

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
- - -  
BRIEFING BY COMMONWEALTH EDISON  
- - -  
PUBLIC MEETING

Nuclear Regulatory Commission  
Conference Room 1F-16  
White Flint Building One  
11555 Rockville Pike  
Rockville, Maryland

Monday, May 13, 1996

The Commission met in open session, pursuant to notice, at 1:58 p.m., Shirley A. Jackson, Chairman, presiding.

COMMISSIONERS PRESENT:

SHIRLEY A. JACKSON, Chairman of the Commission  
KENNETH C. ROGERS, Commissioner  
GRETA J. DICUS, Commissioner

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STAFF SEATED AT THE COMMISSION TABLE:

JOHN C. HOYLE, Secretary of the Commission  
KAREN D. CYR, GENERAL COUNSEL

FOR COMMONWEALTH EDISON:

JAMES J. O'CONNOR, Chairman and Chief Executive Officer  
THOMAS MAIMAN, Senior Vice President, Nuclear Division  
HAROLD KEISER, Vice President, Chief Nuclear Operations Officer  
J. STEVEN PERRY, Vice President, Dresden Station Site  
TIMOTHY J. O'CONNOR, Operations Manager, Dresden Station  
PRESTON D. SWAFFORD, Maintenance Superintendent, Dresden Station  
RAJIV S. KUNDALKAR, Site Engineering Manager, Dresden Station

ALSO PRESENT:

FRANK SPANGENBERG  
STEVE BARRETT  
JOHN HARLACH  
BILL RAKES  
TONY BRINKLEY

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P R O C E E D I N G S

CHAIRMAN JACKSON: Good afternoon. This is Commissioner Dicus.

The purpose of this meeting is for Commonwealth Edison to brief the Commission on the status of efforts to improve performance at Dresden Station, but I would say the complete system since the last briefing in November.

Your presentation is of particular interest since the Commission continues to be concerned about Commonwealth's nuclear facilities, particularly the progress being made at the Dresden Station, but even at some of the others, in establishing lasting and effective programs that will result in sustained improved performance.

We are anxious to hear the status of your progress in that area.

Although the staff has reported improvements in Dresden's performance, you continue to face longstanding challenges in several significant areas, including worker skills, work management and planning, the backlog of equipment deficiencies, radiation protection and material condition.

I must say that in reviewing other stations' performance in the system, including Quad Cities, LaSalle, the same kinds of themes run through.

These challenges and the progress being made in

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meeting your goals for improvement are areas that the Commission would like to have addressed at this briefing.

I understand that copies of your presentation are available at the entrance to the meeting.

Commissioners, do you have any comments?

COMMISSIONER DICUS: No.

COMMISSIONER ROGERS: No.

CHAIRMAN JACKSON: If not, Mr. O'Connor, you may proceed.

MR. J. O'CONNOR: Thank you very much, Chairman Jackson, Commissioner Rogers, Commissioner Dicus.

We very much appreciate the opportunity to appear before you this afternoon to discuss our nuclear program, with special emphasis on activities related to our Dresden Station.

When we were here last November, you challenged us to make substantial step changes in our site's performance. We did accept that challenge and have made substantial progress. Today, we are here to address the areas of interest that you identified in your letter of March 22, 1996.

As I mentioned last Fall, I feel very strongly, along with our Board, in our commitment to have all of our plants operate in a superior manner, both from a safety as well as a reliability standpoint. We are prepared to

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support those efforts so that there will be no doubt that all six of our sites are resourced in a manner that will permit steady improvement.

Toward this end, our Board in March approved an additional allocation of \$73 million towards operational support for 1996 and an additional \$19 million in capital dollars to support an accelerated schedule of improvement across all our sites.

These expenditures followed an in depth evaluation by all of our sites. I hope you will agree that these actions demonstrate our willingness to walk the talk. At the same time, we recognize that promises, programs and even dollars are not in themselves adequate measures of performance, that it is results that really count.

Today, we are prepared to discuss the results of our efforts at Dresden since we last met.

Among the comment people joining me today are Tom Maiman, Senior Vice President for the Nuclear Division. Tom has a proven track record in nuclear and fossil stations, as well as our commercial divisions. With Tom is Harry Keiser, who is the Chief Nuclear Operating Officer responsible for the day to day operation of all six of our nuclear stations, and Harry's experience and strong record of accomplishment and energy make him a valuable addition to our nuclear leadership team.

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Since we have been requested to respond to a number of issues, specifically related to Dresden, I would now like to ask Steve Perry, who is the Site Vice President at Dresden Station, to describe the performance at that station.

