understanding of the motor's characteristics have been factored into the analysis using the latest industry software, which is validating the results to ensure electrical distribution meets its safety function.

And that is ongoing with a plan to support initially our mode change for the pressure testing. We talked about a mid June time frame for having that available, hoping maybe earlier because we have applied a number of electrical engineers to the project.

We have changed the project structure somewhat at the site from what you may have -- those of you who have been there may have seen. We brought our electrical superintendent from the Menkins organization, Dave Hemmling, and assigned him to head up this project, manage this project. He was a previous ~~RSO~~ SRO at the site and is very well acquainted with the operation.

Training, for example, has been one of his jobs in the past, so there is good leadership. We have also bolstered the team

composition of electrical engineering supervision from Stone & Wester as well as several electrical engineers to help with the data input process.

We are hoping all the changes are accelerating and, again, we should start to see preliminary results this week. One of the pieces of the electrical distribution system we didn't touch on is the DC systems, ~~225~~ 125 and 250 DC. There are calculations being prepared there as well to upgrade the design basis in that system, and that is battery loading calculations and capacity fuse coordination calculations are going well. They are characterized as no problems with the system being found through that process, but the calculations are being prepared, for the record, so that the design basis is upgraded.

MR. PASSEHL: Just a question on that. Do you anticipate any modifications you are going to have to make to the plans a result of this electrical distribution problem?

MR. POWERS: There is none currently identified that we know of resulting from this

analysis. We are making some changes in the electrical distribution system. One of the issues that we had that we were actually doing modifications on this week is under voltage relay setpoints and setpoint tolerances associated with that.

We found that the installed relays did not have a setpoint tolerance capability that would match the need in the plant, and I think we need the tech spec requirement for that, particularly the nine we are checking the relays out to a different type, and that was really separate from this issue of low voltage, so the answer is no, we don't see any modifications yet.

I would hope I would be able to report in the next weekly status update to you what our status is on those preliminary results.

MR. GROBE: My flight was canceled Monday morning and I missed the ROP meeting, but I was reviewing the notes from that meeting on the plane coming back this morning, and it seemed to indicate in the discussion on this issue that

there may be some operability determinations that are made for Mode 4 different than the other modes?

MR. POWERS: Right.

MR. GROBE: Could you explain that a little bit?

MR. POWERS: The plan that we have to approach this problem is several stages, actually three stages, the first of which is to provide an operability determination basis to allow the mode change to Mode 4. And the reason for that is so we want to proceed to Mode 3 and do the pressure test of the plant that we have described. And that operability determination is based on the 70 largest, most significant loads in the system being factored into the model and looking at the results of the models, providing engineering technical basis on that analysis to support the Mode 4 change.

Subsequent to that, the team is going to be continuing to factor and validate all loads on the system, as you get down into very

small loads, small motors and such, and all that is going to be factored in for the next operability determination, which would be to support the Mode 2 change.

So at that point we will have to look at the calculations completed with the loads validated, and subsequent to that, the third stage is the documentation of the total analysis, all calculations laid out, what we call all the road maps associated with it, and laid out for the engineers to encapture and record all the details provided in that. So it's three different levels that we've got laid out, Jack.

MR. GROBE: I will have to say, I don't understand what you just said, but I'm not sure I can understand it in this context, it's going to take some discussion. But even though you have -- might have a small load on the system, when it comes to ~~breaking~~ breaker fuse coordination, it's really irrelevant if whatever isolates that small load is not properly coordinated, how can you conclude that 4160/480 volt systems are operable since if

you are not coordinated, you might have a higher level breaker open and take away a number of those?

MR. POWERS: Well, we think from the work we have done today, that the 70 loads that are being factored in are going to give us a good picture on the capability of the system, and, you know, we will get into details with the coordination. You're right, I'm going to have to get my electrical team to give a brief --

MR. GROBE: And they probably shouldn't talk to me, they should probably talk to Rob.

MR. POWERS: That's fine. We've got that laid out with logic and rationale, how we are going do this.

MR. GROBE: Again, I appreciate your logic for terminal voltage issues, but I don't understand breaker fuse coordinations, don't understand your logic, and Ron I'm sure can get into a lot more detail with you folks.

MR. LEIDICK: The impression is if we have a weak link in the system and understand where those

are and how those go down through, to approach it that way, and then if you identify where the weak links are, then you can press on with the rest of it. That's my understanding of the issues, but let us follow-up and get the right people together in conversation.

MR. GARDNER: Sure.

MR. POWERS: And some of the discussion we have had is with these initial runs, and not only give us the voltage distribution, but we will find a load flow, and that will factor into a sense of the breaker isolation qualifications coordination, so I believe that the engineers think that we will have a first cut at that from these initial 70-load runs, Jack.

We will provide you with details on that and have a dialogue.

MR. GARDNER: Yeah, I'd like to have that. Usually you define your fault currents and plot your fault currents and breaker currents characteristics which are fixed based on the breaker type and fuse type and cable type, and you

take a look at what you've got, so it would be interesting to have a dialogue.

MR. POWERS: Okay.

MS. LIPA: At what point -- I have a question about process, and I want to make sure I'm clear. It sounds like what you're talking about is an operability evaluation for Modes 3 and 4.

MR. POWERS: Uh-huh.

MS. LIPA: So you have learned that you would need a tech spec change that would be allowed in the process.

MR. POWERS: We don't believe it would be a tech spec change. At this time the plan was for an operability determination.

MS. LIPA: For that 70 loads, that's all you need to consider?

MR. POWERS: For the system, that would give us an adequate sense of the system's performance capability. We'd be able to determine what would be operable.

MS. LIPA: That's all the equipment that's

required to be operable for Modes 3 and 4?

