PUBLIC MEETING
BETWEEN U.S. NUCLEAR REGULATORY COMMISSION O350 PANEL
AND FIRST ENERGY NUCLEAR OPERATING COMPANY
OAK HARBOR, OHIO

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Meeting held on Tuesday, March 11, 2003, at 2:00 p.m. at the Camp Perry Clubhouse, 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

John "Jack" Grobe, Chairman, MC 0350 Panel
William Dean, Vice Chairman, MC 0350 Panel
Christopher Scott Thomas,
Senior Resident Inspector
U.S. NRC Office - Davis-Besse
Jon Hopkins, Project Manager Davis-Besse
Anthony Mendiola,
Section Chief PDIII-2, NRR
David Passehl,
Project Engineer Davis-Besse

FIRST ENERGY NUCLEAR OPERATING COMPANY

Lew Myers, FENOC Chief Operating Officer
Robert W. Schrauder,
Director - Support Services
James J. Powers, III
Director - Nuclear Engineering
L. William Pearce,
Vice President FENOC Oversight
Craig Hengge, Engineer - Plant Engineering
Kathy Fehr,
Owner-Management Observation Program
Lynn Harder, Project Manager
Containment Health Inspection
Clark Price, Owner-Restart Action Plan
Greg Dunn, Manager
Outage Management & Work Control

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MR. PASSEHL: Welcome everybody. Welcome to FirstEnergy and members of the public for coming to this meeting today. This is a public meeting between the NRC's Davis-Besse Oversight Panel and FirstEnergy Nuclear Operating Company.

I am David Passehl, Project Engineer and Assistant to the Branch Chief, Christine Lipa, who is responsible for the NRC's Inspection Program at Davis-Besse. Christine cannot attend today's meeting due to other commitments.

The purposes of today's meeting are to inform the public of the NRC's Oversight Panel activities and to discuss the Licensee's progress on implementing their Return to Service Plan.

On today's agenda, we'll be doing introduction and opening remarks. We'll have a short summary of the February 11th public meetings, which was our last 0350 public meeting. We'll discuss significant NRC activities since that February 11th public meeting. The Licensee will present the status of their Return to Service Plan. And then we'll adjourn the NRC meeting with FirstEnergy, take a break. And, then we'll come back for public comments and questions of the NRC; and then we'll adjourn the meeting.

This meeting is open to public observation. Please note that this is a meeting between the Nuclear Regulatory Commission and FirstEnergy. At the conclusion of the business portion of this meeting, but before the meeting is adjourned, the NRC staff will be available to receive comments from members of the public and answer questions.

There are copies of the March edition of our monthly newsletter and copies of the slides for this meeting in the foyer. The newsletter provides background information and also discusses current plan in NRC activities.

We also have a public meeting feedback form, which is a good tool to allow us to get feedback from people who are here to let us know aspects of the meeting we can improve on.

We have been doing that since our public meetings started in May of 2002, and we've made some changes, and we think that, that we think have made this a better meeting. Copies of the feedback forms are also available in the foyer.

We're having this meeting transcribed today by Marie Fresch, to maintain a record of the meeting. The transcription will be available on our web page and we usually have that available on our website in about three to four weeks.

Before we get started, I want to make introductions. First on my far left is Jon Hopkins, who is the NRR Project Manager for Davis-Besse.

Next to him is Tony Mendiola. He is a Section Chief in the Division of Reactor Projects in our headquarters offices.

Next to him is Bill Dean, Deputy Director for the Engineering Division in NRR located in our headquarters office in Rockville, Maryland. He is Vice President of the Davis-Besse Oversight Panel.

And, next to him and to my left is Jack Grobe, Senior Manager in the Region III office in Lisle, Illinois; and he's the Chairman of the Davis-Besse Oversight Panel.

Next to me is the Senior Resident Inspector, Scott Thomas.

And, also with us in the audience, we have Nancy Keller, who is the site secretary at Davis-Besse; we have our Public Affairs Officer, Jan Strasma, in the audience; and we have our Region III State Liaison Officer in the audience as well.

We also have Jack ~~Raczkowski~~ Rutkowski, who will be replacing Doug Simpkins as the Resident Inspector later this spring.

MR. GROBE: Stand up, Jack. Let me embarrass you a little bit. Turn around. We're very grateful to have Jack here. He and his wife are in the process of moving to the area. Jack will be full time with us here at Davis-Besse in the next couple of months.

Jack has, is a highly educated, highly experienced individual. He's got degrees from three different universities. He was an officer with the nuclear Navy. And he's had about 25 years of experience working for a variety of utilities in the nuclear power industry. And, starting with us a few months ago and we're grateful to have him assigned out at Davis-Besse. So, you'll be seeing more of Jack over the next few months.

MR. PASSEHL: Lew, if you wanted to introduce FirstEnergy and return it back to me, please.

MR. MYERS: Okay, thank you.

We're going to be changing some chairs around at the break. So, I'm going to introduce the people now at the table. To my left is Bill Pearce, the VP of Quality Assurance.

To my right is Kathy Fehr. She's in charge of the Management Observation Program, is going to status us on that today.

Craig Hengge is the Manager of our new Leak Detection System. We'll talk about that today also.

Greg Dunn, next to him, is the Outage Director and also the Manager of Work Management. And he's with us today to status us on upcoming activities. We're actually going to try to get around to that today. You can see our package is considerably thinner than it was the last time.

Bob Schrauder is next to him. Bob is our Project

Manager for the System Review and also Director of Support Services.

Then, Jim Powers at the end of the table and Jim is the Director of Engineering.

We have Lynn Harder who is with us today. He will be, he will status us on the Containment Health Project.

And finally, Clark Price is the Owner of the Restart Action Performance. He'll status on that today also.

MR. PASSEHL: Okay, thank you.

MR. MYERS: Thank you.

MR. PASSEHL: At this time, I would like any public officials or representatives of public officials to introduce yourselves, please.