MR. PERRY: Chairman Jackson, Commissioners, thank you for inviting us here to talk about Dresden. I'd like to introduce the people I brought with me.

On my immediate left here is Tim O'Connor. Tim is the Operations Manager at the Dresden Station. He is responsible for all reactor operations, non-licensed and licensed operators report to him. He is also responsible for chemistry and radioactive waste. Tim reports to the Plant Manager.

On his left is Preston Swafford. Preston is the Maintenance Manager at the Dresden Station. He is responsible for the execution of all maintenance that occurs at the station. The Commonwealth Edison as well as contractor maintenance technicians all report to Preston. Preston also reports to the Plant Manager.

On his left is Rajiv Kundalkar. Rajiv is the Engineering Manager at the station. He is responsible for engineering support of the plant, for the design control modifications and all of the ComEd and contractor engineers at the station report to Rajiv. Rajiv reports directly to

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me.

All of these individuals will say something about themselves when it comes to their time to talk, but I will tell you, in my opinion, these are first class managers. They have excellent nuclear instincts. They are leaders at the site. They are functioning well as a team. They bring a lot of energy to the place which is catching. They are changing the attitudes at the station. I think you can form your own opinions as you hear them speak.

I also have a number of other individuals who I

brought here and I would like to introduce them. First is Frank Spangenberg, who is responsible for external relations with the Nuclear Regulatory Commission, with INPO and others. Frank reports to me. Steve Barrett has been my Radiation Protection Manager. I have John Harlach, who is my Master Mechanic, who is in charge of all the mechanics on the site. Bill Rakes is a General Foreman and Tony Brinkley is a First Line Supervisor.

I brought them so they could observe firsthand and bring back what they hear and see today, but also if the occasion arises and you want to ask deeper into the organization then those here at the table, they are available.

All of us are going to try and give you a balanced view of where we are at Dresden today. I will tell you that

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I am pleased with the significant improvement I have seen in Dresden and particularly over the last six months. Both units are running, running well. Overall, people performance and attitude has been trending up for a number of months, but in particular, it is accelerating in the last several months.

What we talk about here and especially since we are focusing on what we said we were going to do in this six months will be slanted to the positive side. We also have a pride of authorship there.

Before we start, I must say that despite this positive report that you will hear, we fully understand the magnitude and depth of the problems that we are still facing at the site. Don't think that we don't understand that because we are talking about some positive things here.

With that, if we could turn to slide five, please.

[Slide.]

MR. PERRY: This is a synopsis of the letter which you sent to us on March 22, remembering your comments to us several times, we are going to focus principally on the results. That is what the bulk of what we talk about today will be.

You also asked five other questions which I've listed here. I will answer the second bullet and the last bullet there, but I will do that at the end. Mr. O'Connor

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has already talked to the resources being applied at the bottom and Preston Swafford and Rajiv Kundalkar will address the other two issues as they go into it.

Next slide, please.

[Slide.]

MR. PERRY: Last November, we told you that we would accomplish a number of things. We listed 23 actions that we would accomplish and we did all 23 of those actions. One of them was in fact a measurement. We stated that we would conduct an error free start up of Unit 2 after the refueling outage, and we did that. The operations performance was flawless.

We also had 22 performance targets that we set for ourselves, some of which measure the actions. Others were different from that. We met 15 of those 22.

I am going to characterize what that means to me. What I tell my people is if we set hard targets, challenging targets, tough targets, and achieve 75 percent of those, we have performed in an outstanding fashion. If we were to achieve 50 percent, that would be so-so. If we were to get much higher than 75 percent, it would bring into question whether or not we had tough and challenging standards.

What we have done here is we have achieved 68 percent of the standards we set for ourselves. We missed 75 percent by two. It was not outstanding, but clearly, I

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think, over this period of time, a very good performance.

Of the seven that we missed, two we missed by a hair. Two we showed improving trends over 1995, but missed the target. On three of them, we had no discernable improvement over our performance in 1995. We will discuss each one of these in detail as we go through the presentation.

I look at these performance measures, these 22, in a different way, and I can divide them up into two types. One type is just getting items done, working off a backlog, for example. About half of these were of that character. We did all of those. There are another kind that involve changing the culture of people and then getting them to perform and you measure their performance. There were in fact ten of those. In seven of the ten, we either met the

goal we set for ourselves or showed measurable improvement over our performance in 1995, seven out of ten.

I am going to have Tim O'Connor first talk about operations and about performance measures. It is unfortunate for Tim that we have given him most of the performance measures that we didn't achieve, so he will be discussing those things. If you will bear with it, we will get through all of the three individuals that are going to talk and you will be able to form an overall picture of where we are.

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With that, Tim O'Connor.