MR. POWERS: That's right, that's right. Although I believe that analysis would be heading towards all modes, it's not necessarily restricted to those modes, so in that I will need to get more detail to you on the structure of that operability determination.

MR. GROBE: Now I'm confused. That was a little different than what I thought I heard. The smaller loads are loads that you don't need for Modes 3 and 4, are those going to be isolated then?

MR. POWERS: Not necessarily, Jack. The loads that -- the 70 major loads are the biggest loads that would affect the voltage of the system. The smaller loads can -- perhaps would be needed during Modes 3 and 4, but we are judging the performance of the system based on the 70 biggest loads which would affect the voltage the most.

MR. GROBE: That's what I understood you to say earlier.

MR. POWERS: That's what I meant.

Any other questions with the electrical distribution system?

(No response.)

MR. POWERS: The next topic to discuss is air-operated valves. This was a program that was initiated during the course of the past year similar to the industry at many sites.

As an industry, we went through motor-operated valve programs where the design basis for the valve the in areas such as the pressure differential that they needed to function with as well as the electrical supply and voltage to the valves was detailed out in the design basis.

We are doing a similar program for our air-operated valves, determining the pressures they need to work against, as well as the pneumatic air supply conditions that they have and their actuator capabilities.

And there is a number of factors that go into this, not only air pressure that is available, but other things can become an issue,

and the overall functionality is assessed in great detail in design calculations, and 83 valves at the site were analyzed. These are our active, safety significant valves that were put in our program, similar to the issue initiatives consistent with those initiatives.

And as a result of the analysis that we went through, we found that there were 19 valves that had negative margin, meaning the actuator -- based on the conditions that were defined in our analyses, the actuator would not have enough capability to ~~stoke~~ stroke the value fully, at least with the margins that we feel are necessary to be satisfactory. And so as a consequence, during the current outage, there was seven valves that we are adjusting prior to restart, and there is 12 valves that are going to be modified.

And modifications consist of things like stronger springs within the valve, multi-port solenoid valves that pour the air more effectively to and from the actuator. And probably there is

one valve that -- which I would describe is the most significant valve, which is the makeup 3 valve, which is part of the makeup let down line. it's a containment isolation valve. On that one we are upgrading both the actuator and the valve body itself. And that modification is ongoing now. The actuator is being manufactured, we have a valve body at the site. We expect all that work to come to fruition on the 24th of this month. So it's very active, and we are in the process now of issuing design packages to the maintenance staff at the site to make these valve modifications.

There are ten valves in the population that we feel we want to increase margin to. We had our program criteria, and this is margin above the -- with a minimum required to do the safety function, and that currently the plan is restart activity, and then 54 of the valves demonstrated sufficient margin.

MR. GARDNER: When we are talking about margin increase, are we talking about that there is uncertainty that the air-operated valve would

function, or that there is a feeling that its timing would he be affected, and the timing of the function may be delayed, is it not working at all, or is it just that it will function, but it may not function at the time that was estimated?

MR. POWERS: It would be the latter. It would function, but there were concerns about the timing as well as I think in the industry in these programs there is margin that accounts for changes in friction and to provide further margin above the minimum to ensure it would work. So the timing of the function, how quickly it would function would be the way I'd characterize it.

MR. GARDNER: These affect numerous systems, right, important systems I assume also are part of numerous systems, including important systems?

MR. POWERS: Right. They are, as Bob described this, there is several of them that are involved in the component cooling water system, and those can connect component cooling water, but also air flow to the heat exchangers so the heat system is involved. These are the ones where we

have calculations that have been prepared, and we believe that they will demonstrate adequate margin.

MR. GARDNER: Okay.

MR. POWERS: Several hours are in different systems containment isolation valve, for example, that need to be have their actuators upgraded.

MR. GARDNER: I guess my point is that in the -- previously I think you mentioned that in other areas margin has been reduced, that's been something that you have noticed throughout the ~~plan~~ plant, that margin has been reduced, but typically things tend to function okay, even with the reduced margin. That is something we are looking at on a system basis as the cumulative affect on reduced margins, to see it as an AOV margin which is minor, but it's less than desired, but acceptable, it doesn't interact or contribute synergistically to other margins that have been affected, such that the system overall is being negatively affected?

MR. POWERS: I would say in each case the

margins that are built into the programs, the codes that are used to design the systems encompass, you know, the synergistic or collective affect that you have by changing -- if you need the code allowance for the system, the margin is already built into that, such that even meeting the code allowable without excess margin, you have already inherently built in capability.

The same thing would be the case with these AOVs. When you meet program margins, we have inherently built in additional margins, so I think on -- in the sum total we have got margin in the plant for that type of consideration.

MR. HILLS: The margin you are talking about as far as the ten valves you are going to increase the margin to meet the program requirement, does that mean the valves then as they exist today have enough margin to meet all licensing basis of N.R.C. commitments?

MR. POWERS: Yes.

MS. PEDERSON: On the 19 valves that had negative margin, have we covered each of those in

the previous discussions as far as impacts, or are there some others that we haven't talked impacts yet?

MR. POWERS: There is others that we haven't talked impacts. Several of them are isolated -- containment isolation valve locations. For example, there is containment isolation valves, those actuators needed to be upgraded. There is a valve that is a reactor cooling on the pump seal return containment isolation valve, there are 12 valves that are isolation valves, steam generator system, and there is also temperature control valves for return piping which will perform isolation valve function. And each of these, as we have determined, there is an operability issue with them. We have been issuing LERs. There is several of the valves that have been documented. In fact, one of the commitments that we had early on last year, based on several AOVs that we found fell short of the requirements. We have committed to complete this program prior to restart.

MS. PEDERSON: Have you finished your

reviews such that we have all the LERs we had expected to see from AOV reviews, or are there still some ongoing?