MR. PAPCUN: John Papcun, Ottawa County Commissioner.

MR. ARNDT: Steve Arndt, Ottawa County Commissioner.

MR. KOEBEL: Carl Koebel, Ottawa County Commissioner.

MR. WITT: Jere Witt, County Administrator.

MR. FLIGOR: Dennis Fligor, for United States Senator George Voinovich.

MR. PASSEHL: Okay, thank you very much.

Next slide, please.

Okay, we'll discuss a summary of our last public meeting. During the meeting on February 11th, we discussed the status of ongoing plant and NRC activities.

The NRC staff discussed the status of Restart Checklist items. We described the inspections that we've done and those that are upcoming regarding the adequacy of safety significant structures, systems and components. We mentioned a Resident Inspection Report and a Special Inspection Report that we issued.

The Special Inspection Report concerned the adequacy of Root Causes and the Human Performance area. We discussed the status of ongoing System Health Review Inspections, which are particularly focused in the engineering areas.

We highlighted some inspection activities that remained, including the normal operating pressure tests, the containment vessel integrated leak rate test, the inspection of the emergency sump, inspections of various Licensee programs, and adequacy of organizational effectiveness in human performance.

Later in today's presentation we plan to provide an update on our recently completed and ongoing NRC activities.

The Licensee provided an update on efforts made toward restart. They discussed activities related to fuel reload and the containment integrated leak rate test. The Licensee also covered from a system health standpoint, their Safety Function Validation Project and described the basis for increasing the scope of their system health reviews.

The Licensee recapped our January 30th public meeting, which was held to discuss Safety Culture and Safety Conscious Work Environment. And they discussed how they grade their own Safety Culture. The Quality Assurance Organization discussed some of their observations. And finally, the Licensee discussed their schedule and where they were at and where they were going in the next few months.

Next slide, please.

MR. GROBE: There has been a number of activities that have occurred on our side of the table over the last month, and we wanted to just update you on a few of those. Work level activities for the NRC has gone up significantly and will continue to go up over the next couple of months as this project wraps up.

The first thing I wanted to talk about just briefly is we issued a preliminary significance assessment of the performance deficiency of Davis-Besse. On February 24, we issued this letter. It contained what we call a performance deficiency.

That performance deficiency at Davis-Besse was the failure to properly implement the Boric Acid Corrosion Management and Corrective Action Programs that allowed the reactor coolant system pressure boundary leakage to occur undetected for a prolonged period of time, resulting in the reactor pressure vessel head degradation and circumferential ~~tracking~~ cracking of the control and drive mechanism penetration nozzles.

We carefully articulate that performance deficiency and then assess the risk significance of that. Under NRC's Reactor Oversight Program, we have four colors that we use to describe the relative significance of findings. The least significant is what we call green, and it ranges up white, yellow, and the most significant is red.

Our preliminary decision is that the performance deficiency that resulted in this extended outage was characterized as a red significance finding or a finding of high safety significance.

Before the NRC makes its final decision on the significance, we publish our significance letter and give FirstEnergy an opportunity to comment on the analysis that supported that determination, give us any additional information that would provide further insights that would be useful; and FirstEnergy is in the process of evaluating our letter, and I understand they will be responding with a letter to us.

So, another option that FirstEnergy would have, would be what we call a Regulatory Conference. That would be a public meeting. And, I understand that FirstEnergy has opted not to do that, but send us a letter with some comments; and we'll receive that letter and make our final significance determination.

Thanks, Dave.

MR. PASSEHL: Okay, the next item there, on February 19th of this year, Region III issued the final significance determination letter for two white findings associated with radiological controls related to steam generator work back in February of 2002.

The findings involve failures by plant staff to conduct an adequate evaluation of the radiological hazards in order to characterize radiological work conditions, take timely and suitable measurements to adequately monitor the intake of radioactive materials by workers during and following installation of nozzle dams and steam generators.

A public meeting was held back on October 16th, 2002, to discuss the findings and observations from our inspection of this issue. Inspection report was issued on January 7th, 2003. FirstEnergy agreed with the NRC's characterization of the risk significance of the findings and declined the opportunity to provide additional information or discuss the issue in a regulatory conference.

After considering the information developed during the inspection, the NRC concluded that the inspection findings were appropriately characterized as white, which is an issue with low to moderate increase importance to safety.

The NRC is currently conducting inspections in the radiological protection area, which I will mention in the next slide.

MR. GROBE: We also had an opportunity to respond to your governor, Governor Taft. The governor requested a briefing on what's happening at Davis-Besse from the NRC's perspective.

On February 27, my boss, Jim Dyer, the Associate Director of our Headquarters Office responsible for Nuclear Reactor Safety, Brian ~~Sherrod~~ Sheron, and myself briefed the governor and about 15 of his staff on a variety of topics, including some historical information on control rod drive mechanism penetration cracking, boric acid corrosion, as well as specific information regarding what's going on here at Davis-Besse, including the significance assessment letter that I just discussed a moment ago.

The NRC's response to the reactor head situation at Davis-Besse characterized the FirstEnergy's activities that are ongoing, as well as discussed in a broader context the nuclear industry's response to what happened at Davis-Besse and actions that are occurring at other plants around the country.

We completed the briefing with a discussion of our Lessons Learned and the improvements that the NRC is making in its programs and processes to ensure that this kind of situation doesn't happen again in the future.

MR. PASSEHL: On February 26th, 2003, the NRC issued two Special Inspection Reports on review of activities as described in the Davis-Besse System Health Assurance Plan. That inspection examined the Licensee's actions relative to NRC Restart Checklist item Number 5B, which is associated with assuring the capability of safety significant structures, systems and components to support safe and reliable plant operation.

The Licensee's System Health Assurance Plan consists of three review programs; an Operational Readiness Review, a System Health Readiness Review and a Latent Issues Review. Our inspection included reviewing the plans and procedures for the three review programs, monitoring the work of the teams in progress, monitoring nuclear oversight activities, attending review board meetings, and reviewing condition reports generated by the teams as reviews were conducted and discrepancies were identified.

