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

Meeting held on Wednesday, June 12, 2002, at 3:00 p.m. at the Oak Harbor High School, Oak Harbor, Ohio, taken by me Marie B. Fresch, Registered Merit Reporter, and Notary Public in and for the State of Ohio.

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PANEL MEMBERS PRESENT:

U. S. NUCLEAR REGULATORY COMMISSION

Mr. John Grobe, Chairman, MC 0350 Panel
William Dean, Vice Chairman, MC 0350 Panel
John Jacobson, Branch Chief,
Mechanical Engineering Branch, DRS
Anthony Mendiola,
Section Chief PDIII-2, NRR
Douglas Pickett, Project Manager, NRR
Christopher (Scott) Thomas,
Senior Resident Inspector - Davis Besse
Laura Collins, Project Engineer, Region 3
Mel Holmberg, Metalurgist, Region 3

FIRST ENERGY NUCLEAR OPERATING COMPANY

Lew Myers, FENOC Chief Operating Officer
Bob Schrauder
Randy Fast
Jim Powers
Dave Eshelman, Director Support Services
Howard Bergendahl, Vice President-Nuclear
John Messina

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MR. GROBE: Good afternoon. My name is Jack Grobe, I'm the Director of the Division Reactor Safety for the Nuclear Regulatory Commission Office in Region 3. That's our office near Chicago, Illinois. Region 3 is responsible for the oversight of the facilities, nuclear power facilities in the midwest, including the Davis-Besse facility. I also serve as the chairman of the Davis-Besse Restart Oversight Panel.

Welcome to the second meeting of the NRC Restart Oversight Panel, with members of First Energy and Davis-Besse.

The purpose of the meeting today is for First Energy to update the panel on activities that have occurred and progress that has been made at Davis-Besse since the last public Restart Oversight Panel meeting in May.

Before we proceed further, I would like to introduce the NRC representatives that are here today. Here at the table on my far right, and your far left is Laura Collins. Laura is Project Engineer responsible for Davis-Besse in Region 3 office.

On my immediate right is John Jacobson. John is the Chief of my Mechanical Engineering Branch in Region 3.

On my immediate left is Bill Dean. Bill is the Deputy Director of the Division of Inspection Program Management in our headquarters offices near Washington,

D. C. Bill is also the Vice Chairman of the Oversight Panel.

Next to Bill is Tony Mendiola. Tony supervises the coordination of licensing actions and activities the NRC undertakes in our headquarters offices.

Next to Tony is Doug Pickett. Doug is the Licensing Project Manager, who has specific responsibility for the Davis-Besse facility.

And, on my very far left is Scott Thomas. Scott is a Senior Resident Inspector who works at the Davis-Besse facility for the Nuclear Regulatory Commission every day.

Jim Dyer, the Regional Administer in Region 3 and Jim Caldwell, Regional Administrator, wanted also to be here today, but due to other activities, conflicting activities, they are unable to be here.

I would like to right now recognize any public officials or representatives of public officials that are here today. If you could stand up and introduce yourself, I would appreciate it.

Do we have any public officials here today? Okay.

MR. WITT: Yes, I'm Jere Witt, County Administrator for Ottawa County.

THE COURT: Thank you, Jere.

Any others?

Okay. Thank you.

Finally, I would like to thank several people that have made this meeting possible. First is Nancy Keller. Nancy is our administrative support at the Davis-Besse facility, works in the Resident Inspectors Office.

Also Jan Strasma. Jan, raise your hand back there. Jan is our Public Affairs Officer in Region 3.

And Rolland Lickus, our Public Affairs Officer is also here.

Mr. Stucker. He's up there running the sound system. Mr. Stucker and the Oak Harbor High School have been very generous in allowing us access to this fine facility to conduct these meetings, and I appreciate that.

Our agenda today is fairly straightforward. I did not make copies of it, because it's so simple. First, we're going to conduct a business meeting between the NRC and First Energy to discuss the activities that are going on at the Davis-Besse site. First Energy has provided copies of their presentation out in the front of the auditorium.

When that dialogue is completed, I will invite members of the public to step forward with any questions that the NRC staff can address or provide any insights that they wish us to consider. First Energy is invited to respond to any questions that they desire to respond to.

We're keenly interested in your thoughts. That's

one of the reasons we conduct these meetings in public and provide an opportunity for public input.

If you do not feel compelled to step to the microphone, but have something you want to share with us, the NRC staff will be available following the meeting. And, we also have what we call feedback forms. They're forms that are preaddressed, no postage necessary, that you can write whatever comments you might want to provide to us on those forms, and drop them in the mailbox and we'll receive them.

So, there is a number of ways that as a member of the public you have an opportunity to give us input on these proceedings or any other aspect of nuclear power safety.

To that end, I've changed a little bit the structure of the way we're conducting these meetings. It's difficult to conduct a business meeting in the evening. If I schedule a 7:00 meeting, these guys would have already worked for 12 hours, as would have my staff, and it's tough to have an effective meeting that time in the evening. And so, I moved the business portion of this meeting into the regular business day. It's still a public meeting and we'll accept public input.

But I also decided to transcribe this meeting. And that transcription will be available on our web site and it

will be publicly available in our records management system approximately three weeks after the meeting.

In addition, because there has been a significant amount of interest in the activities at Davis-Besse, we'll be conducting a meeting this evening from 7 to 9 p.m. for any members of the public that want to come, that were unable to make it during the business day.

So, we'll continue transcribing the meetings, and having evening meetings as long as public interest indicates that that's appropriate.

At this point, Bill, unless you have any additional opening comments? Okay, great.

At this point, Lew, I would like to turn the meeting over to First Energy.

MR. MYERS: Thank you, Jack. It's indeed our pleasure to be here today and discuss with you the Return to Service Plan that we, we've completed since our last meeting.

