specified what those indicators are and then collect the data, report them to us and we double-check in the field if that data is actually accurate and representative of the true performance of the plant, and going along with that set of performance indicators is our regular inspection program which is comprised of roughly 2000 hours of inspection by both resident inspectors, like Scott Thomas, who is the Senior Resident at Davis-Besse, as well as regional specialists that travel around to different reactor sites. They're experts in various technical disciplines, so the performance indicators and the inspection program work together. We call that our routine reactor oversight process. Underpinning or foundational to that reactor oversight process is several items, several things. One is the belief that this industry has been around for a while and it's a mature industry. If you look at the safety performance of the nuclear industry over the last decade to 20 years, it has steadily improved and the nuclear plants in the United States are safer today than they have ever been in the past, so it was based on that fact that it was a recognized appreciation that this is a mature industry, and then there are three things that we call crosscutting

issues. One of them is the safety culture of the plant and that is absolutely pivotal to the safety performance of the plant. The second one is the corrective action program. Sometimes you've heard people talk about a learning organization -- you can call it a number of different things, but it's an organization that is mature enough to listen to what's going on in the plant and react to it, so that if on day in and day out they find issues, they don't ~~hind~~ hide them, they don't ignore them, they deal with them. We call that the corrective action program, and the third one is capable and competent staff. There's two aspects, two of those three crosscutting issues that the revelations that occurred last March came through loud and clear, those foundational elements didn't exist, and that is the corrective action program. A number of the issues that you saw in the pictures tonight, those issues were known to members of the plant, corrective action documents called condition reports were initiated and then not adequately resolved. The corrective action program was not functioning effectively, and the second thing is it came through clearly and the company reported to us that they had lost focus on safety, that they were putting production pressures ahead of safety

issues. Because of those issues the agency, the NRC, Nuclear Regulatory Commission, determined that this plant could not -- within our context, we couldn't apply the routine oversight program to Davis-Besse. We have a special -- you might call it a circuit breaker in our inspection program. It's a procedure. Sometimes you have heard at this panel referred to as the 0350 Panel. That's a procedure. It's Manual Chapter 0350. It describes for those situations when you come into a circumstance that is not appropriate for our routine inspection program, it sets out a set of criteria, so this panel has become the routine inspection program for Davis-Besse. In situations like this, the agency brings together a group of experts from very diverse backgrounds. Bill Dean is the Senior Executive in our headquarter's offices. I'm a Senior Executive from Chicago. Jon's an expert in licensing. Christine is an expert in inspection, the Resident Inspector, and there is a number of typical staff and managers that are on this panel, and we replace the routine oversight program because the commission has lost confidence -- had lost confidence in Davis-Besse that they could effectively function and we could provide effective oversight with our normal

inspection program. So what this panel done is observe day-to-day activities at the plant, and we structure an inspection program that's appropriate for Davis-Besse in its situation today. We were chartered in April, I guess, and one of the expectations of the panel is to identify those key issues that are necessary for resolution if the plant is permitted to restart -- would be permitted to restart. We call that a restart checklist, and we've published that. It's been revised once since it was published. It contains approximately 15 or 20 specific items on it covering systems, programs, people, management structures -- a whole plethora of different types of issues that this panel has determined need to be adequately addressed prior to this plant being permitted to restart. Our responsibility as a panel is to provide oversight to gain the resources necessary for both headquarters and the regional offices. We've had inspectors from our other regions as well as headquarters, contract inspectors out here doing inspections at the plant and provide oversight to those inspections and make sure that before this plant would be permitted to restart, that we are comfortable that it could be restarted and operated safely. The process for that

decision -- because I know many of you might be interested in that -- is that this panel would do its work. If we come to the conclusion that we think the plant is ready to restart, then we have to present that to our bosses. My boss is Jim Dyer. He's a regional administrator in Chicago, the Region III office. Bill's boss is Sam Collins, Director of the Office of Nuclear Reactor Regulation. Sam has responsibility for every reactor in the United States. Jim has responsibility for the Region III reactors, and we would make a recommendation and have to defend that recommendation to those two gentlemen and only then would a decision be made by the NRC that the plant could restart.