MR. POWERS: I believe we have documented them all in LERs, but I'd have to ask engineering one more time to be sure. The list that I have described here is, as we know the scope we have done the calculations, but I want to make sure we've got it thoroughly documented with LERs where necessary.

MS. LIPA: On the AOVs, have you shared what you learned here with your other FENOC sites and have confidence that there is also not problems at other FENOC sites?

MR. POWERS: I believe we have shared it with the other FENOC sites. I know our AOV -- in fact, Kenny came from our ~~Gary~~ Perry site to work at Davis-Besse several years ago, so there is a pretty strong link with the engineering system between the two sites, and also sharing of information similar to the AOV areas, motor-operated valves area, but I will go and

check on that one too to make sure we have got a dialogue going. I'll make sure it's strong.

MS. LIPA: Okay. Thank you.

MR. PASSEHL: I had a question on the adjustment to the seven valves you mentioned. I guess, are you waiting on plant condition to do that work, or I assume that is one of the significant work compared to modifying valves?

MR. POWERS: That's right. Given the priorities at this point are to ensure that valves can work once adjusted with its increasing to the program, the program standard, you know, expectations for margin, and the engineers right now are focused on modifications that are required and adjustments that are required to perform safety function. And following that they will go through the next set of increasing margin on those that need the full program to perform so the system conditions will dictate much of that.

MR. PASSEHL: Thank you.

MR. FARBER: Thank you, Jim. Most of what I'm hearing right now seems to focus on whether or

not the valve will perform a function under a given condition, whether it's got enough thrust to close against a flow or a ~~DM~~ DP. My question is, is there anything in this program that's going to address the other functionality requirements, for example, of the back-up accumulators that provide air for -- in this case nitrogen for the valves?

MR. POWERS: There is several valves that we are increasing or augmenting the accumulator sizes on, Marty, the service water 1356, 7 and 8 series valves are -- there is a set of those. And there is also the component cooling water valve we have talked about, which will provide additional accumulators there so the pneumatic supply is part of the assessment.

MR. FARBER: Thank you.

MR. POWERS: We can move on to the next topic. This topic we touched on earlier, the load analysis for the engine was not updated, and when we did our SFAS testing we recognized that we have not met our license in particular for voltage depth and time frame of the voltage dip as well as

frequency specifications that are included in the design standards that we adhere to.

And as I described earlier we have prepared a detailed model of the diesel generators. We benchmarked that actual field test performance of the diesel generator voltage and frequency, and then we have used that model to predict overall engine response that would be given in the full accident loading and have taken the results and looked at all the supply loads to assure that they will perform their safety functions, and we found satisfactory results there, so there were no modifications required in the plant to address this issue.

Although, we talked earlier there are some improvements that we are looking to make in the future with the governor system and potentially the diesel generator output breaker from an extent of condition standpoint. Maintaining our analysis up-to-date was one of the lessons learned, significant lessons learned that we have taken from the past years activities at

the site. Our latent issues reviews and system health reviews pointed out similar to what was done.

And I will talk on the following topic, design base validation program that had been done and calculations maintenance are important. There had been a practice of many disciplines in the past at the plant, when small changes were made, do that assessment against an existing calculation for that change, document the assessment and move on.

The problem becomes, as time passes and several assessments are done, the cumulative affect needs to be assessed and incorporated into the calculations, so the engineering has a full picture on what the cumulative effects of changes have been, and in many areas that needed to be done. The diesel generator loading is an example. The electrical distribution system is an example.

Ken Byrd's area with the -- what we would call the safety and accident analysis for the plant, we have done substantial work and we

have talked about with you in the past for things leading from our ultimate load sink temperature, the plant's cooling system, all the way to containment performance, and many of our more safety significant calculations have been upgraded through this process to latest industry standards and latest design status of the plants.

And in Ken's area, he's has managed well to get -- the vast majority of his calculations have been completed in his area. The electrical area we are still working to complete those calcs, but from an extent of condition, the calculations and upgrade process has been very active at the site, and are progressing through the significant calcs.

MR. PASSEHL: I just want to be clear on one thing. Your diesel generator ventilation is not significantly undersized, although you are going to add margin, two additional fans; is that correct?

MR. POWERS: Well, not exactly. I wouldn't characterize it as not being undersized, it is

undersized and has been from the day that we evaluated. During the tornado of 1998 that struck the site and took the off-site power out of the system, the site operated on the diesel generators. The room temperature was high, and subsequent assessment of that led to concerns for the lifetime of some of the electrical components, particularly realized the cabinets in the rooms and temperature in the cabinets where the engines are running in the long-term, we do need to increase the ventilation to the room, we want to do it for the sake of the margin.

At the time this '98 assessment was done, that proceduralized a tracking of the amount of time that the room temperature was elevated and that factored toward a change out, so it was more of a lifetime -- qualified life issue than a operability issue as we are finalizing our assessment of that, that continues to today, that that is the technical characterization of that issue.

Nevertheless, there is three

modifications that we are currently pursuing for those rooms to increase margin. The first is insulating the exhaust manifolds on the engine, and that design package is nearing completion, should be issued this week. Insulation is on order for that that is going to cut the temperature in that room by a number of degrees.

The second one is providing ventilation ductwork to the control panels that house the electrical equipment to make sure the temperatures are minimized in those panels. That is important because in the testing of the site we identified 40 degree temperature rises in the outside panel to the inside of the panel. So it gets hot inside the panel, and simple, small ductwork changes can help alleviate that.