My name is Lew Myers. I'm the Chief Operating Officer of the First Energy New Operating Company.

My first line is Desired Outcomes. Today we would like to demonstrate a comprehensive recovery plan to the public. We would like to demonstrate that management at First Energy Nuclear Operating Company will take strong actions needed to resolve the technical issues at our

Davis-Besse plant; to operate the plant both safely and reliably; we will improve the employee confidence before we return the plant to service; and regain regulatory confidence; and, finally, most importantly, we want to receive your feedback, feedback from the public on our actions.

Page four shows the basic building blocks of our Return to Service Plan. We believe the plan is comprehensive. Consists of seven building blocks. Each building block has an arm that's here with me today. I'll introduce them in a moment.

From an independent oversight standpoint, the first building block is a Restart Overview Panel. We've been very careful to put a panel together that has both regulatory expertise, industry expertise, community expertise, oversight expertise, and technical expertise in the history of this plant.

We think we've put together a top notch Oversight Review Panel that monitors each of our plans as we go through the various phases of planning, discovery, implementation, and then validation. And, you'll hear us use those words.

The plan consists of the following building blocks. First, Reactor Head Resolution Plan. We made a lot of progress there since the last meeting and Bob Schrauder

today will discuss that.

The next plan is the Program Technical Compliance Plan. That's looking at our engineering programs and also our nonengineering programs in the plant to ensure that we're complying with the regulatory requirements and the industry experience. So, we're going through those programs one by one.

Finally, the Containment Extent of Condition Plan. The containment building; what is the material condition of the containment building and what was the effect of the boron that leaked out into the building on the equipment.

So, we're going through each piece of equipment and Randy Fast will discuss that today. Randy is to my right here.

The Restart Action Plan. The responsibility of the site, VP Howard Bergendahl to my left, and he'll discuss that.

Finally, the System Health Assurance Plan, if you will. Jim Powers to my, second to my right over here, will discuss that plan. That's to go through each one of the systems. And, he's had some help from our Plant Manager, Randy Fast, to assist in the matter to make sure those systems are in good material condition prior to bringing the plant back online.

Finally, the Restart and Post-Restart Plan. As we

bring our plant back online, we want to do that in a flawless manner. We're going to be installing several modifications during this extended outage; a new reactor head and doing a lot of maintenance.

So, we've got premaintenance testing; we've got the head testing; and we've got all the modification testing that we have to integrate together and do in a controlled manner to bring the plant back online.

And finally, we have to look at ourselves internally. The NRC had a meeting today discussing their lessons learned. Well, what are the lessons learned that we have from a management standpoint? What drove us to the situation where we, we did not get, we did not identify this leakage earlier?

So we have an, we have an integrated team put together that's going through that of industry experts, our own people, and also management experts to give us feedback on this recall. Dave Eshelman is in charge of that.

With that, I'll turn over the first, the first area to Bob Schrauder.

MR. GROBE: Excuse me for just a moment. I realized late, and I apologize for this, that a member of my team was not up here. We just brought him up. I want to introduce him. Sorry about that Mel.

This is Mel Holmberg. Mel is a metalurgist on our

staff in Region 3. Mel was on the Augmented Inspection Team and he's also conducting inspections of the facility today. And, we'll be talking about some of the activities Mel is reviewing and I wanted him up here to have discussions and provide insight.

MR. MYERS: I'm glad you did that, because I forgot to introduce Bob Saunders is with us. He's the President of First Energy. And, Gary Leidich who I introduced earlier today, but Gary is the new Executive Officer for First Energy Nuclear Operating Company. He's returning, and this is his first week back. He came to us from an executive position from the Institute of Nuclear Power Operations. And, we welcome Gary back.

With that, I would like to turn this over to Bob Schrauder for Reactor Head Resolution Oversight.

MR. SCHRAUDER: Thank you, Lew.

As Lew said, my name is Bob Schrauder. I have overall responsibilities for replacing your reactor vessel head at Davis-Besse.

By way of background, I'm an engineer by trade. I have 25 years experience in the nuclear industry at various positions, including the Director of Engineering and Plant Manager.

Currently, I'm the Director of Life Cycle Management. What that means is, I'm in charge of all the

large projects for all the FENOC facilities, as well as the long term enhancements to our plants.

The last time we got together, our primary option for restoring the plant to safe operating condition was to repair the existing Davis-Besse head. During the course of that meeting, there was exhibited a fair amount of anxiety, I would say, between both the NRC on that option and members of the public. A lot of questions were raised as to why wouldn't we just replace the reactor vessel head versus repair the existing one.

So, while my colleagues were busy designing a safe and effective repair, I was tasked with looking for a replacement head for the Davis-Besse plant.

Next slide, shows an overhead of some of the reactor vessel heads that I'm talking about today. Since the last meeting, we have located essentially a like-for-like replacement head from a never completed nuclear power plant in Midland, Michigan. We've decided therefore that our best option for returning the plant to a safe operating condition, and for safe operations going forward, will be for Davis-Besse to replace its existing reactor vessel head with this replacement head.

Now, this isn't the cheapest option, of course, nor is it the shortest option, but we are convinced it is the best option and gives the highest degree of confidence to

both the regulator, ourselves and the public.

Next couple slides, please. Couple of bullets I want to talk about. Before we bought the head, we had to assure ourselves that it was in fact usable at Davis-Besse. We have done that. Physically, it's nearly a perfect fit. I'll discuss a couple of minor differences between that head and our existing head.

That head was manufactured by the same company as the Davis-Besse head; Babcock and Wilcox. It is unused. It's designed to the same requirements as Davis-Besse. It's built to the same industry design codes and made out of the same materials.