The focus of this panel is safety. There have been a number of questions that have come up over the past several months about schedule pressures and things of that nature. Schedule is not our business. The licensee is going to make whatever progress they make. We're going to monitor that progress with appropriate inspection resources and oversight, and as they make progress, we're measuring that progress through our independent inspection. We will evaluate whether or not sufficient progress has been made and whether the plant can be operated

safely. We're not at that point yet. As Bill pointed out, there's a lot of work yet to be done, so I wanted to give you a little bit of that foundation of what we are and why we're here. There are some other groups working on this project and Amy brought one to light a few minutes ago, and that is our Office of Investigations, completely independent, they're looking at things that happened before March and they're looking at why they happened, so that investigation is ongoing. Our Inspector General is looking at us. They report to Congress because we did not perform up to standard either. Our inspection program didn't discover this issue that was progressing over a number of years, so we've got a number of different groups looking at us. Our Inspector General is looking at our performance. In addition to that, Bill mentioned we have a Lessons Learned Task Force that was a group of NRC experts that were brought together that have nothing to do with Davis-Besse, and they're looking at -- they were chartered to look at a number of the programs and behaviors of the Commission, the staff and the Nuclear Regulatory Commission and why we missed this issue, and they are making recommendations for improvement in our programs, so there's a lot of

different activities going on, but this panel itself is responsible from April onward to look at what's necessary to have confidence that this plant can operate safely and measuring whether or not the company is approaching those standards, and if at some time in the future they get there, then we'll be able to have confidence that the plant can move forward because we will have done an extensive amount of inspection above and beyond our routine type of oversight.

So, Christine, why don't I give it back to you, and you can moderate questions.

MS. LIPA: Sure. Let me just cover a couple administrative items, first of all. It occurs to me that since there are so many people, you might not have all gotten handouts, but I wanted to let you know that our web site, which is ~~www.nrc.com~~ www.nrc.gov, has a lot of documents. Go to that web site and there is a Davis-Besse link. This is our December newsletter, and on the back page it has contact information for our Public Affairs Officer, I wanted to point out Viktoria Mitlyng in the back and her information, her phone number and her E-mail are all on here if you want to contact her with any questions.

Also, we have question cards for anybody who does not want to come up to the podium and ask questions tonight, we have question cards, or you can contact us by E-mail after this meeting and we'll try to get back to you and answer your questions.

The other thing I wanted to pointed out is this meeting is being transcribed. We have Marlene here transcribing the meeting, and what we have been doing for our public meetings for at least six months or so now is, we have a transcript that is available about four weeks after the meeting that we put on our web page. And, again, because it's being transcribed when you come up to the podium to ask a question, speak your name clearly for the record and then ask your question. Try to keep it to five minutes, please. That's important tonight with so many people here, and that's all I have for that. I also wanted to point out a few other NRC folks. We've got Roland Lickus in the back.

MR. LICKUS: (Indicating).

MS. LIPA: And he's the State and local Government Affairs from the Region III office. We also have Nancy Keller. She's our resident office assistant.

MS. KELLER: (Indicating).

MS. LIPA: We have Jay Collins, he's running the slides for us today. He's an engineer on rotation from headquarters.

MR. COLLINS: (Indicating).

MS. LIPA: And there are some other NRC inspectors in the room as well, and then there's Doug Simpkins. Doug Simpkins is in the back. Doug is the Resident Inspector, and he and Scott are the two NRC inspectors that are at the plant day-to-day, and the next -- so next we'll start with public questions and comments, and I wanted to started with the young group of folks here since you had your hand up earlier, if you guys wanted to go first that would be all right.

MS. SHAW: I'm a little bit shorter. Hi. My name is Lori Shaw, and I'm here with a group of students. I wanted to make a comment and ask two questions.

My first comment is -- and I'm sure this was not intentional, but I saw a lot of students' eyebrows go up, and the comment was, maybe you don't have the depth of knowledge, and my comment when we were at another meeting a comment was made by an NRC person, well, maybe you couldn't read that off the web site, and I just wanted to make a comment that

that can be intimidating to people in the audience who want to get up and voice their opinions.