And then the third modification we are pursuing is installing additional large fans that we have secured from our Perry facility. These were nuclear safety grade fans that had been procured and installed for Unit 2 at that site, and are no longer necessary as Unit 2 has been

subsequently abandoned, so we have brought those to the vendor for refurbishment. That's where I'm going now for modification, to install those in the room, and the plan is to have those operate based on temperature thermostat, and as room temperature rises, the fans would kick on and provide additional air coming to the room. Once we have reached that stage, we think we will have good deal of margin in the capabilities, but as it is now the HVAC system does not have the margin it needs.

MR. GARDNER: Also, it sounds like the HVAC system would limit your options as far as going to a new, more sophisticated governor that might have solid state components.

MR. POWERS: Right.

MR. GARDNER: With the relay, the old analogue type has lots of forgiveness there on temperature, and with your weak link analysis I would say, you know, the relays might be the culprit or the most susceptible component. If you change to a new system, that could change

dramatically.

MR. POWERS: That's a good point, and another good reason why it's better to build margin into the plant, allows us more flexibility for the future and resolves the problem effectively rather than simply analyzing them. So that's where we are on this particular one.

So we have a lot of work we want to do in the emergency diesel generator rooms, and that is going to occur after the pressure test we currently have planned, and we refer to this as divisional outages. The diesel generator trainees go into the room and do maintenance on it, we are looking for everything down to the oil leaks to make sure that those have been resolved, the ventilation system is upgraded.

In the past weeks, we have also been moving towards doing a ~~coding~~ coating project, went in the room to upgrade the ~~coding~~ coating on the wall and floor to bring it up to high standards for the future, so there is quite a bit of work we want to do in the area to upgrade.

MR. PASSEHL: So the diesel generator, then, is -- as far as outside air temperature, you are operable up to 85 degrees from Motor 5 and 6?

MR. POWERS: That's right, currently operable to 85 degrees. Then we are pursuing new modifications that will allow that temperature to rise ultimately back up and actually beyond the license basis for the plant, which I think is 86 degrees outside temperature.

So each one of the modifications have progressively more -- cover more margin up to full capability.

MR. PASSEHL: Thank you.

MR. POWERS: So in conclusion, on the remaining design issues, as we have discussed, they are -- given the amount of work we have done for review, these are four of the more significant issues that we are dealing with on the site, and resolving. Each one of them has a resolution path that's been defined and is doable, and so none of them are showstoppers, and we are working through them and the schedule supports our current restart

schedule that we have communicated.

MS. LIPA: I want to be sure -- I was expecting something on the SFAS relays that you -- I don't know if that is a design issue, so -- but if you can give us an update.

MR. POWERS: That is one we didn't have on our list, however, because that issue is -- did not originate from the design analytical reviews that we have largely been discussing here. The issue that Christine has raised is with a relay population that drives our safety features actuation system. There is a population of approximately 250 relays that were changed out at the site at the beginning of the refueling outage in February of last year.

Subsequent to that, with the testing program that's been done at the site that identified failures of several of the relays on our root cause analysis and systemic condition corrective action program indicated that there was a manufacturing issue with some of the relays, and also the application of the relay for the voltage

and current that they were applied to was a problem. And subsequent to that, the original relays that we had removed from the system and we removed the relays because of their age, and we have seen several age-related failures.

We removed them, and they were -- they have been held and are available and they are currently going through a testing program to determine their suitability to be reinstalled in the plant while we resolve and get another replacement relay manufactured for us.

Out of the population of 250 relays, 150 of the ones that we removed passed the screening process testing program that we have got. 83 of them did not pass that initial screening and we are currently evaluating those now. We are also in contact with several other of our industry peer plants that have spare relays that they can give to us. And the bottom line is at this point we believe we have enough relays to reconstitute the system. And then parallel with that effort, we are talking with a manufacturer

about doing another production run of the relays for our site and several other sites that use them.

The issue was -- the reason the relay was changed out to a different type is the model number had been discontinued, and so a different type was developed to be manufactured and tested and dedicated for installation in the plants. We want the manufacturer to do another production run of the original relay that was intended for the plant. They are indicating their willingness to do that, and several other plants that use that type of relay would like to have additional spares manufactured as well.

So that is a program that we are looking at now and having dialogue with the manufacturer to have that in place. So technical basis for the reinstallation of the relays is also in preparation for the testing program criteria that's been applied it. And the reason I know it's the appropriate thing to do at this time is being prepared and documented, so that will be

available for review.

MR. RULAND: Jim, this is Bill Ruland at headquarters. I have a question about, I guess, the programmatic issues associated with some of these design issues you examined. For instance, the emergency diesel generator loading issue, there is a question about the program going forward, how you intend to monitor and update loading going into the future? And if you examine these issues on that level, a number of them have programmatic implications, and I didn't see that come out very strongly in your slides, and I suspect you are addressing those, those programmatic long-term issues, could you talk about that a little bit, how that is being covered?

MR. POWERS: Sure. We have done some significant upgrades to the calculation control program, for example, in the program how we maintain calculations and how we revise them, what the criteria is for revision, and much tighter controls applied to changes within the plant and

how calculations are updated. One of the things that we found when we came on-site last year is the calculations at the site were essentially under the control of the disciplines in their areas, on the floor, available file cabinets, but we hadn't gone the extra step at our Davis-Besse site of coming up with an electronic calculation index, for example, and centralized control for document control function of the calculations, and so we are moving towards that now. So overall the program for control of calculations both procedurally, and just the physical control and accessibility is being upgraded at the site, and so there is a number of program improvements that are being made in this area.

MR. LEIDICK: I might add that at the other two stations it's being done as well. We are looking at that across the organization, the NOPs, operating procedures for the design area are really a top priority of ours, so we are getting those in good shape at all three plants.

MR. RULAND: Thank you.

MR. FARBER: Jim, you have spent a lot of time discussing the foremost significant issues that face you prior to restart, but do you have some sense that you could give us of the population of lesser tier significance issues that need to be resolved before start-up?