The inspectors also monitored training of reviewers, conducted walkdowns of systems, examined emergent issues, reviewed independent self-assessments of systems and reviewed various reports. We also performed our own Independent Design Review.

The NRC concluded in the inspection reports that the System Health Assurance Plan was well designed, with acceptable procedures and oversight; however, because the majority of the System Health Assurance Plan reports were still under development at the time of our inspection, and because several unresolved questions remained involving calculations, analyses and testing, the NRC kept Restart Checklist Item 5B open pending the outcome of some more additional inspection.

Next slide, please.

Cover some continuing NRC activities. Under Organizational Effectiveness and Human Performance, our inspection in this area is reviewing the Licensee's Management and Human Performance Excellence Building Block, which is part of their Return to Service Plan and is an NRC Restart Checklist item.

This inspection is being performed in three phases. The first is an examination of Root Causes. The second is an examination of Corrective Actions for the Root Causes to ensure that FirstEnergy has identified appropriate Corrective Actions to address the causes, and the third is an examination of those Corrective Actions once they are in place to assess the effectiveness prior to restart.

Phase one of the inspection is complete. Phase two is under way. The inspection is being conducted by three inspectors and should be completed within the next week or so. The third phase is expected to be conducted as Licensee activities are completed in the upcoming weeks.

NRC issued ~~an~~ inspection report Number 02-15 on February 6th, 2003 and provides an update, status update in this area.

Under System Health Design Reviews, this is an NRC inspection of the Licensee System Health Assurance Plan I discussed earlier. We continue to perform inspections of this area. The inspection is being conducted by two inspectors, and is scheduled to be completed in the upcoming weeks prior to restart.

Under Safety Significant Program Effectiveness, this is an NRC inspection that is reviewing the Licensee's implementation of their Program Effectiveness Building Block. Our reviews include assessing the effectiveness of the Boric Acid Corrosion Control Program, the In Service Inspection Program, Reactor Coolant Unidentified Leakage

Program, Plant Modifications, Quality Audits and Operating Experience.

The inspection will also evaluate the Licensee's program for assuring completeness and accuracy of required records and submittals to the NRC. Three inspectors are reviewing the area, and except for the reviews of completeness and accuracy of required records and submittals, the inspection should be complete by the end of next week.

There are two Resident Inspectors stationed permanently at the site, who inspect a broad spectrum of activities, and that is characteristic ~~as~~ of all our sites at the NRC. They primarily look at areas of operations, maintenance and testing on an ongoing basis, and they issue inspection reports every six weeks.

We're also performing an inspection of radiation protection and it's also a supplemental inspection.

I mentioned earlier the findings associated with the inadequate radiological controls during steam generator work in February of 2002. We are performing a follow-up inspection to ensure that the root and contributing causes are understood by the Licensee, that they independently assess the ~~extended~~ extent of condition, and ensure that their corrective actions are sufficient to address the root and contributing causes and prevent recurrence.

We're also reviewing the scope, depth and quality of the Licensee's Radiological Controls Program and associated corrective actions, and we are reviewing the readiness of the Radiation Protection Organization to support restart and normal operations. Four inspectors are reviewing this area and the inspection should be completed by the end of next week.

We're preparing for a couple of upcoming inspections. First of which is the Integrated Leak Rate Test Special Inspection. We are planning to perform a review of the plant's integrated leak rate test of containment. The test is intended to show the leak tightness of their containment vessel. Our inspection is scheduled to be conducted by two inspectors from March 17th through March 23, 2003.

We're also preparing for an Emergency Core Cooling System and Containment Spray System Sump Inspection. That inspection is intended to review the design and implementation of modification made to the emergency core cooling system and containment spray system sump. That inspection is scheduled to be conducted by one inspector from our headquarters office from March 24th to April 4th.

And, we're preparing for Corrective Action Team Inspection to review the corrective action process at Davis-Besse to ensure that it's being effectively implemented and appropriate corrective action is taken to prevent recurrence of problems. The inspection will include a review of restart corrective action items to determine if items required to be accomplished prior to startup of the plant have been correctly characterized and actions have been completed in accordance with the Licensee's and our NRC requirements. This is an extensive inspection, which is scheduled to be conducted by 8 inspectors from mid March to mid April.

This briefly summarizes the activities that NRC currently has ongoing. The inspections I covered address part of our Restart Checklist, which is, as I mentioned, a listing of the issues that need to be resolved prior to restart of the plant.

So, with that, I'll turn it over to FirstEnergy.

MR. MYERS: Good afternoon. I would like to make a statement concerning the Preliminary Significance Assessment finding of red. It is our intention to respond back and agree with that finding; we're in complete agreement.

We're also in the agreement with the scientific finding which related yellow. However, due to the breadth of the issue, we agree it was red, and it is our intention to discuss the strong actions that we've taken since the event of February of last year. So, that's our position.

With that, we have five Desired Outcomes today that we would like to accomplish. First, Craig, Kathy and I would like to provide you with a status of our milestones since the last meeting from a hardware perspective and a management perspective.

Second, Bill Pearce will provide you a status of our Safety Culture, Safety Conscious Work Environment activities; and then he'll provide you some perspective of some of the Quality Organization's observations since our last meeting.

Third, we'll provide you an update of several of the Building Blocks. Bob Schrauder will discuss System Health. Lynn Harder will discuss Containment Health. Clark Price will provide some views of our Restart Action Performance. That's on the graphs. And, Jim Powers will discuss the Program Compliance.

And fourth and finally, hopefully this time we'll get around to Greg Dunn. We're looking forward to that Return to Service Schedule. With that being said, I would like to talk about the Return to Service Plan progress since the last meeting.

Since last meeting, we have accomplished several milestones in returning the plant to service. I would like to take a few moments to summarize some of these accomplishments in our programs, and in our plant activities.