Now, just a couple of the physical differences that I talk about are on the following page. There are, the reactor vessel head must fit on the reactor precisely in order for the control rods to effectively move through the control nozzles and into the core.

To make sure that the head fits precisely on the vessel, there are what are known as keyways. Keyways must fit within a very tight tolerance in order to assure that the head is perfectly aligned.

Each of these keyways is specifically fit to the vessel that it's intended to serve. And although they are in very close approximation, you have to make sure that it is in fact in the precise location that is needed on your

reactor vessel head.

So, through some very careful and precise measurements, we determined that of the four keyways on the Midland head, several of the surfaces need to be very slightly machined to fit our reactor vessel head.

What you see up on the screen there is a picture of those keyways. The one picture shows just a, how it sits. The other picture, here on my right, shows two surfaces that the key fits in.

So, there are eight of those surfaces, four keyways, eight surfaces. Four of those surfaces had to have between 3 and 5 thousandths of an inch shaved off of them to make sure that they fit the keys on our vessel.

The other minor difference was the O-ring. The O-ring is the sealing mechanism of the reactor vessel head flange to the vessel flange itself. There is a set of two sealing rings that go around it. The ones on the Davis-Besse plant are .5 inches in diameter. The ones on the Midland head are .455 inches.

We have looked at that difference. We have confirmed that it effectively seals on our reactor vessel and we will be able to verify that when we -- there is a detection system that will enable us to tell for sure once we put the vessel head on and fill it with water, that they expect it to seal, as we expect it to do.

Now, as I said, we didn't want to purchase this reactor vessel head until we made sure it met all of the codes and standards. We put the head through a series of intricate inspections to make sure that its storage in the Midland containment has not in any way affected its capabilities.

So, we are examining virtually all of the welds on this reactor vessel head. We're examining all of the nozzles in the head, making sure that they are in excellent condition for us to put into our facility.

Now, we know that all these exams were done on this head in the past and it was accepted for use as a code compliment at a nuclear power plant; however, we want to make sure again that the storage of this vessel over the last 17 or 18 years has not in any way affected the welds.

We've already started on those. We are through with many of them, but those will continue over the next several weeks.

Now, in order to install the head at the Davis-Besse plant and to remove it from the Midland plant, the containment building where the reactor vessel is held does have an equipment hatch where you move large pieces of equipment in and out of the containment; however, that containment, or that equipment hatch is not large enough to fit this reactor vessel head. Reactor vessel head itself

is about 17 feet in diameter, and it's about 9 feet tall. It won't fit through that opening.

So, what we're going to do is put a temporary opening in our containment building, about a 20 foot by 20 foot opening. We'll move our old reactor vessel head out and move the new reactor vessel head in. Place it on the reactor vessel. And then we will restore our containment building to its original design capabilities. All of this work we expect to be completed sometime during the fourth quarter of 2002.

MR. JACOBSON: This is a good time I think briefly for us to discuss some of your inspection plans on this particular part of the project. For the head replacement activities, we're taking a three-prong approach on the head itself.

The first part of it is to go out to Midland site, which we dispatched an inspector today to go out to Midland, and he's going to be reviewing some of the nondestructive examinations and inspections we're doing out there, as well as review some of the documentation of inspections.

The other part of it is going to be a review of the documentation that supports the quote compliance of the head.

And lastly, review and inspect both your opening of

the containment, as well as the restoration of the containment.

These are only a few of the inspections we're going to do, but specifically with respect to the head, those are three phases of the inspection that we've already begun.

MR. GROBE: Would you describe what sort of testing you plan for the containment, containment liner after you restore that liner, what sort of testing you're planning?

MR. SCHRAUDER: Our containment building at Davis-Besse, as you know, Jack, is two separate structures; one is the pressure vessel and the other, what most people see, the concrete around the pressure vessel is the shield portion of that.

When we restore the containment, the pressure vessel itself is a steel vessel. It will be cut open and then a plate will be rewelded back in place. We'll then do an examination of that weld to make sure that the weld is good, has no flaws in it.

Then, we'll do a leak test on the opening, which will be a -- right now the plan is to do what's called a vacuum box test on it, where we will have an enclosure around the area that has been repaired and we'll do a test to verify that it is in fact not leaking.

Concrete itself will be checked to assure

appropriate curing of concrete also.

MR. JACOBSON: A point of clarification; I know you're replacing the head, but it's my understanding that you're going to reuse the existing surface structure that mounts to the head?

MR. SCHRAUDER: That is correct. The upper portion of the surface structure will be reused from the Davis-Besse existing head.

MR. JACOBSON: Incorporate some mods?

MR. SCHRAUDER: The inspection modification for the surface structure, actually the lower portion of the surface structure, the supporting skirt, and that modification is being made on the Midland head. We are going to use that lower portion. And those inspection modifications will be performed on that head prior to its shipment to Davis-Besse.

MR. JACOBSON: Thank you.

MR. MYERS: I think it's important that the public understand that modification is designed to allow us to inspect the head again in the future in a very easy manner. Our previous head did not have that modification, and it made inspection difficult.

MR. GROBE: We've been evaluating the requirements for testing of the containment

vessel after you performed this modification or restoration activity, I guess. We haven't concluded yet the type of testing, leak rate test you are referring to is a Type C leak rate integrated test. We haven't concluded that that conforms with the requirements.

We are aware that there is a number of other plants in the midwest that have performed these kinds of operations at their facility and replaced large forms in their containment and in each case they did a Type A leak rate integrated test. We're evaluating whether or not that's the required test and we'll continue the dialogue on that.

MR. SCHRAUDER: We'll certainly do whatever we have to do, Jack, to verify that that repair is good and that containment itself is satisfactory.

MR. DEAN: Bob, you mentioned that the keyways may or may not be a technical change. Are there any other challenge that you see relative to bringing in the head?