MR. POWERS: Well, there is a number of smaller tier issues that we are working through. As Bob described, it would be -- a number of condition reports have been issued over the past year. Each of those is being resolved and corrective actions being prepared. I would say out of the range of the 1,200 condition reports that have been issued, there may remain less than 50 overall between various engineering and technical organizations that remain to be done, and we are working off corrective actions, and when we talk about our performance indicators, we work off of what we refer to as bulk work.

But there are selected technical issues that we are working through that are below the level of these four that we feel are bounded

by the schedule for these four, and those are tracked both on a top priority list, engineer top 20 list, for example, at the site has just come up, are evaluated and then subsequently resolutions are identified. They drop down the list, and we have made a significant change to the site probably since the last time you were there, Marty, in terms of how we are controlling the work. We have been working from a corrective action program, essentially working through the lists of issues, working with a schedule.

Corrective action program applies to get issues done as we worked off the bulk original number, first identification of issues in discovery and investigation and working off resolutions to the issues. At this stage we are coming out of the forest and being able to see individual trees. And so the engineering top 20 list, the modification lists are now prepared, and we have assigned Mike Foss at the site, who is one of our directors at the site. He has been assigned as restart director, and one of his

primary functions is to help in the driving of these issues. And if you were to visit now, the conference room 209-210 out in the front building, which we refer to now as the plant support center, that room has been converted into a command center where all the various engineering issues that were reviewed everyday, we have review meetings about the issue with owners, they are required to have fragments, lay out the resolution. The issue management team provides some questioning on considerations that they have got, they are there prepared to answer the questions about the issues, that the issue is going to be successfully resolved on a timely basis.

So at this stage of the recovery, the change in our management to being much more focused on individual issues. While there were many of them, each one now is being brought in and focused on by the management team to assure that we are driving to completion, so that is helping us through that process.

MR. FARBER: Thank you.

MR. POWERS: The conclusions on the remaining design issues, as I just discussed, the resolution is being addressed by the corrective action program to ensure safe, reliable operation. And we are moving through that process now. Our work-off curves and progression at the plant continues to move us towards the upcoming mode changes.

The next topic I'd like to move into, and if I move through this quickly, is questions that you had on our 50.54(f) letter response. And this was in 1997 that the request was issued by the commission to describe the health essentially of the design basis at the plant, and each plant -- Davis-Besse was one that was required to respond on how that design basis was promulgated into the procedures that operate, surveil and maintain the plant.

And so at the time that that response was made, the assessments were done that -- on the status of calculations, and that response credited calculation improvements program

and system description development projects that were done in the mid-80s, during the mid-1980 term out at the site, and there was a lot of engineering activities at that time, and a lot of that was captured in system design descriptions and in calculations that were prepared.

And so we knew that work had been done. The results, though, in the assessment specifically excluded several topical areas due to previous assessments and inspections that had been performed. And these were areas that -- some of the areas that we have talked about, environmental qualification, high energy line breaks, seismic analysis and flooding. And the reason that those weren't looked into in great detail is because work had been done, inspection work or internal oversight self-assessments, a lot of it was believed that those areas had been surveilled in detail.

And we also committed as part of this 50.54(f) to initiate a design basis validation program because we knew were weaknesses

in calculations of assessments that had been done by your organization and ours. And that program was initiated.

So the program was worked through, the calculation basis for the maintenance rule risk significance systems was evaluated. I think we were in the range of issues that were -- with questions that were raised and documented on that, and that was -- open items were captured for disposition in various programs, corrective action program, corrective action tracking system and the Davis-Besse validation program tracking database, which was referred to in our request for assistance.

So based on the level of the issues, significance of the issues, it may have initiated a condition report or just a tracking item within the corrective action catch system. That is something that ought to be done, calculation needed to be clarified or updated, but there was not a high level of significance, safety significance to that action. So that was the

approach to this.

Now, as we went back and evaluated over the past year where we stood with the responses, we found out we did not follow through on a timely basis for completion of those open items for calculation update through to priority, and, in fact, that is something we had communicated in one of our follow-up letters to the staff.

But in the beginning of this year, we found that there was still open items that had not been done, so that they were languishing in terms of priority.

Subsequently we got into the latent issues reviews, our system health reviews, safety function validation project reviews, all of those projects would be as described, found similar weaknesses in design basis calculations, and we have upgraded a number of those calculations, and in particular, you know, I described earlier Ken Byrd's accident analysis area, we have done a lot of global calculations for the various systems and

heat load calculations and performance calculations, and we found that, yes, all this work is kind of revalidated, that there were weaknesses in calculations. Largely the systems have been demonstrated to be nonoperable through our assessments of all the additional issues that have been raised and were adequate to support operability.

We did find a couple of areas, as Bob described, where there were detailed issues of operability, but given the ~~devisiveness~~ decisiveness of what we have done over the past year, we have dedicated teams of individuals, well-experienced individuals going through the systems. We feel that on total, what we have done essentially validated the statements we made in terms of the adequacy of the design basis to support operability of the 50.54(f) letter.

Notwithstanding that, we also feel that we need to do a supplemental response to the letter to describe what we have done over the past year, document what was found and how it relates

to the original findings and the design area plan. So that is one of the plans that we have had in our regulatory affairs section, to go through the process of rolling up and reporting what we found in the past year relating to our 50.54(f) letter response in the mid-90s. And we feel that all the work that we are doing in the design area to upgrade and -- surveil and upgrade our design basis to the plant is going to move us forward quite a bit in the quality of the adequacy of our design basis for information.

Are there any questions on that 50.54(f) letter?

MR. RULAND: This is Bill Ruland at headquarters. I guess I didn't hear how the open items system remain, that you actually didn't complete all of the items that were opened?