The two questions that I have is, one, for the NRC, these students who have been doing some research, they're 10 to 12 year old -- 13 year olds, sorry, Sam, students -- and before this was announced they had dug up that for 10 years there had been warnings to the NRC and the industry that these nozzles would leak and France had done moisture detective devices, and so the question is why didn't the NRC, when they knew it was a problem, take prevention ahead of time, and why would a group of students come up with a recommendation like this before industry leaders?

MS. LIPA: Okay. Well, first of all, thanks for your comment at the beginning. The issue of the nozzle cracking has actually been known for several years in the United States as well, and the NRC has issued generic correspondence which is generic letters and bulletins to the utilities to be on the lookout for this. I don't think it was until recently that it was -- became a big problem, like it has become. Previously, it was just a known phenomenon that could occur so the utilities were expected to do inspections and be on the lookout for

leakage.

MS. SHAW: The second question was, I was concerned that maybe I had heard that wrong, was that after you did a start-up trial and let the plant run that they would do visual inspections, and it seemed like that was the thing that got Davis-Besse in the problem in the first place because only through ultrasonic technology and the moisture tapes can we really tell if there is a problem, and so how would that provide accurate information if after start-up if they are only going to do visual inspections?

MR. DEAN: Good questions, Lori. Let me embellish first the answer that Christine gave you relative to, you know, what did the NRC know about cracking, it happened in France, how come we didn't do anything about it, and, in fact, we did do a number of things about it, but I think if you look at the Lessons Learned Task Force report that the independent group that Jack talked about and the NRC developed, one of the things that they identified was that while the issue was known in the United States, okay, the approach the United States took was one of increased leakage monitoring, and the fact that what was observed in France and what was observed here

early in the United States were cracks that were of an ~~axle~~ axial orientation which were not considered other than being potential for small leaks of reactor coolant which could be cleaned up and repaired if they occurred, were not a safety issue, and it wasn't until an inspection was done at Oconee, as a result of NRC activities for plants to be conscious and look at this, well, they detected cracks that were of a circumferential nature. In other words, they were now the -- around the nozzles, where if those things were to progress to a through wall position, could then if there were some sort of transient cause ejection, so then now you have a significant safety issue, and that was in the late '90s, 2000 where that issue was discovered at Oconee, and so from that point on, the NRC's posture relative to this cracking issue changed to one where we started issuing a -- as Jack said, bulletins, which are very significant correspondence from the NRC that provides specific guidance to the industry on what to do and how to treat the issue, so we did not approach it the way the French did. The French said, we'll just replace reactor vessel heads. The agency and the industry took an approach that this is not a significant safety issue because of the axial orientation of the

cracks. It wasn't until it became circumferential that that elevated the NRC's safety posture.

MS. SHAW: Thank you.

MR. GROBE: Bill, why don't you explain why a circumferential crack is of greater concern?

MR. DEAN: Jay, can you throw up that --

MR. COLLINS: Yeah, wait a second.

MR. DEAN: Okay. This is a diagram of a typical control rod drive mechanism nozzle, and what I was referring to is that the cracks that have been observed in France and the ones we observed in the United States were basically cracks of an axial orientations, basically length-wise along that nozzle, and all that would really accomplish or create if this crack became through wall is that you could get leakage and you would get some seepage of boric acid and reactor coolant up here, and as Jack noted earlier once that reactor coolant hits the top of the head, the moisture evaporates and you leave the boric acid crystals, and the boric acid crystals is basically a white powdery substance really are relatively benign as long as they're not wet. Okay? The issue that

occurred here at Davis-Besse was that because of the boric acid that was not removed -- I think Tim noted earlier, okay, that was not removed, they had a crack develop, but you had a cap as you will of boric acid that prevented this seepage from the axial crack in the nozzles from getting up here and evaporating, and basically what you have was basically a formation of a boric acid, kind of a liquid pool of boric acid that is very corrosive, and that's what you saw the results of in that cavity, and that's a direct result of the failure of the licensee to effectively clean the head and be able to inspect and evaluate this area. Okay?