MR. SCHRAUDER: I don't believe that the keyways are necessarily a challenge. We've made the measurements. We know what needs to be done. And they do need to be shaved very slightly, like I said, 3 to 5 mills off of that.

And, other than completing the nondestructive exams,

there is, the service structure itself has about a 5/8 difference in height, and where it sits on the lower skirt. And we have to make sure that all of our tooling systems and cable and everything meets up.

We're not expecting that to be a problem, but it's the only other difference on that head that we will need to address and make sure that it has no problem.

MR. GROBE: Could you describe for us the progress on the nondestructive examination at Midland?

MR. SCHRAUDER: Yes. The large weld. If you look at this picture, you see it looks like one piece, but it's actually two pieces. The domed portion and then the flanged portion. There is one large weld that welds that dome to the flange.

We have completed a radiograph on that weld to verify that it is good. And it is good. We know that that's a good weld.

The other exams we're going to do are radiograph of the flange to nozzle. You see the nozzles coming out of the head there? There is a flange that sits on top of that nozzle. That's your control rod drive mechanism comes down on.

Each of those welds are in the process of being radiographed. We'll do a big particle exam of the large

dome to flange weld. We'll do a visual inspection of the entire head surface. We'll UT that flange to dome weld again, making sure that there are no flaws in the weld. We'll PT the nozzle to flange weld. That's a dye penetrant test; again, for surface crack verification.

We'll also exam what's called the J-groove weld on the nozzle where they will fit into the vessel on the weld underneath to make sure that is a good weld. And we're also going to perform an ultrasonic test examination of the nozzles themselves to make sure that there are no cracks in those.

The way we've broken these examinations up are into three parts. One is to augment our co-data package to make sure that we have all the required records of tests on that. The other set of tests is for our in-service inspection preservice examination. And then the third set are augmented inspection, we decided we need to do again, to verify that the storage of this reactor vessel head had no deleterious effects on it.

MR. MYERS: Jack, you mentioned a lot of other plants out west?

MR. GROBE: I'm sorry?

MR. MYERS: You mentioned a lot of other plants in the midwest have experienced a large number of containment similar to this. Bob, why don't you

talk about the experience level that we're bringing in?

MR. SCHRAUDER: Well, we've brought in Bechtel Power Corporation to do the containment and restoration for us. They have done nearly all of the containment openings and restorations in the United States, and they've done several overseas also. So, they certainly are very experienced in this.

Also brought in Framatone to help us do the inspections on the head. And they also are very experienced, capable contractors for us.

MR. GROBE: Do you have any challenges completing the radiographs that you have ongoing right now?

MR. SCHRAUDER: Like I said, the big weld, the dome flange weld, we had success with.

On the nozzle to the, flange to nozzle welds, there is 69 of those nozzles in the reactor vessel head. We have completed the radiographs on all of those. 52 of them, 52 of the 69 came out very good, easy to read. 17 of them have some type of an indication that we're having to relook at, reshoot.

We believe right now that it is a cure density issue, but we're going to do another set of radiographs on that. Then we'll do a manual UT to make sure that there are no indications in that weld, and verify that we have a

good weld there. But we do have some more work to do on those inspections.

MR. PICKETT: We understand from previous meetings that the Midland head has some rust on the head. Could you show us the drawing where the rust is identified and what is the extent?

MR. SCHRAUDER: Well, if you look at the flange there, the large flange that comes down, right where that circle is on there, that's the dome and the flange. That is carbon steel. And, it does have some surface rust on it. There is not much pitting or anything. It is just surface rust on, being in relatively not completely dry environment.

So, there is nothing unexpected in the fact that there is some surface rust on the head. We'll clean all that rust off before its used.

MR. PICKETT: Well, was the rust limited to just the flange area on the outer perimeter or throughout the surface?

MR. SCHRAUDER: Any of the exposed carbon steel has rust on it, surface rust; and we will thoroughly clean all that, again, before shipment of the head.

MR. PICKETT: So, you haven't completed that work?

MR. SCHRAUDER: No, we have not.

MR. GROBE: I have one other question that affects our staff at headquarters. Are there any licensing activities that you expect are necessary, any co-relief requests?

MR. SCHRAUDER: At this time, we don't expect any new license requests or documents to come in. We do have a couple of executive or relief requests in our in-service inspection program that we have been granted in our previous inspection intervals and they will need to apply to this head, as they needed to apply to our existing head, but we have not yet identified any new NRC approvals that we need.

MR. GROBE: Those existing relief requests don't need to be modified in any way?

MR. SCHRAUDER: Well, we're looking at those to see. We will probably resubmit them just to make it clear they are for this head. The specific weld identification number may be different on those requests. So, we will either update that or just submit a new replacement request for them.

MR. GROBE: Any other questions from the NRC staff on the head?

MR. DEAN: The only other question I have is, obviously, there is a certain amount of

records that need to exist in order to provide pedigree, as you will, for this. Any difficulties or problems relative to the records that exist on the existing Midland head?

MR. SCHRAUDER: We have been able to compile the original co-data package for this head with the exception of the film for the radiographs. We don't have that film. And that was one of the reasons that we, although we had a signed off code data form that said they had been done, they had been accepted; they are not a part of the required plant life record. And, we wanted that record for our files nonetheless.

So, that's one of the reasons I'm supplementing the code data package, as I said, and that's something that will be specifically radiographs on those welds.

MR. GROBE: Thanks, Bill. You just sparked another question in my mind.

Bob, thank you also.

The code data package that's being put together; what sort of oversight does quality assurance have over that package? What's the process by which you go to accept that package?

MR. SCHRAUDER: We have sent two of our teams down to Lynchburg to verify that the package is complete and meets our needs. So, both of our procurement people and our local people have examined those

records themselves.