MR. BYRD: All of the open items were put into the corrective action program as ~~conditional~~ condition reports, and so all of those condition reports have been categorized and -- with any other condition report, so every open item that is

categorized as required for restart will be complete by the appropriate mode for restart.

So at this point I don't have any exact number, but obviously the majority of the things that would be required for Mode 4 have been completed. Some things were categorized as enhancement and others were not. Other items were identified during all of those reviews, those particular items may have been identified as post-restart actions.

MR. GROBE: I'm not sure I understand your question, Bill. Was that a priority to March of 2002 when the plant was shut down or was it as of today?

MR. RULAND: Both.

MR. GROBE: I think, Ken, you answered the question at the time the plant went down for it's refueling outage in February of 2002.

MR. BYRD: What percentage had been completed then?

MR. GROBE: How many items were there?

MR. BYRD: Essentially all of them. We had

responded to things that had been -- we had as condition reports but had not been -- or request for assistance had not been dealt with except for a very few, but a vast majority of them were still there.

MR. GROBE: So let me make sure I understand if we could, Bill.

MR. RULAND: Let me ask this question. So if I understand what you're telling us, you had identified a thousand -- about a thousand open items as part of your design basis validation program, and essentially all of them are still open; is that what I heard?

MR. BYRD: The majority of them are still open, essentially all of them, correct.

MR. RULAND: Essentially all of them?

MR. BYRD: But --

MR. RULAND: That's all I needed. Thank you.

MR. GROBE: Can I ask a follow-up question? If I understand correctly, I think I heard what you said, that is that a specific issue clearly

resulted in an operability concern, then it was put into the corrective action system? If it simply asks an engineering question, complicated engineering question that required analysis and further follow-up, but it wasn't obvious that was an operability then if it was not put in the correct place under one of these two things, corrective action tracking system or a DVB tracking program database.

MR. BYRD: That is correct, the ones that had been identified as requiring needed to be addressed had been put in the corrective action program at the time. And then some of them were also put into the corrective action program, which would be the second bullet you see that, and that actually had been addressed prior to the -- a year ago those issues by and large have all been identified, so the first -- what I call the first two types of issues as proportioned had been resolved.

Then there was the third group of issues which had been reviewed and determined that

they didn't warrant a condition report at the time, that was a determination, had been put into a request for assistance. Those issues by and large had not been resolved, and those were the issues which subsequently were put back through the condition report process. Every one of them went back in a condition report, and so those would have been addressed as per the condition report process.

MR. GROBE: Okay. And that comprised most of the questions that came out of the design --

MR. BYRD That comprised most of the questions, and many of them were, in fact, just essentially questions not involving operability issues or things of that nature.

MR. GROBE: I mean, that's what these kinds of reviews do, they generate questions, okay. Now, that was on -- I think on Slide 32, that's where you described those, just so that everybody was following where I was at. Could you, on Slide 33 it said completion of open items had less than adequate priority. Could you talk about that

again, make sure I understand what you're saying.

MR. POWERS: On the priority on that, in fact, we communicated in a letter, in a follow-up letter to our 50.54(f) response in terms of priority of calculations and skill to get them done, these were the finding calculation updates that we have been projected they would be done by the end of 2000. In fact, not all of them had gotten done by the beginning of 2002, there was still remaining stuff to get done and we talk about priority, we talk about the -- what we mean is the number of activities the site and relative priority for the engineers updating a calculation for clarity purposes. For example, is it something that is scheduled to do and there is other issues such as modifications that is required or system operability assessment required for a piece of equipment, those have higher priority -- can take higher priority.

Now, we don't think that the appropriate priority was placed on finishing up this effort. It was a major commitment that we

should have followed through on. In fact, last year we found the condition that we were in, we reactivated the project, applied a lot more resources to get assistance to get these done, and finished up many of the calculations in the course of last year. So there was -- we didn't have adequate priority review to get the projects done.

MR. GROBE: And I don't mean to split hairs, but I'd say it had no priority if it was scheduled to be done in the year 2000, and at the time this outage started, the vast majority of the work hadn't been even resourced. Were there resources in the budget to accomplish this work?

MR. POWERS: I don't know the answer to that, Jack

MR. GROBE: I was just puzzled by that question, had less than adequate priority. You know, I consider priority, I have gotten things to do and these things will be done on Monday and these things will be done on Tuesday and these things will be done by Friday, that's prioritizing. But these things weren't done for

years, so I'm trying to understand whether or not the resources were scheduled and applied or whether, in fact, there was no priority because they weren't put in your corrective action system, they weren't tracked in any active work management data base that I'm aware of, I don't believe. Was this DVB an active work management data base, or was it just a tracking system.

MR. POWERS: I believe it was a list of things that needed to be done, the priority of it was not -- in that case was not appropriate. We believe it should have been in the corrective action program, so one of the things we have looked to is one of the specifics of the design base validation program, that was the plan that -- because it was expected to be a large volume of issues that would need to be dealt with, and if they were lower level ones that have a stand-alone database for tracking that through. And in hindsight as we looked at that, we don't think that that was an appropriate database controlled network. However, it was a workload that was for

the internal engineers to get done, you know, it wasn't a priority. We don't --

MR. LEIDICK: We understand your point, Jack, the work wasn't done, should have been done. We are cleaning up all the issues at this point.

MR. GROBE: And that gets back to, everybody defines safety in our culture differently, but I think included in Dr. Haber's definition is the right resources with the right capability to focus on the right safety issues, and maybe this is a cultural issue that is already addressed.

MR. SCHRAUDER: You know, one of the things we did do is eliminate all of those what -- Jim referred to as rogue databases, all of those are now captured in the corrective action program, so they are elevated into the appropriate level. I can't imagine them not being done by their due dates.