Now, to answer the question about circumferential, if you were to have a crack -- a through wall crack in this orientation, you could actually have through a pressure transient separation, which would cause ejection, and now you would have a loss of coolant accident. You would have coolant now coming out through this hole in the reactor vessel and so that's when we elevated our safety -- when we started seeing cracks in a circumferential orientation. Now, we have this concern about possible separation and ejection of the nozzle.

MS. SHAW: Thank you. I'm not sure after some of the comments the students will feel comfortable getting up and asking stuff, but maybe after the meeting they can share some of their questions and concerns with you.

MR. GROBE: I hope so, and I also appreciate your first comments. I wasn't trying to be critical of anybody in the audience. I was being critical of ourselves. Sometimes we lose sight because we're so meshed in this and engrossed in everything that's going on, we lose sight of making sure we communicate effectively, and I wanted to make sure we provided sufficient background of information so that you could understand what was going on.

We just received a comment, and I'm glad somebody is using the question forms. Let me read it, and I think I understand the question, and I can answer it.

Acknowledging that Davis-Besse information sharing related to the head condition in late 2001 was not accurate, please characterize the licensee's recent reporting and sharing -- out of batteries? -- please characterize the licensee's recent reporting and sharing of information related to the 0350 process.

Has Davis-Besse provided accurate timely information to support this review process? The answer to that, to the best of my knowledge, is yes. We have extensive interaction with the licensee almost on a daily basis both from headquarters and the regional office, and I have no experience where information complete and accurate information wasn't provided on a timely basis, and there has been a lot of information sharing, so I appreciate that question.

MS. LIPA: Okay. Are there any other local members of the public that would like to come up and ask a question?

MS. MUSER: Hi, my name is Mary Jo Muser. I have a brief comment and then a couple questions.

The fact that FirstEnergy omitted pictures of the deterioration of the reactor head to the NRC and that the NRC admits that the regulatory process relies heavily on trust between the NRC and the nuclear industry, is not sure that the rust recently found on the bottom of the reactor is not going to entail more cover ups on the safety of this plant in regard to the industry. The NRC's failure to order an immediate shut down when leaks were suspected back

in November of 2001, given the fact that air filters had to be routinely changed every other day due to clogging from airborne rust particles means you failed to comply with your own regulations.

Why did you reject an independent panel to review the safety of this plant? Let me finish. Also, seeing how nuclear experts agree that if there had been a core breach, people as far as way as a 500 mile radius would get sick of cancers. How can we feel safe with Davis-Besse's 10 mile radial evacuation plan.

Also, have you ever refused a plant from reopening, and who is going to be held accountable for all this?

MS. LIPA: Okay, well, I'm not sure I can keep track of all the questions, so let me talk a little bit about the 2.206 petition that you referred to, and that was a request by a group of people to have an independent panel, and the NRC considered that request. We also, as Jack described earlier, when the plant was placed under the 0350 process which is a completely different process of inspection than the reactor oversight process, that was one of the bases for why we did not believe an independent panel was warranted because there is

additional oversight as a result of the Oversight Panel, that's what most of these people are part of the panel, so that's the answer to that question. I'm trying to think -- what was one of the other questions?

MS. MUSER: Basically by failing, you failed to comply with your own regulations, so I don't understand why. You really didn't answer why an independent panel -- I think the public would have felt more safely about that. Also about the evacuation plan. A 10 mile radius I don't feel is very effective. I think everybody else would agree with that.

MS. LIPA: Well, I don't have the details on that, but I know that that was all built into the licensing basis for the plant, and that was all reviewed before the plant was licensed to operate here, the basis for the 10 mile. I can't get into a lot more specifics on that.

Anybody else on the panel that has more on that?

MR. GROBE: Sure.

MS. MUSER: I mean, if you lived 11 miles away and there was a breach of the core, would you evacuate?

MR. GROBE: Let me make sure we're operating from a sound technical basis here. There's a number of barriers in a nuclear reactor from the release of radioactive materials. The first barrier is the ~~field~~ fuel pellets themselves. The vast majority of the radioactive materials created in a nuclear reactor is contained within the ceramic pellet of that fuel, and it never leaves that pellet. Each pellet is about the size of the tip of your little finger.