MR. GROBE: When do you expect those reviews of the code data package to be complete?

MR. SCHRAUDER: Well, they will, they will be complete certainly within the next month; probably within the next couple of weeks. I understand that's something that you folks will want to look at also.

MR. GROBE: Right.

MR. SCHRAUDER: I'll have to get back to you, Jack. They may be in a condition now that they will be able to look at them.

MR. GROBE: Okay.

MR. JACOBSON: What's the role of authorized inspector in this whole thing?

MR. SCHRAUDER: We are working very close with our authorized nuclear inspector. He has been down to Midland. We have gone through the plant with him. And we intend to verify --

(inaudible/asked to repeat)

MR. SCHRAUDER: I'm sorry. The question was, what role the Authorized Nuclear Inspector has in this activity; and we have had him involved from the very beginning of our, our procurement effort on this head. He has been to Midland to examine the heads and to witness some of the nondestructive exams that we're doing

and we have gone over our plans with him to verify, that we have put together to verify that this original end stamp on this reactor vessel head is still valid. So, he has been very involved with us.

MR. JACOBSON: For those folks that don't understand or know what we're talking about with the Authorized Nuclear Inspector; this is required by the codes and it's essentially a third party, independent party, that reviews what's been done in this component to assure code compliance.

MR. MENDIOLA: I have a few questions. Is the head, how about the head, nuts and bolts, and possibly the lifting devices associated with that head?

MR. SCHRAUDER: We have, by our contract with consumers on the head, we have the rights to everything associated with the head that we want. That is, obviously the nozzles which are in there, are integral to the head.

The control rod drive mechanisms have been removed from this reactor vessel head, so we'll reuse our existing drive mechanisms.

All the lifting devices we have access to.

The service structure, we can take if we choose to.

All of the reactor vessel studs; we, in fact, have

already shipped. So, we have purchased them as part of this.

Virtually anything associated with the head that we wanted, was included with the price that we paid for it.

MR. GROBE: Any other questions?

Very good. Thanks, Bob.

MR. SCHRAUDER: Thank you.

MR. FAST: Good afternoon. My name is Randy Fast. I'm the Plant Manager at Davis-Besse. I'm pleased to present our plant for inspection to the containment building. Our team is committed to a comprehensive plan to support safe, reliable restart of the Davis-Besse facility.

As you see in the photograph here, the most prominent structure is the cooling tower. It's the large 550 foot tall item you see there. However, what we're going to talk about today, in the middle of the page is the containment structure. 240 feet tall, about 2.4 million cubic feet. That is the heart of the plant. And there resides the reactor coolant system.

What we're doing as part of our containment inspection plan is we have assembled a team of 24 highly qualified engineers. These engineers have gone through a special certification program, according to the American Society of Mechanical Engineers to obtain VT-2

qualification.

The reason that we did that was to ensure that we had consistency in our approach in the inspections that were ongoing.

We have three specific engineering inspection plans. They include an alloy 600 threaded and bolted plan, the general systems structure and components plan, and then under reactor vessel inspection plan.

The purpose of these inspections is to look at boric acid degradation, and we want to look at the general material conditions of containment. The scope not only includes the reactor coolant system, but includes all of the components within that structure.

Next slide, please.

MR. GROBE: Before you go on, Randy. Mel was out inspecting earlier this week and identified one area of containment that was not included in there. I want to understand why that is. It's the inner surface of the containment liner itself down low in the containment where the base mat meets the board, base mat meets the container liner. Would you talk a little about that?

MR. FAST: Yeah, I want to make sure we understand. We had already identified the forecast, and control program engineer had internal

discussions about that. As a matter of fact, we had gone to D. C. Cook to look at lessons learned; and part of our oversight panel as well identified this. So, we had three other areas where these were active topics of discussion.

Now, obviously, Mel came to the site earlier in the week and Tim Chambers, our Project Manager, was doing those walkdowns. He did identify those areas. We had not had a chance to fully inspect those areas, but that was to be included as part of our plan.

We appreciate Mel's contribution, but we had in fact already had a conditional report identified for this action.

MR. GROBE: That's good to be one step ahead of us.

MR. FAST: Yes, sir.

MR. GROBE: In following up on that issue, I understand, I sat in your morning meeting this morning and heard a discussion of the identification of some corrosion in that area on the containment liner. I was a little concerned about the depth at which your staff challenged whether or not that corrosion was adequately evaluated to determine what impact it might have had on the containment vessel integrity.

I read your condition report and it indicates that the integrity is intact and the equipment is operable. I

was wondering if you could help me understand, recognizing that there is a very small gap, could be as small as a 16th or less of an inch between that concrete and containment liner, why you believe that the, an inspection of the interface of the concrete and steel is sufficient? Why inspection not further down in that cap is necessary?

MR. POWERS: I'll handle that one, Jack.

What we're looking at today is the initial operability determination assessment of the condition of the liner. And we've looked at the past evaluations that have been done with the liner and with potential corrosion. There is, have been assessments done in the past, so it's not a new issue for technical evaluation.

The operability determinations that first look at it and begins the process of a much more in-depth investigation under corrective action program, so we'll continue to go into progressive detail to evaluate that entire, that vessel system and its structural integrity. So, we'll start down that path.

MR. GROBE: I appreciate that.

MR. JACOBSON: I did discuss this with members of the design engineering group, and you're right, that you're progressing down the path of environment operability and looking at structural integrity.

My concern was more for, as a containment function, making sure that there is no actual perforation. Certainly there is enough mass of steel, where even with the relatively large hole may have structural integrity, per se, but not boundary integrity, which was my area I was interested in. So, I didn't get the feeling that your staff was pursuing any options to confirm there wasn't a perforation of the liner.