MR. GROBE: One of the issues that is on the restart checklist is the completeness and accuracy of the information, not only internal records but information that you have submitted to us, and I

understand that under Pat McCluskey's group they are going through a sampling evaluation of past significant documents that have been submitted to the agency on the dockets. This is one that I would have expected to be part of that sampling population. But the first bullet on Page 34 says design base validation program was completed to the extent defined in the responses.

And so does that mean that you have completed the review of that and you have concluded that was complete and accurate in all material respects?

MR. POWERS: No, it does not. This is just a characterization of looking at the 54 letter, what it said would be done relative to what was done, each of the design basis validation programs would be done and issues would be put into tracking systems based on their priority and a follow-up letter gave us a status of that in terms of 50 significant issues, 12 of which went into CRs and the balance of which went into the corrective action tracking system, and the

remainder were in a third level of the system, and with a projected date to complete those actions at the end of 2000. So when we make this statement on here, that is all it's intended to imply, Jack. It does not in my view constitute any sort of statement on acceptability.

MR. GROBE: Okay. So that the work that is being done under Pat's direction is still looking at this?

MR. LEIDICK: Yes, it is, and it does include this one.

So let's wrap this up, we appreciate your time today. We have certainly -- I think we have spent a lot of time talking about what isn't done yet. Suffice it to say that six months ago we were here, I believe we presented our grand plan, if you will, for attacking all of the open questions from a design perspective, and there's been a tremendous amount of work that has been done. There have been a lot of issues that have been satisfactorily resolved, the bulk of them have been satisfactorily resolved, whether

it's through the safety function validation program or self-assessment process, the topical area reviews, latent issue reviews and various programs that we have had out there.

So as Jim said earlier, I think we were looking at a rather substantial forest, if you will, at the end of last year in terms of open questions and open issues, and now we are able to see what's left. And we have tried to present today what's left. There is a fair amount of work to go yet between now and the NOP test and the restart, we have got it reasonably well bounded, except the electrical system, I think I'd recommend that we have perhaps a conference call next week between the specialists to get a better dialogue going on what's involved there, what our approach is there to make sure you and us are on the same page in terms of the approach to restart the electrical system.

That is the -- I think the most significant loose end that we have out there. But we have really changed the design documentation

and design of this ~~plan~~ plant, and it's been a very robust challenge, if you will, and I think when the dust settles again, the completion of the remaining actions that we have talked about here today that we will be able to establish that there is reasonable assurance that the plant systems have been able to perform their intended safety functions.

So, again, we focused on the half-empty version if you will here today, and tried to tell you what's left to do, and we spent our time identifying that, and I hope we have got good feedback on that, and I appreciate your time today.

I would ask Bob Coward, who's been through some of the reviews today at other stations to give his perspective of what he's seen here at Davis-Besse relative to others in the industry.

MR. COWARD: I guess we were talking coming out on the plane, and I had, I'm not sure I'd use the word pleasure, but the opportunity to

participate in the number of the plants that have been through this process going back to probably the beginning of the late '80s at Nine Mile Point was the first one I was involved in and if you go also to Salem, Crystal River, Cooper, most of the ones I have been involved with, if you go look at those, I told Gary what's interesting about Davis-Besse is there is certainly a lot of dust and dirt that's been kicked up in the last 12 months, been tremendous amounts of activity, lots of people have looked at lots of paper, lots of people have generated lots of paper.

When you get all the way down to the end, and we are going to leave electrical systems aside for now because no one knows, we think we -- only we know what's going to happen, but no one knows for sure what's going to come out of this, but that aside, because that was more of a management issue, if you look from a design perspective, did we have to redo the sump? Yeah. Do we have issues of AOC involvement? Yeah. Unfortunately the timing of that got rolled into

this outage. Now, that is something everybody else is also doing, and the experience here at Davis-Besse is not really tremendously different than what our plants are seeing with regard to their amount of AOCs.

When you look at the big picture, like when we were talking this morning was not do you want to compare grades of bad, but Davis-Besse ain't that bad. When we're all done with design issues, design problems with this plant, it had to be fixed, you know, are we redoing all the health stuff like we did at Cook? No. Are we going to be sitting here fighting over EQ the way the N.R.C. is still doing on Cooper with EQ? No.

Are we having to build all new safety-related enclosures and put in new safety-related equipment like they did at Crystal River? I see Tom Payne who went through the whole Salem experience with me, all kinds of modifications to the plant, you know what, I think when we talked here back in December, that what we had was we had a bunch of calculations that

probably could have been better, I don't think anybody disputes that. Were there some unsubstantiated assumptions? Yes. Were there some -- did they look at perhaps all of the bounding conditions directly in the calc? No. But in general the plant is safe and the design is sound.

We have got like the HPI problem, that one fell through the cracks, it fell down the cracks during design, it fell through the cracks in the '80's and in the assessments in the '90s. Deisel, is this diesel challenged during it's starting sequence on an SFAS? Yes. But we had the analysis and we have good test data to show that this still works fine.

So the big picture, you know, I think that, you know, having been involved in some of these restarts, and I know Marty saw us going through the stuff in January, we dug into this real hard, and you look at like the -- some of the decay heat removal/LP stuff, what is the biggest issue is that, you know, there is a potential

concern with boron precipitation control back-up method, all right, we are not talking about, you know, primary safety mitigating functions.

In most cases here, most of the concerns that everyone has, and we have had some, we identified some ourselves working with the people at Davis-Besse, you know, just like I said, it was just Gary and I were talking about it, and I told him that I felt good seeing where we are compared to nine months ago, just from the standpoint that whether everything is settled, you're know not to say there is nothing, but in the big picture the situation I think is not what people thought it was going to be last September and October. That is just -- I'm not sure if that helps, but that is just a perspective.