First, we start our preparation for fuel load. As part of that activity, we performed a thorough inspection of our reactor vessel. We found a small amount of foreign material, including a small cap screw in the bottom.

We formed a Decision-Making Team using our Nuclear Decision-Making Operating Procedure. We made a decision to remove our core support assembly, so that we could perform a thorough cleaning of both the plenum and the reactor vessel itself prior to moving forward. This is an infrequently performed activity with significant potential at our station because of the high potential of radiation exposure; and also, the plenum weighs about 140 tons.

The core support assembly is a container that's used to support the reactor fuel itself and the alignment of the reactor core assemblies. It is a very activated, and took us about five days to remove that assembly and return it to service, but I think it demonstrates a proper safety culture at our plant.

After cleaning the reactor vessel, we began the core load, if you will, of 177 fuel assemblies on February the 19th. As we told you in our last meeting, we had developed a core load pattern to reduce a known design issue of fuel grid, fuel grid interaction, and reduce the damage to those grid straps due to that interaction.

With only four fuel assemblies remaining to finish our core reload, we did have interaction of two assemblies. We stopped. We formed a decision-making team, using our Decision-Making Nuclear Operator Procedure and performed a detailed inspection of the assembly being loaded. Additionally, we removed the assembly with the interaction. We did find some minor damage to one of the grid straps. We spent three days bringing in Framatone to perform the repairs of the damage assembly. Once again, demonstrating good sensitivity to the safety related activity.

This slide shows our fully loaded reactor core. As you know, the fuel assemblies, fuel assembly is normally out of the, in the core for about three cycles or six years. The shiny fuel assemblies observed here are the new fuel assemblies and represents about one third of the core, core load. We completed our fuel load on February the 26th, 2003, error free.

Our new reactor head is now sitting on the reactor vessel. We are ready for Mode 5, which means the nuclear reactor is intact. This week, we'll be installing the new manways on the steam generators. At that point, the reactor coolant system, as well as the reactor will be ready to be returned to service. Once again, there is much more to do before we do that.

Several months ago -- next slide. Several months ago we told you about a Flus Leak Monitoring System that FENOC was planning to install under the insulation of our reactor vessel. This option is unique to the industry. The Flus System demonstrates our commitment to improving the station's operational and safety margins. At this time, we have installed the system and we'll be testing it during our upcoming first heatup of the plant.

Craig Hengge, our Project Manager, will provide you a status of the system. As you know, in previous meetings, we were not sure we would be able to buy this equipment, much less get it installed. Once again, we think that's a positive approach.

We have completed many other activities this month. We have performed the Safety Features Actuation Test to prove that our safety related equipment would respond as designed.

We completed our Integrated Diesel Testing to assure that the diesel would start and load to all the emergency core cooling water system equipment. We instrumented the diesel to monitor both the voltage and frequency, and did find some voltage and frequency issues, drops in voltage and frequency that were not expected and were analyzed as we speak.

We improved and implemented our Improved Corrective

Action Program on March 1st, 2003. This program and the changes ensure that the proper classifications of condition reports are made and that their proper evaluations get completed. This procedure is critical to the restart of the plant and its implementation.

We implemented our new Decision-Making Nuclear Operating Procedure and Problem Solving Procedure this month also; and we'll talk about that later on in the meeting.

Next slide.

We have installed new containment air coolers with stainless steel coils. Each of the three cooling units has twelve new cooling coils. You can see them there.

We also installed a new stainless steel air plenum below that directs the air to the coolers. We are presently experiencing some problems where the service water trees that supply cooling water to the units. We will not be satisfied until we get the design so that it is both robust and maintainable.

We're completing our, an upgrade of the long term problem with the containment decay heat pit. We have lined this pit with stainless, as shown in the picture. It is now a decay heat tank. Once again, we believe the upgrade demonstrates Davis-Besse's commitment to ensuring safety related equipment receives the attention it deserves.

We spent six days performing a Mode 6 Restart Readiness Review to ensure that our engineers, our mechanics, and our managers all have a common understanding of our readiness for fuel load. We believe that effort, that our effort to continue to support the performance of our scheduled activities are necessary, but safety and doing the job correctly the first time is the gate that we must pass through to go forward.

Now, let me turn the meeting over to Craig Hengge who will perform our new Flus Leakage Monitoring System. Thank you.

MR. HENGGE: Thanks, Lew.

Good afternoon. My name is Craig Hengge. I've been an engineer over at Davis-Besse since 1981; had a variety of responsibilities, a lot of which have been involved with project management.

One of my responsibilities this outage has been overseeing the activities associated with inspection and remediation of the lower portion of the reactor vessel.

As you'll recall when we did our initial inspections back in April, we identified some staining down the side of the vessel, which obscured the view of some of the incore nozzles on the bottom of the vessel.

I'm here this afternoon to update you on two of those activities. One, as Lew mentioned, we committed to pursue installation of the Flus Leak Detection System. I'll give you an update on those installation activities, as well as a brief description of the system. As Lew mentioned, we're the first in the country to install this system and we're pretty excited about its potential.

First, I'm going to talk about some leak detection testing that we also committed to pursue down at Framatone. And the purpose of this testing, as you're aware, we committed to do a Mode 3 full temperature and pressure test as a way of confirming whether or not we actually have any leakage down at the bottom of the vessel.

As you recall, we had done some sampling and analysis of those samples, and the results of those were inconclusive. One of the things we wanted to determine was, given the annulus configuration on the in-cores, what type of leakage down there would we expect would result in visible deposits at the surface of the vessel which we can visually identify at the conclusion of our test.

We were also curious about what other types of chemical residue might result from the leakage from those nozzles. We were also curious to take those results to compare back to our samples and see if they would add any further clarification on the results we got from our earlier samples.