MR. POWERS: Ultimately, that will be assessed. That will be a part of our evaluation in determining that containment integrity is sound; both the structural supporting function of it as well as the pressure integrity. Part of our corrective action process will ensure the total functionality of the containment is sound.

MR. MYERS: It was also brought up by one of our CNRB members, which is Oversight Review Board, so one of those members had brought this issue up some time ago and we were looking at that too. You wrote us a letter about it.

MR. GROBE: Jim, where would you get --

MR. MYERS: We have work to do there.

MR. GROBE: I'm sorry.

Where would you expect the more significant corrosion to be? Would you expect it at the surface where the concrete meets the steel or would you expect it below that surface?

MR. POWERS: We're looking at a couple of areas. There is, there is areas there where ground water has come up alongside the containment and we're evaluating that on the outside. And when we look at the top of the, the specific area on the inside where the top of the containment to the concrete boundary, there is also corrosion there.

My initial thought is that oxygen is more prevalent in that area. You may see more significant corrosion locally at the top, but we need to go further down below, Jack, and evaluate the complete conditions within the concrete.

One of the things we've done on the extended condition, we've talked a little earlier about going to the Cook plant and gleaning their lessons learned in this area. They had some questions on their containment very similar, and they did some extensive studies.

We are getting contact with the specialists that did that for them to evaluate whether, whether the corrosion at the surface represents the worst of it and what mechanisms we can go by to verify all the liner below, within the

concrete.

So, our intent is to verify the pressure integrity and structural integrity below the concrete.

MR. GROBE: Okay. I'm not a metalurgist, but I guess I would like to invite Mel to comment on where he would expect, given the set of conditions, which was a cool containment shell, and warmer environment with boric acid, carry with moisture in the atmosphere, it would condense on the shell.

Mel, do you have some thoughts?

MR. HOLMBERG: Yeah, based on experience, I'm familiar with what happened to Cook and some other plants that had corrosion in the liner. It is not necessarily the surface of the corrosion is in fact the worst.

Generally, what happens is as the gap is opened up, it forms a collection point for liquid, which then does establish some level that usually the gap closes up. There should be a damper. At least it's been experienced at other sites, such that there is a liquid level established in that gap; and the interface of the air/water interface typically, that has been the range they found more substantial corrosion.

Not sophisticated terms to determine that level. Some people have put a dipstick down and established that

level. That's how they know after they heavily concreted, that in fact it corresponds with where they also found in deepest areas of pitting corrosion.

So, it's been my experience that no surface would not be to inspect the most corrosion in that gap.

MR. GROBE: Your experience in the past, Mel, has been simply moisture, not moisture might have boric acid in it?

MR. HOLMBERG: That's generally true, yes.

MR. GROBE: I'm concerned with two points. First off, have you been to refuel; understood that was initially scheduled for sometime today? And at least containment integrity required when you do refuel out of the vessel into the other storage locations?

MR. POWERS: Yes.

MR. GROBE: The operations staff evaluated, has documented NCR based on conversations with the people inspecting the containment; the corrosion that they could see was characterized as surface corrosion. And that certainly would be true with any corrosion and that begins on the surface, but, and basically concluded that the containment was operable.

I don't believe that I'm comfortable with the level of technical rigor that went into that determination. Did

these operators involve any of your metalurgists or people that were familiar with this type of corrosion as it would occur in making that determination?

MR. ESHELMAN: I would like to answer that. You mentioned first about the liner challenge. When this report was brought to the supervisor, to the senior reactor operator, he's required to make an operability determination. So, through discussions, initial discussions, it was determined that based on the best evidence available, that yes, we were still operable. However, the challenge also occurred that that is when inoperability determination was asked for by the senior reactor operator.

What that is doing is asking engineering to provide a rigorous justification for what was originally determined to be operable. So, when we went into the morning meeting, we were carrying on our daily report, an operability determination that was due as mentioned about noon today.

So, that rigor and challenge was provided by the operations staff. The initial determinations made on best available information.

MR. GROBE: The question I asked, David, was whether or not any of your engineers were consulted in making that decision? Engineers would be familiar with this kind of corrosion, and that would have

been, I hope, information to be available, which your engineering staff would have been available whatever time, day or night, that you might need them. Were they consulted in making this determination?

MR. POWERS: I believe they were, Jack. That the engineers prepared the operability determination, participating in that function, and helped for that technical evaluation.

MR. GROBE: We'll probably be talking more about this, because I'm still concerned. As I said, the documentation might not be all the consideration that went into this, but the corrosion identified was surface corrosion and vessel's operability. However, due to the uncertainty of the extent of the condition in the gap, a detailed review needs to be completed.

If the operations staff were uncertain, I'm not sure how they concluded it was operable. This doesn't seem quite right to me. And we'll probably continue dialogueing on this.

MR. FAST: Under your concern, we'll continue dialogue. As well, just a point of clarification on the containment integrity. Requirements to refuel, the approach, there were some minor differences in the requirements for the containment in modes 1, 2, 3, and 4, and the requirements for a mode 5 and 6, so there

are some special issues as well here.

I believe that was the, some of the bases for our determination, but we can continue this dialogue outside and make sure that your questions are fully answered.

MR. GROBE: The way I read this is the person that made this conclusion was based on what I can see. I don't have a problem with it, but I don't know, and I'm not sure that's the right safety standard for people making operability determination.

MR. BERGENDAHL: We'll get the right people together and explain whatever decisions they make.

MR. GROBE: Okay.

MR. JACOBSON: This program focuses exclusively on, within containment, any damage that may have occurred because of the boric acid leakage. What are you doing outside containment for those systems that contain boric?

MR. FAST: For this program, our principle focus is inside the building; however, for the in-service inspection and return to service, all of the reactor coolant system, both inside and the supporting systems outside of containment will be evaluated.