MR. LEIDICK: We do have work to do, we are about doing that and we thank you for your time.

MR. GROBE: Thanks. Any other questions?

(No response.)

MR. GROBE: Okay. No others.

MR. RULAND: No questions from headquarters.

MR. GROBE: I have a couple of observations. This is sort of a milestone that First Energy has been working on for quite a while, a number of months, a frequent amount of effort has gone into it. You have gotten to the point where you were able to conclude that you think that programs and processes that you have accomplished are getting you to the end of the tunnel. You're not there yet, there is still a lot of work to do. I think that is a milestone.

When you completed the system health reviews and the five latent issues reviews, you weren't there, you decided you had to do more, and then you decided you had to do some topical reviews, and then it was a learning process, and I think it's important that you have gotten to this point.

Marty Farber has been leading an effort that has been paralleling your activities for quite a few months now, and he's been working very hard at that with a lot of support from other folks. We still have a lot of inspections to do.

We looked at your system health review, we looked at your latent issue reviews and found that the engineering assessment board was adding significant value, that the reviews were being done and the appropriate depth, and then when you went to the safety function validation project, we looked at that and a number of inspectors out there and found that that was going into the appropriate depth.

We are now looking at the topical area reviews, and we are going for -- continuing to inspect, and as you finish work, we will be in there to inspect. An additional part, it's not -- what we call it is the corrective action team inspection. It's intended to look in large part at the effectiveness of the corrective action program, but the scope of effort that we have chosen is largely dominated by correcting engineering issues, so Marty's work in combination with Zelig's work will leave us the information that we need to decide whether or not we can agree with you, and that likely is going to take

multiple additional weeks of effort over the next period of time.

So I think this has been very informative, I have learned some things here today that I didn't know, and I have got about 30 questions on the front page of your book here, it's covered with handwriting, so we have got a lot of information we need here and it's been helpful for me, and I'm sure the others sitting here at the table, to put in focus where we are at, and where we need to go. I encourage you to figure that even has the potential to be a licensing activity that is going to require us to find resources at headquarters to address, for example, the -- you called me last Thursday morning when it looked like there was a potential for modifying the HPI pump, might be on a competing level with replacement of the pump, and I initiated activities in headquarters to see where we would find the resources to provide an adequate review of that type of a design if you decide to go forward with that so that Pat has

weekly calls with Tony Mendiola and his staff, and I would encourage you to make sure that everything that could potentially be a licensing issue is being discussed, not that we will start any activities, but at least we will --

MR. LEIDICK: I had a letter, a list that has more on it than less.

MR. GROBE: We also. So I really appreciate the amount of effort that went into preparing this presentation, it was very comprehensive and very useful.

MR. LEIDICK: We have reached a point where, you know, six months ago we didn't know where to start, and we're getting there. Thanks.

MR. GROBE: Christine?

MS. LIPA: We are going to take a ten-minute break and then we will open it up for comments and questions from members of the public, and we will be starting in here, going to headquarters, and then we will go to people on the bridge line, so be back here at 4:20.

(Whereupon, a recess was

had, after which the meeting hearing was resumed as follows:)

MS. LIPA: We are just about ready to continue here. What we'd like to do at this point is open it up for questions or comments from members of the public that they have for the N.R.C. folks that are here at headquarters, and so let's begin with that. If there is anybody in the room here that has a comment or question, if they could come up. We have a microphone over on the podium over there across the room.

Is there anybody that has any questions?

(No response.)

MS. LIPA: Is there anybody at headquarters? Is your room open to the public?

MR. MENDIOLA: This is Tony, and yeah, we have somebody with a question.

MR. HORNER: Dan Horner from McGraw-Hill. I guess I want to -- I didn't catch one piece at the end of Mr. Coward's statement. He was talking

about a time frame of something happening in the September-October time frame, and I didn't quite catch what that was. Could you repeat that, please?

MR. COWARD: What I meant was the September-October time frame after the LAR reviews had been completed, but before the topical reviews had been complete, the safety function reviews had been completed, most importantly before the questions that were placed in the LARs were answered, there were a number of outstanding design questions and there were some people who thought there were design issues with Davis-Besse.

And what's happened since that time frame is these other additional reviews have been performed, and most of the programs and systems are satisfactory, and many if not all of the questions that were identified during the LARs have been answered. And when the questions were answered all of the, quote, issues went away. That's what I meant.

MS. LIPA: If you could spell your name,

sir.

MR. HORNER: I'm sorry, Daniel H-o-r-n-e-r, Daniel Horner.

MS. LIPA: Thank you. Any other questions from headquarters?

MR. MENDIOLA: No other questions from headquarters.

MS. LIPA: Now would be time for anybody on the phone lines who has a question to work through the instructions that the operator will give you.

THE OPERATOR: If you would like to ask a question, please press Star 1 on your touch-tone phone.

(No response.)

THE OPERATOR: Currently there are no questions.

MS. LIPA: Okay, thank you. Well, if there are no further questions, that concludes our meeting. And, everybody, thank you for coming.

MR. LEIDICK: Thank you, Christine, I appreciate it.

(Which were all the

proceedings had and
testimony taken in the
above-entitled matter at
the time and place
aforesaid.)

STATE OF ILLINOIS)
) SS.
COUNTY OF KANE)

I, ELLEN E. PICCONY, a Notary Public duly qualified and commissioned for the State of Illinois, County of Kane, do hereby certify that subject to the usual terms and conditions of County Court Reporters, Inc., I reported in shorthand the proceedings had and testimony taken at the hearing of the above-entitled cause, and that the foregoing transcript is a true, correct and complete report of the entire testimony so taken at the time and place hereinabove set forth.

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