To accomplish this testing, we built a ~~1-2~~ 1 tube mockup down at Framatone that would pressurize the full RCS temperature and pressure. The actual tube we used was actually a four-inch diameter tube, as opposed to the one-inch diameter that the tubes actually are. We did that to accommodate using capillary tubing to actually control the leak rate that we were simulating.

We feel the large diameter is conservative and that it gives the leakage residue more volume to accumulate in before it's forced to the surface where we can detect it during our post test inspection.

The leakage we detected, we simulate a leak in the tube as opposed to the leak in the weld. Again, we thought that was conservative, because a leak through the tube is going to impact the vessel surface, dissipate its energy; whereas a leak in weld, which we think is a more likely scenario given the material, the leakage there would tend to eject material up towards the surface which would enhance our ability to detect it.

We ran a number of tests, as indicated on this slide. We varied the Boron concentration, the leak rate and duration. The first four tests were eight hours in duration. Two principle Boron concentrations. The 2680 was representative of the Boron concentration we expect to have during our Mode 3 test. We ran one test at 1134 ppm, which is what we expect to have prior to our midcycle outage.

We picked those numbers to get a feeling as to, for different Boron concentrations, how we expect that to affect the residue that might be at the surface.

We also monitored several leak rates as indicated, .015 being the highest leak rate. We managed to get the leak rates down to .0004 gallons per minute, which equates to slightly over half a gallon per day.

To achieve that leak rate, we actually went back and flattened a portion of the capillary tubing that we had installed to get a leak rate that low.

For all four of those tests, at the conclusion of the eight hours, we were able to identify visual source of, visible residue on the surface, both on the tube and the vessel surface.

We committed to do one longer test. We had hoped to run the last test for 120 hours. Since we already had visual results from the first four indicating they would result in residue at the surface, we attempt to get a lower leak rate by actually running the capillary tube through a milling machine to flatten it out to try to get a lower leak rate.

And, we were successful in getting a lower leak rate during the cold testing, but when we put the capillary tube into the system, our initial leak rate was actually a little higher, .0006 gpm, but it was very erratic during the test; and at 47 hours, the leak rate went to zero.

We terminated the test at 55 hours, and determined that the capillary tube we had built had actually clogged. That's what caused the termination of the leak rate. But again, at the conclusion of that, that test number 5, we did have visible residue again at the surface, both on the vessel surface and the tube surface.

The other significant result we got from all of these tests, one of the things we noticed as we were capturing the leak-off from the test, we noticed the Ph continued to decline of the liquid we were capturing during the duration of the test.

At the conclusion of test five, what we determined is that the lithium that was in the liquid was not coming clean with the leakage; it was actually staying at the vessel surface. At the conclusion of test five, we actually identified lithium concentrations at the tube and vessel surface of 17,000 parts per million.

That's important to us for two reasons. One is, one of our concerns was, if we were to get a leak late in life where we have very little Boron concentrations would there be some visible residue, some identifiable residue that we could trace back to that. The lithium now seems to indicate that that would be a clear fingerprint that would be a conclusive indicator of a leak.

The other thing that will be helpful for us, when we go back and look at the samples that we took back in June, one of our inconclusive results was, due to lithium concentrations up to the 10,000 ppm range that we got in one of our tubes, but again that's far below what we saw even following this 55 hour test.

MR. HOPKINS: Craig, I have a question. Do you have any pictures of the visible residue from this test you did here that we could see?

MR. HENGGE: I didn't bring any with us, but we are looking at coming to Washington to present more detailed results of this test activity.

MR. HOPKINS: Okay, thank you.

MR. GROBE: Do you have a time frame for that?

MR. HENGGE: I think we're looking at later this month, somewhere around the March 28th time frame.

MR. GROBE: Okay. The sooner the better.

MR. HENGGE: I understand.

Next slide.

I would like now to talk a little bit about the Flus

Monitoring System that we're going to be installing.
Again, as Lew mentioned, we're the first utility in the
state to install this system. This is a state-of-the-art
system.
MR. GROBE: Craig, One more
question. I apologize. I'm not familiar with how you
would measure lithium. How do you measure that? Do you
take a wipe and then -- how do you get a lithium
concentration, in a residue?
MR. HENGGE: We took wipe
samples of the surface, surfaces that were outside the
annulus at the conclusion of the test.
MR. GROBE: And what analysis
technique is used for that?
MR. HENGGE: I believe they use
ICP.
MS. FRESCH I'm sorry, I
believe they use?
MR. HENGGE: ICP. I used to --
if there is any chemists in the audience that can help me
out, I don't remember what the acronym stands for. I'm not
a chemist, sorry.
The Flus System as mentioned will be the first to be
installed domestically. The system has been installed in
twelve other facilities; ten over in Europe and two in

Canada. It's had a very successful life so far from a reliability and detection standpoint, in terms of being able to detect leaks in the vicinity of where it's been monitored.

Flus is an acronym. I'm not going to embarrass my German by trying to pronounce it. It stands for humidity leak detection system. A couple of the words are fairly close to our version, the other two are not.

Next slide.

Again, where we're installing the system is to monitor the under vessel portion of our reactor dealing with the in-core. It's a fairly simple system to install; three cabinets and conduits and tubing. The actual implementation is only going to take us about three weeks. The issue of concern for getting it installed was getting the equipment here and getting the design done, and we were successful in accomplishing both of those.

The element identified there is kind of the heart of the system. What this is, is a piece of the sensory tubing. The sensor element depicted there, what that actually allows -- it's more coil than actual sensor, but allows the dry air that is inside the tube to communicate with the ambient air around the area where you're trying to sense for a leak.

What it allows is humidity or moisture in the ambient air to diffuse into, saturate the air that is inside the tube. And these ~~senator~~ sensor elements are located about every foot or two on the sensor tubing that you mount in the area you're trying to monitor.

And, where we're going to have these installed is two areas. They will be installed in a ring underneath the reactor vessel. They will also have a short section of sensor tubing mounted in the cavity area, to monitor ambient humidity in the cavity area. I'll spend a little more time about the principle of operation in a later slide.