The second barrier is the fuel pin itself, and there is a lot of these fuel pins in the reactor, and each one of those is designed to be leak tight.

The third barrier is the reactor coolant system, and this is the barrier that was degraded at Davis-Besse. It wasn't breached. It was degraded, it was significantly degraded.

And then the fourth barrier is the containment structure, and Scott described earlier the containment structure and how it's built at Davis-Besse. Each of these barriers is capable of preventing the release of radioactive materials. Three of those four barriers were still completely intact. The fourth barrier was degraded, so in the event of loss of a coolant accident, that's what we

call if the reactor coolant system had been breached we call that a loss of coolant accident, if in the event of a loss of coolant accident there are a number of safety systems that are designed to mitigate that type of accident, so you have these other barriers, but you also have systems to mitigate the consequences of a ~~lot~~ loss of coolant accident. Those systems -- there is two of everything. We call that redundancy, and in many cases the specific pieces of equipment where there is redundancy or different, we call that diversity, so that you might have a turbine driven pump and a motor driven pump. We try to design things that way, so there's an extraordinarily low risk of what we call common cause failure which would have both systems fail simultaneously when you need them.

The only reactor accident that I'm aware of that has resulted in significant contamination, a great distance from the plant is the Chernobyl accident. The reactor designs ~~and~~ in the Soviet Union at that time did not have a containment structure. The Chernobyl plant was a very, very significantly different design. It's a graphite moderated gas cooled reactor, so it's a very, very different reactor than what we have in the United States.

There has been an accident in the United States where there was a loss of coolant situation. That was the Three-Mile Island. At Three-Mile Island, there was no release of radioactive materials of any consequence, and that's because these other barriers provided the defense in-depth that is designed into the safety of nuclear plants in the United States.

Now, I don't want anyone to get the impression that what I'm doing is -- what I'm saying is diminishing the importance of what happened at Davis-Besse. The violations that occurred and the degradation of reactor coolant system is very significant, but there are a number of barriers that are there to prevent the release of radioactive materials and to mitigate the consequences of an accident. The basis for the 10 mile emergency planning zone is founded in good health physics, and health physics is a study of radiation effects on people, and it was concluded that that was an appropriate distance to mitigate the consequences of an accident should it occur.

MS. MUSER: Have you ever refused a plant that was deemed unsafe from reopening?

MR. GROBE: There have been a number of plants that have not reopened once they

have gotten into this condition. Those decisions were made based on finances by the company that operated the plant. An example in our region, in Region III, the midwest would be the Zion plant outside of Chicago. It got into a situation like this, had a restart oversight panel, an 0350 Panel, and the company eventually determined that it was not in their best interest to restart the plant. What I said earlier and I'll reiterate here because it's very appropriate, the focus of this panel is safety, and the plant will not restart unless it can be restarted safely. That could take a short period of time, matter of months, it could take a matter of years depending on how the utility approaches the effort and what kind of progress they make. We're here for the duration, and the plant won't restart unless we're comfortable that it can restart safely. If prior to that point in time the company decides not to restart, that's their business decision and is of no concern to this body.

MS. MUSER: Thank you.

MR. THOMAS: We have a question that was passed up that I'll answer real quick.

The question is, how could the NRC let Davis-Besse operate with the six inch hole in the

reactor? I guess my quick answer is we wouldn't let it operate with a six inch hole even the degradation that was found, we didn't know that this degradation existed at the time the extension was granted to let it operate until mid February, so the short answer to your question is, we would not let it operate in this condition, and it would be required to be shut down. Hopefully that answered your question.

MS. LIPA: Come on up.