MR. JACOBSON: Will they be evaluated by what, visual inspections? What do you mean

evaluated?

MR. FAST: There will be a walkdown, look for evidence of leakage in accordance with our inspection plan by qualified inspectors.

MR. JACOBSON: So, similar to what you've done before?

MR. FAST: That's correct.

MR. JACOBSON: Thank you.

MR. MYERS: That is in our system, so you'll be involved.

MR. GROBE: You can structure this any way you want. It just seemed odd to us, you have indicated this team of VT-2 qualified inspectors, and it seemed odd they weren't going to inspect all components that carried boric water, whether it's inside container or outside.

Are you using some system engineer to do system assurance or is this team of VT-2 qualified inspectors going to be looking at those systems under your system assurance?

MR. FAST: What I would like to identify, Jack, is that the individuals that were specifically part of the inspection plan for containment consisted of system engineers and design engineers in the disciplines of civil, electrical, mechanical and nuclear.

The system assurance plan focuses around the system help with the system engineer, but those same system engineers that have those systems are part of the qualified population with the VT-2.

MR. GROBE: Okay.

MR. MYERS: So, I believe the answer is we usually use qualified people.

MR. GROBE: Okay. All right.

MR. HOLMBERG: While we're on the subject, before we go on to VT-2 qualified people, one of the objectives in this first portion of my inspection is to look at the quality of the inspections that are going on. And to that end, you will establish that the person doing it will be VT-2 qualified. However, out of the 28 people that are, have done the inspections so far, five of those have prior experience.

So, you've got 23 people that have not been VT-2 qualified before. And, of those folks, is there confidence that this lack of experience, if you will, will not produce any, any problems for you in terms of understanding the quality of the inspections that are going on?

MR. FAST: I understand your concern revolves around the fact of the experience in some of these individuals. What I believe that we have is a team that is working well as a team, and they are highly

reliant on one another to peer check and provide consultation.

I have personally witnessed those engineers during those evaluations, and I see them in groups of 3, 4 and 5 in those walkdown efforts. So, the way that I would answer your question is that, as opposed to a single individual that's making that call, we are using a team approach, so that we can ensure that we've got that peer check and we've got the back-up from the other individuals on the team.

MR. HOLMBERG: Okay, thank you.

The second area example of their probing in respect to quality is in terms of establishing a standard, if you will, of the quality of exam.

For one of your plans, you did establish a standard of quality for exam, being able to read characters at a certain height, and under certain lighting conditions. With the other two plants, no such standard exists for the quality of the exam itself.

I wonder if you could speak to that.

MR. FAST: I don't have any specific response; however, we appreciate your input and we'll certainly take it into consideration.

MR. MENDIOLA: I can ask a follow-up question about the VT-2 personnel. Were these people qualified and certified, if you will, in the normal

method of qualifying VT-2 personnel or were they put, if you will, in some sort of special program to conduct this inspection?

MR. FAST: We put together a training program that meets the requirements in accordance with the American Society of Mechanical Engineers, and training was provided on station and the individuals went through a qualification process in order to obtain that VT-2 certification. To my knowledge, that's not unlike other plants in their qualification process.

MR. MENDIOLA: Okay.

MR. GROBE: I have more of a structural question. You have your Return to Service Plan, and then you have implementing procedure or plans for each of the building blocks, and then under that are detailed procedures for each activity. Are all of these plans and procedures controlled under your quality assurance program?

MR. FAST: I can't verify right now on the fly that they are. We're still developing that restart plan. We put the shell of the plan together, but the idea will be for us to go through and align with you those procedures, startup procedures, evaluation procedures, and ensure that they meet the highest standards in the industry.

MR. GROBE: I'm not sure I was

clear in my question.

We've received, we received Return to Service Plan on the docket, and that has a set of reviews and improvements. And that certainly is a document that describes activities that affect quality.

And then there is implementing procedures, several tiers of implementing procedures. And I've seen a number of those have already been signed off and issued to the field.

Are each of these documents controlled under your quality assurance program, meaning that tier five requires certain steps?

MR. FAST: The inspection plans, those specific to the inspection are not. However, the return to service are principally in the post maintenance, post modification and the operations specific procedures and they are controlled.

MR. GROBE: Why wouldn't the inspection plans be quality procedures? Not that they're not quality, but why wouldn't they be controlled under the quality assurance program?

MR. MYERS: Inspection plan itself?

MR. GROBE: Yeah. Maybe we're not communicating. I'll keep working on it.

MR. POWERS: The inspection plan is prepared by procedures, as a controlled product that we prepare; and it's status of quality we go on and evaluate and get back to you on that one.

MR. HOLMBERG: For example, one thing I do know is procedure that implements the plan, for instance, does not require adherence to the plan. And there is no other, as far as I know, guidance documents other than the one that was given to me today. So, it's just an example. There is not a requirement to adhere to a plan in the guide and procedure that tells you how to develop a plan.

MR. MYERS: Typically, our plans do routine operation, and our plans would not be under a quality program as a plan, but the implementing procedures would be. I need to understand that better.

MR. GROBE: I think we do too. We'll continue dialogueing on this. What we want to make sure is you have appropriate rigor that people are required to follow the procedures and plans you developed. That these plans aren't just their expectations.

MR. BERGENDAHL: That's correct. Their plan is oversight and we can step through that to show you this.

MR. MYERS: Then we use our

quality control to make --

MR. HOLMBERG: That's where I want to stop you. The plans are actually controlling the work, so it is your ends document. There is no lower level procedure that tells people how to do the inspection. That's what I'm, that's my point. There is no procedure that's implemented by the plan.

I wouldn't, if it was done that way, I, we wouldn't be having this discussion, but I think you have a procedure that we're following.