The system itself has eight available channels of which we'll only be using one, which is one of the reasons we're kind of excited, because it does have the capability for future expansion. Once you have the cabinets installed, really to utilize additional channels is just a matter of running some additional tubing to the other areas you want to monitor.

The expected sensitivity of the system is between .004 to .02 gpm. And the principle difference between that is how tight your insulation is around the area that you're trying to monitor.

We are going to be doing an actual sensitivity test of the system when we do the commissioning test during our Mode 3 Test. What we're going to do is we're going to have an extra tube actually mounted to allow us to inject a known quantity of moisture into the bottom of the vessel. We will begin that test actually at .002 gpm. We can step that up, so we can monitor how a system responds to a known leak rate. We'll use that to help set the system up when we return to operation.

The last slide I'm going to talk about is a schematic of how the system is laid out. As I mentioned, there is three cabinets, two of those will be mounted inside containment. Those cabinets are connected by tubing to the sensors that are mounted underneath the reactor vessel, as well to the sensory tube that is going to be mounted in the cavity area.

How the system works is periodically dry air is purged into the tubing, forcing out the air that's been in the tubing. As that air is forced out, it's forced through a humidity detector, which calculates and produces a humidity profile of the air as it returns.

At the beginning of the curve cycle, the system injects a known humidity spike, called a test spike. That's used for two reasons. One is it helps calibrate the system when it sees it on its return, it knows what that spike is. It also tells it when the first cycle is over.

What we'll be able to do with these humidity profiles, once we establish a known profile, what would happen is, if you got a leak in the area that you're monitoring, obviously the humidity and moisture content is going to change, it's going to become much higher. That will be reflected by the humidity profile increasing with time.

One of the things we'll do with the information we'll get from our threshold test is calibrate how that humidity profile change, or given the leak rates we're going to simulate during our test, we use that information to set up alarm set points. So, if we were to get a leak in the area at a known leak rate and a known humidity threshold, we would get a LOCA alarm that we can take action on.

The other cabinet that will actually monitor and track and be able to trend the humidity profiles, we mounted outside of containment and they're only accessible to our personnel.

MR. GROBE: Does this give you the capability to identify which of these sensor elements, since it's purged over time and you have this spike; can you tell which sensor element is detecting the higher humidity?

MR. HENGGE: We're going to determine that. Dependent on how you set up the first times. If you have the first times fairly close together, it does give you the accuracy where you can really pick up which individual sensors, but you lose some sensitivity by increasing that.

We're more interested from a sensitivity standpoint on going to the longer purge time to detect any leakage, much less than, more so than we are interested in which sensor is picking it up. But the difference, we would be able to sense a difference between what we're seeing underneath the vessel and what the RST, the Root Sensor Tube will be detecting. We built that in, because we put a delay coil between the two sensors.

MR. THOMAS: Did I understand you correctly when you said this system wouldn't be on line and calibrated during, for service during the NOP and NOT Test, that you're actually calibrating it during that time; is that correct?

MR. HENGGE: Correct.

MR. PASSEHL: At the time of plant restart, will you have the alarm functions working and the indications in the control room that you would normally expect to have, or once the system is up and running?

MR. HENGGE: We'll have procedures in place for the system, we'll have alarms set. We will not have an individual alarm in the control room.

Right now, we're looking at a computer alarm that would be available in the control room.

MR. PASSEHL: And will the profiles, will they be available like on the plant process computer or how eventually will you have that?

MR. HENGGE: Profiles will be locally generated on the computer in the process cabinet that we can retrieve locally at that computer. I'm not sure if the system is capable of generating that on our process computer. That's something we'll be looking at.

MR. PASSEHL: Thank you.

MR. HENGGE: Any other questions? Thank you.

MR. MYERS: Okay. I would like to take a few moments to discuss a new Nuclear Operating Procedure that we are using to provide a systematic approach to addressing our station issues.

This particular procedure has been effectively implemented at our other two plants. And, if we had had the system, this process in place here several years ago, I think our approach to asking questions, harder questions on the Boron that we found on the reactor head, we might not be here today.

The problem solving and decision-making procedure was already effectively implemented, once again, at our

Perry and Beaver Valley plants. And when we developed it, we used the best industry experience that we could find to develop this procedure.

Let's take a few moments to discuss the purpose. The purpose is to ensure the plant issues are addressed consistently and effectively without consequences to plant safety or reliability.

Now, what does that mean? We do a lot of troubleshooting on the plant while it's running. And understanding what we're doing in preventing errors is very important. That's what that's about.

We, the purpose is to evaluate the significance of the issue and the potential impact on nuclear safety. What you see is, we'll take each issue and categorize it, and finally to determine the level of management approval based on the significance of the issue.

Next slide.

As you remember, we defined Nuclear Safety Culture as characteristics and attitudes that ensure that the organization and the people provide the correct attention to safety-related activities. Pretty important, both the organization and the people.

In this procedure, we characterize issues as either low, medium or high significance. A low significance issue has the following attributes. No personnel or radiological issue should be present. Not likely to cause damage to plant and components or systems while we're doing our troubleshooting or testing. Not likely to effect the operations of the plant or an increase in the probalistic safety assessment, risk assessment, if you will.

Medium significance, next slide.

Now we're going a little more towards the safety issues. There is a potential for personnel or radiological concerns here. Without controls, one could cause damage to plant equipment; without controls. That's not unusual for us to be troubleshooting what would cause a reactor trip or something like that. Controls required to prevent undesirable change of state of components -- no plant transients. When we're troubleshooting, out doing tests, we should prevent plant transients. Often put jumpers in, pumping water to different locations. So, that's a question we have to ask. And finally, reevaluation of the risk associated with the activity.

High significance activity is one that could cause damage to critical plant equipment, or could result in either personnel or radiological safety issues. Then finally, without proper controls, will not result in reactor changes, generation or runback, runbacks of power. So, you have to have those controls in place.