MR. BLATT: Good evening. I'm John Blatt, a resident of Port Clinton, Ottawa County. Davis-Besse is just down the beach from my home on Westshore Boulevard in Port Clinton. I'm not a Clevelander or a Columbus resident. I'm here as a local. I'm former Mayor of the Village of Put-in-Bay, about 10 miles downwind from here. I was a nuclear trained operator in the Navy in the '60s and remain current in the industry since then. I believe nuclear energy is absolutely essential to our need to have abundant, low cost electricity in the area for economic use and growth. Suggestions from some to convert this plant to fossil fuel or to close it down are ill-conceived. Coal and oil create pollution which we cannot afford in this tourist area. The trucks or trains to bring the

fuel would further congest the region. Nuclear power is state of the art and is the least expensive way to provide the services to us.

I understand that the operator and the Nuclear Regulatory Commission made some mistakes and the newspapers are correct and feel confident that the present safeguards would make this a very safe electrical generating facility. I worked with the Nuclear Regulatory Commission in the past and have nothing but confidence and respect for their procedures. Do not let us become another California where well intentioned misguided individuals permitted a state not to prepare for its electrical needs. Thank you.

(Applause).

MS. LIPA: Thank you for your comments, John.

MR. SCHRAUDER: Good evening. My name is Bob Schrauder. I'm the Director of the Support Services Department at Davis-Besse, and I wanted to answer a question that the woman prior had, and, first of all, I cannot, will not take responsibility for decisions that were made by past management. I want everybody to understand that when we talk about the management at Davis-Besse the management is

different, so when you talk about the management at the plant now, you're talking about me, and so I take it personally, as you would, so I won't respond to what previous management did, what information they had, why they made the decisions that they will, but I do have an answer as to how do we know that the -- what we're looking at at the bottom vessel will be dealt with openly and honestly and that we will relay accurate information to the very best of our ability to the NRC, and the answer to that question is because I'll make sure we do, and I will put my integrity up against anybody's in the room or in the country. I believe very strongly nuclear power and I believe very strongly in Davis-Besse, and the answer to your question is, you have my word, and that is all I can give you, is my word that I will make sure that to the very best of our ability all of the knowledge that we have relative to the bottom of the reactor vessel will be shared with the public and with the NRC and will be dealt with appropriately.

MS. LIPA: Thank you, Bob.

(Applause).

MR. WHITCOMB: Good evening, Ms. Lipa, gentlemen. My name is Howard Whitcomb. I'm a resident of Ottawa County, I'm a former employee of

Davis-Besse, and I was there when Mr. Schrauder was there. I'm also a former NRC inspector.

My prepared comments tonight support what Lori said earlier. It's clear to me that the people in Northwest Ohio are a lot smarter than the people in Lisle, Illinois want to give them credit for. Over the last eight months, the NRC has made claims regarding this restart checklist and its intent to assure the public that FirstEnergy corrects the glaring mismanagement problems at Davis-Besse. Noticeably absent tonight from your presentation is any update as to where you are with that restart checklist. Over the last eight months, the public has had to endure repeated attempts by both the NRC and FirstEnergy to mislead and confuse the public regarding important issues at Davis-Besse Nuclear Plant. In other words, the comments raised tonight about the information or the lack of apparent information. A lot of the public gets their information from what's provided to them by the NRC, and if they're not up to speed it's because somebody has carefully and craftily put information out that they only want the public to know about. I have personally raised some issues over the last several months, and based on recent articles provided by the

local news media, it is clear that the NRC continues to fail in its efforts to regain the public's trust.

In a recent article on December 2nd, the Sandusky Register reported that a particular photograph, and I believe the photograph to be the one that Ms. Ryder raised questions about earlier showing the image of a rust reactor head was not provided by FirstEnergy management pursuant to a request by the NRC in October of 2001. A spokesman for FirstEnergy is quoted as saying, quote, it was there for the asking, unquote. Four days later in a briefing to the members of the Advisory Committee on Reactor Safeguards, you, Mr. Grobe, claimed that the commission has seen definite improvement in the safety culture at Davis-Besse since March 2002. Mr. Grobe, upon what basis do you make such a ridiculous statement?

MR. GROBE: Appreciate your question, Howard. Let me respond, first, to a couple of your premises. We are committed to providing full information, full access to the public, to all of the information we know, all of the findings we have. We put ourselves here in front of the public on a monthly basis, and, quite frankly, every time we come to the site, we put ourselves in