MR. MYERS: We understand the issue now. Okay. Okay. We'll look at that.

MR. GROBE: This could only be a vernacular issue, but it's an important one.

MR. MYERS: Yeah, I understand.

MR. GROBE: Maybe we'll have the lawyer resolve this issue.

MR. FAST: Excellent suggestion.

MR. THOMAS: I want to be sure on what you said earlier, on the system lockdowns for the systems tech.

(inaudible/requested he repeat)

MR. THOMAS: Earlier, you spoke

to, a little bit about the system, about the assurance plan; and I wanted to be clear on the specific point of the walkdowns of the systems that contain boric acid on the outside containment. You stated that those would be done per the system, per the assurance plan. Was that a correct statement?

MR. FAST: Well, it's actually, there are some systems, such as some of the water treatment systems, that handle radioactive waste and whatnot that are not part of system called Assurance Plan, and those do contain borated water. The systems that directly interface with the reactor coolant system, such as decays makeup and whatnot, are what those systems are that are under review. So I don't have the --

MR. THOMAS: But the clarification I wanted was, will they be physically walkdown by a system engineer or an inspector to verify that they aren't subject to the same type of corrosion as was found on the vessel?

MR. FAST: All of our systems will be walked down thoroughly as part of our restart plan execution.

MR. THOMAS: Including the one outside the containment?

MR. FAST: That is correct.

MR. THOMAS: Thank you.

MR. FAST: Just thought we might have a little fun. We have a picture here. I was in containment yesterday as part of our plant cleanup day. It really is a great opportunity for the plant employees to get together.

We had folks working in containment in our office facilities and in our turbine building and in our water treatment systems and our circulating water systems, throughout the facility out on the grounds. I was able to capture a couple of pictures.

Here's a couple of our plant workers, actually climbing the ladder on the side of the service structure. And we do have activities that are still supporting, as Bob Schrauder identified, our head replacement plans.

So, we have another picture, if you move to the next one.

These are a couple of our workers on top of the service structure. And we still have a number of control rod driving, control rod driving mechanisms that are being removed in preparation for the replacement activity.

The next picture is one of the inspection programs that I talked about, was the under vessel inspection. And this is really some new territory with the industry. And really exhaustively looking at the condition under vessel.

Under vessel represents high radiation conditions, we partnered to develop some new technology. We've been able to use this in the last about 60 days or so. This is a permanent magnet crawler. It's remotely deployed under vessel, and it runs, right now you see it in an inverted position. It has a camera. And that's how we were able to fully videograph the underside of the vessel.

Subsequently, we removed additional insulation, and did some additional cleaning and water brush and VT-2 examination. So we are, this is some of the new technology that we put in place to assure ourselves we fully understand the condition of our, in this case, reactor vessel.

The last picture here is just, as we talked about, the total structure is about 285 feet. 45 feet of it is below grade elevation. 2.4 million cubic feet. We broke those into elevations. This is the 603 foot elevation. This is where the head is actually sitting on the reactor vessel stand, and broken into a grid; that way we can clearly identify the teams of engineers and their areas of responsibility within the containment. So, we see here how we develop some maps to create those specific areas.

MR. MYERS: While we are talking about this area of inspection, it wouldn't be one person, it would be a team of individuals.

MR. FAST: That's correct.

MR. MYERS: That's where you get your peer check and they do that as a group, experiencing.

MR. FAST: That concludes my presentation. Are there any additional questions?

MR. DEAN: Randy, could you describe to us accumulated boron positions that you all have found and what the extent has been and what's been necessary to clean those up.

MR. FAST: I would like to understand a little more clearly the length and breadth of your question. One of the things that we do at the onset of the refueling outage is go into the containment building and do a surface decontamination, so some of the areas that were impacted were cleaned up very early during this refueling outage.

However, as we've done additional inspections, we've found boric acid throughout the containment and there are areas that are under remediation and cleanup inside of the duct work and whatnot.

So, I can not answer in specific terms what that quantity represented; however, there was some superficial amount of boron throughout the containment. Many of those areas are in the process of being decontaminated, cleaned

up at this time.

MR. GROBE: Would you give us an example or two of any damage that was identified by boric acid pressure?

MR. FAST: I don't have any photographs, but I'll provide you at least, try to provide some visual clarity, an area that is most pronounced; and that is the area where you come in through the personnel airlock at the 603 foot elevation. It's an area where the service waterlines run in the overhead.

Those service waterlines run typically around 70 degrees and they create an environment where condensation can create then the fluid, as the liquid or the moisture that's in the environment is collected, you have some boric acid that runs down onto electrical panels, onto some conduit, some surface components; in one case, there is a recirculation ventilation duct that had been, you can see signs of wastage on the surface, actually through a wall, and that will be replaced.

Another area that had significant impact was our containment air coolers. The containment air coolers have a common duct. Those three are cooled by that service water, and they provide cooling and recirculation of air post accident.

Those areas had quite a bit of accumulation of boric

acid. The common plenum has been completely cleaned and has been preserved and recoated. However, there is still some existing surface rust. Those need to be additionally cleaned, evaluated, and we'll have corrective actions that are part of the condition reporting process, which was the process that we used as we collected data from those inspections.

MR. MYERS: When you talk about the cleaning, this is not a small room.

MR. FAST: It's about a tractor/trailer size duct work column that feeds into each of the three containment coolers. Myself and Lew have been inside that duct while it was being cleaned and then subsequently looked at it after it's been recoated.

MR. GROBE: The cable fan covers what you were talking about. You said they're next to the personnel access to containment?

MR. FAST: That's one example. There are others and those are all looked at. I'm just trying to provide you a visual in the area that is really some of the worst that you might see in containment.

MR. GROBE: Could you characterize, are those easily visible by people going in and out of containment?