Next slide.

The pride of this process is that we form a team each and every time when issues arise with our best people to work through the six principles shown on this slide to make, and then finally to make recommendations to our managers or our senior managers, management team, if you will, based on the significance.

Now we recently used this several times. We have consistently used the process over the past several weeks in addressing the issues; for example, the high head safety injection pump or the leak that we had. We had a leak on one of the nuclear instrument tubes prior to flood up. And then finally that was an option; we formed a team when we removed the upper plenum that I talked about earlier.

So, once again, this is a new FENOC procedure that we have in place. It's a Nuclear Operating Procedure. It's important that we demonstrate that we take this, this approach as part of our Safety Culture. Each and every time we have plant issues, we use this procedure religiously. That's the reason I wanted to talk about it today. Thank you.

MR. GROBE: It sometimes is hard for folks to understand the importance of something like this. I think your initial comments regarding Safety Culture were very appropriate.

Good people can make bad decisions because they didn't carefully approach the process of making decisions. I haven't seen many procedures like this in the past, but I think it's very important that you put something like this in place and it just is a continual reminder of the importance of discipline in decision-making for a high risk activity like nuclear power plant operation.

MR. MYERS: Even on something like, you know, the Boron on the head, I think if we went through a thorough process of asking all the hard questions, we would have come up with a conclusion that may not have come from the managers. So, probably would have taken a different approach than what we did and may not be here today.

So, I agree with you, from a Safety Culture standpoint, demonstrating and using this approach consistently every time is an important step. Thank you.

MR. GROBE: Any other questions?

Craig, I thought of a question. I apologize for coming back to you while Lew was talking, not that I wasn't listening, Lew.

I don't recall a discussion of using chemical wipes after the NOP/NOT Test. Is it your plan now to use chemical wipes as well as visual inspection following that test?

MR. HENGGE: Yeah. Very good

point. One of the issues that I have approached with Framatone, one of the concerns I had was the amount of residue we expect to see could be very small, and we know when we were doing our vessel cleaning activities, pressure washing, that we probably managed to pack some of those old deposits up into the crevice area. And when we heat the plant up and have our Mode 3 test, go through thermal cycle, some vibration, we expect to see all those nozzles; some of that debris is going to come back out and end up on the tubes.

We want to be able to differentiate that stuff from something that might be indicative of a real active leak. What we're going to use is the results from these lithium concentrations to accomplish that.

Before we do the Mode 3 test, we're going to go down to a number of tubes and actually take some wipe samples from the surface of the vessel and the tube, use that as our baseline, and we'll repeat that on those same suspect tubes, as well as any others, and use those results to verify whether any deposits that we see are indeed old or new.

MR. GROBE: Okay, very good. Thank you.

MS. FEHR: Good afternoon. I'll start out by introducing myself. My name is Kathy

Fehr, and I've been out at Davis-Besse since 1986, and I'm the Observation Program Owner at Davis-Besse.

I have my Associate's Degree in Nuclear Power. I have a Bachelor's Degree in Business Management. And I'm currently working on my MBA.

I've had various positions at Davis-Besse since I've started out there. I have worked in Emergency Preparedness; I have worked in Engineering, Operations and Performance Improvement.

I've been working on the Observation Program for over two years at Davis-Besse. It's a FENOC program. And we have the program implemented at all three sites, all three FENOC sites. We implemented the program at Davis-Besse in September of 2002.

The purpose of the Observation Program is to provide management oversight on activities and influence desired behaviors.

What I wanted to do is go over some of the categories that we have on the Observation Program, some of the, or some of the answers when they are out observing. Some of them will have satisfactory -- we have satisfactory coached, unsatisfactory coached and satisfactory.

The satisfactory means the observer saw conditions that meets or exceeds expectations and no comments were made by the observer.

The satisfactory coached means it meets or exceeds expectations, but comments were made by the observer; would probably be the positive feedback and interaction with the field.

Unsatisfactory coached is when we provide feedback for areas of improvement and we influence desired behaviors.

And what I'll do is I'll give you a couple of examples of some unsatisfactory coached, so you can see what we see.

One of them, an example of unsat coached would be if an observer was watching a prejob brief and the briefer started the brief without a checklist. We had an observer stop, have them use the checklist, and correct the situation right on the spot.

Another example would be, we had the Operating Experience Program Owner at the, at a prejob brief, and there was no operating experience provided in the work package. That resulted in an unsatisfactory observation.

Another example is when the observer saw a hard, a person working out in the field with his hard hat turned around and his brim was on the opposite side it should have been. The observer stopped him, told him that the FENOC safety manual had him to wear it the proper way. And they did fix the situation right on the spot.

Another example is we've had an observation where the operator was using slang to identify a component.

We also have an unsat observation that was conducted by Bob Schrauder.

Bob, did you want to talk about CACs?

MR. SCHRAUDER: I had done an observation out in the field on the work in progress on containment air coolers. It was during that observation that we observed plant workers actually climbing on the equipment, which is not acceptable under any condition, but in this particular one, it was particularly troublesome, because the connections from service water to the containment air coolers is a bellows-type arrangement made out of stainless steel. That has very limited capability for flex. It's made to flex, so it can take up thermal expansion on the supply line to it. And it's only rated for about two hundred pounds of pressure on the thing.

The individual climbed and actually stepped right in the center of the bellows, which required a significant amount of preanalysis and in fact some change-out of some of the bellows on the containment air coolers.

In that instance, I was able to bring the gentlemen down off of the cooler. I did query him as to whether they had been sensitized, first of all discussed policy pretty clear; you don't climb on plant equipment, we use ladders and the like.

Talked to him to see, to get a sense of the workforce as to whether supervision had in fact discussed with him the sensitivity of the equipment that they were installing. Did not gain a sense that they were knowledgeable enough in that area. So, we went forward and talked to the supervisor also, got Design Engineering involved in creating a better installation approach and workability constructability.

So, that's an example of inappropriate actions in the field that we were able to observe and correct.

MS. FEHR: Next slide.

MR. GROBE: Kathy, before you go on. I'm glad you asked Bob to speak, because I had a note that I wanted to ask about containment air cooler work.

So, this program applies to contract workers as well as plant staff; is that correct?

MS. FEHR: They are not using it right now, the Observation Program.

MR. SCHRAUDER: But we do observe --

MS. FEHR: We observe contractors. We observe everybody.

MR. GROBE: All right. The contract organizations are not required to use it, but you use it.

MS. FEHR: Correct.

MR. GROBE: You've had a number of challenges with the containment air cooler work over the last several weeks at least. I was wondering if maybe you could comment on that a little bit, and comment on the effectiveness of this program in that context.

MS. FEHR: I have an observation that was conducted by the Human Performance Advocate too on the cast. And, I brought it with me.

And this happened on 2-4-03. And part of his observation, I won't go through the whole thing, but he said the copper fins on the new cooling coils have been dinged, and they appeared, or appeared over the last couple days.

So, what they did right away, immediately they roped off the situation, and that way it wouldn't, people couldn't get in there. Then they hung sound proofing blankets around all four walls of the CACs, so those are, that's an example of what they did with the CACs.

MR. GROBE: What I was trying to get at was a little more comprehensive. There has been a continuing challenge with quality of work on the containment air coolers, and I was wondering how the feedback process or the Management Observation Program feeds into a broader assessment that would get at this kind of an issue?

MR. MYERS: Yeah, we've seen several workmanship problems, problems with maintainability. I mentioned that on the, on the, what we call the Service Trees; the connections, waterline connections, which we're building in the field. And that's basically with our contract vendor.

What we've done since that time, we collected all those issues, sat down with Engineering already, looked at the Lessons Learned, for the next two we're installing.

Where there are some changes in the way we're going to build stuff in the field. There is also changes in the way we'll pressurize the system. We went out pressurizing the system after putting everything in place the last time. We're going to be pressurizing sections this time as we build it, to make sure it's leak free as we build it.

Also there is some questions about maintainability with the Service Tree Structure. What I say was, the Engineering Department really did a good job building it robustly, because it could never be moved, you know, the first one. So, it must be robust.

So, we probably don't want that, so they're going back and looking at how to make a bolted change down below that allows you to move the structure out of place in case you ever want to go pull a cooler or something like that.

So, we have collected those issues. I've already had one meeting on how we go forward here on the next two, and we'll see if we can't improve the performance there.

Okay.

MR. DUNN: Jack, I can speak a little about that from the work implementation. Part of what we learned from the Lessons Learned, we also utilized the problem solving decision-making tool when we captured up those observations and Lessons Learned to collectively look at that. And, as Lew mentioned, we have some constructability items where the design is good to respond to the post accident conditions necessary, but how constructable is that and how maintainable is that were some of the challenges.

What we found was some improvement opportunities and the methodology in which we do the installation. So, we're changing our methodologies for installation. We also had and instituted stop work activity on the actual conduct of the containment air cooler service water pipe side, got the craftsman involved with that problem solving decision-making team. So, actual participation of the craftsmen, so that they could provide their input as to what the corrective measures going forward are.

Many times we pull the engineers together and come up with a solution as to how the craftsmen can do work better, and failed to bring those folks into, bring the customer, if you will, into the participation role.

So, this instance, we definitely made sure we accomplished that and came up with a collective corrective measures which involve both how we want to do the installation in the field and how the design will be conducted, so that the workers have a more simpler installation technique.

MR. GROBE: Okay, thanks Greg.

MR. MYERS: I knew he would give better answers than I do.

MS. FEHR: Another thing we do for the Observation Program is we have focus areas and that's in scheduled observations, and I'll get to that in the next slide.

This slide represents the February results for the observation program, who is doing observations by title. You can see The VP/Director level did 7 percent of the observations. The Manager/Shift Manager did 18 percent of the observations. Superintendent was 11 percent of the observations. Supervisors, 49 percent of the observations. And the Other is 15 percent of the observations.

The Other would be Project Managers, or visiting people from the other sites, or maybe the Human Performance Advocates and stuff like that.

Next slide.

The next slide talks just in general what the total observations we had this month was 350 observations. Scheduled observations for February was 90 percent average participation, and that's the same as what we had in January.

Some examples of the scheduled observations that we do. We do them on a weekly basis. We -- I'll call the Human Performance Advocate. I'll talk to people in the field, find out focus areas we need to concentrate on for the following week. I'll then schedule the observations and notify the people that they do have an observation for the next week.

Some of the activities that we have chosen have been the activities that are going out in the field, going on out in the field, relating to the schedule. I schedule Ops hanging and restoring clearances, Ops turnovers. We do containment walkdowns, check for FME. We sit at the entrance of the RRA entrance and make sure people know what they're doing when they go in there and they're sure of themselves. Check for housekeeping, safety in PPE. We do scaffolding checks. We do about any kind of observation, what the focus area maybe for the next week.

We also have special activities that are scheduled by Project Managers, which we've done, and use the Observation Program; and three examples of that would be the deep drain valve work, we've scheduled critical path activities, and we've also scheduled observations for fuel movement.

The next slide talks about the Condition Reports that we have. This is a live data base, so the numbers do change a little bit, but 6.21 percent of the February observations generated Condition Reports. I believe that number is up just a little bit right now.

The number is up from the January observations. And, actually on a year-to-date total, we have, I think it was 92 observations created; they generated CRs from observations.

Okay. The next slide talks about the coaching, and that's what I described earlier with the definitions. February we had 12.2 percent coaching, 9.4 was satisfactory coached and 2.8 was unsatisfactory coached. And the numbers there are for January, so you can see the comparison. We had 10.9 percent overall coached in January.