MR. T. O'CONNOR: Chairman Jackson, Commissioners, my name is Tim O'Connor. I'm the Operations Manager, as mentioned earlier. I'm responsible for personnel associated with operations of Unit 2 and Unit 3, the Rad Waste Group, Fuel Handling, Chemistry and Environmental Compliance.

I've been assigned to Dresden for approximately four years and in the last 12 months, I have seen and been part of the most significant change while at Dresden. The focus has been to change the habits and the practices of our people, to change the thinking of our people by establishing standards that are equal to or better than the industry. We are focusing on results as a measure of performance as individuals and as a station.

I will present today performance results in the area of operations, human performance for the station and radiation protection.

Next slide, please; eight.

[Slide.]

MR. T. O'CONNOR: As you may recall, Chairman Jackson, in late 1995, you visited Dresden Station, and at that point in time, Unit 3 had returned from a forced outage which was focusing on repairs to our low pressure turbine blades. Also during that period of time, we took those occasions to resolve longstanding equipment issues and

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operator challenges.

Just a couple to mention has been the restoration of redundancy to some systems or simply restoring a defense and depth to our non-safety related systems. One system had been out of service for almost 15 years. Also, we took this opportunity to resolve some operator challenges, that being with level control with our feed water system, which we now have automatic features during transient conditions, which previously we had not in all cases.

We had a very deliberate error free start up back in October of 1995, and since that period of time, we have exceeded 180 days of continuous operation with a better than 90 percent average capacity factor since that start up.

The unit is not showing any significant signs of material condition degradation and is demonstrating reliability and our operators are confident in that plant.

Next slide, please.

[Slide.]

MR. T. O'CONNOR: Unit 2 has recently returned from its refueling outage in early April of this past year, 1996. Also, during this particular refueling outage, there was considerable focus on improving safety margin, resolving longstanding equipment issues, and reducing operator challenges.

Preston Swafford will mention some of those items

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in the material condition presentation. I would like to touch on just a couple.

First is our station blackout diesel generators are now operable on Unit 2. This restores additional AC power in the event of a loss of off-site power. Also, significant effort has been put to our feed water system, both in the control system and in the valves themselves. Thus, giving us complete automatic features which Dresden has never had previous to this point in time.

CHAIRMAN JACKSON: Repeat that, please, what you just said.

MR. T. O'CONNOR: Our feed water -- there has been considerable effort put into our feed water control system and valves, and the work that has been performed this last outage has provided us automatic controls that we have not had in previous years.

CHAIRMAN JACKSON: Thank you.

MR. T. O'CONNOR: This start up on Unit 2 is significant to Dresden, not only because it is the start up of a reactor, but also because we are now entering into dual

unit operations. Therefore, considerable effort and controls were put in place to assure that we had error free start up.

Assessments and overall readiness efforts were put in place to assure physical system readiness, individual

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readiness and crew readiness, with during the start up and critical activities, senior management oversights being performed of our operators to assure that performance levels were up to the highest possible levels.

Again, we had a deliberate error free start up on Unit 2.

Next slide, please; ten.

[Slide.]

MR. T. O'CONNOR: In the area of our operations workforce, we have had a step change in our licensed operators. Specifically, the overall control room professionalism and operations of our control room personnel. That was a target in 1995 and we have been able to achieve a higher level of performance with those operators.

We routinely bring in outside industry peers, non-ComEd personnel, to evaluate us, to assure that we are meeting those standards and to bring new ideas to continue to raise those standards. In fact, at this point in time, we have been benchmarked not only by our ComEd stations, but also by non-ComEd stations in terms of how our control room is operating, because other stations wish to achieve the same kind of results.

In the area of non-licensed operators, this is a specific focus in 1996. The same structure and philosophies

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that were successful with the licensed operator is now being applied to our non-licensed operators. We are seeing improvement, although those operators are not yet at the same standards and levels of performance as our control room personnel.

CHAIRMAN JACKSON: What metrics do you use to measure performance?

MR. T. O'CONNOR: The standards that I use are performance evaluations on weekly exams, both written and physical field observations, to determine whether those personnel are performing to the standards in the field.

CHAIRMAN JACKSON: Commissioner Dicus, do you have a question?

COMMISSIONER DICUS: Yes. You have achieved improvements in the control room operators in how they are functioning but not outside the control room, if I understand that. You haven't gotten the same level.

Were the improvements in both groups or the training for both groups done about the same time or did you focus on the control room and then to the others? I'm trying to get at why there is a difference.

MR. T. O'CONNOR: In the middle part of 1995, human performance errors in the control room was a predominant area of focus because of the numbers of errors, and the focus by Dresden was specifically on the control

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room operators. The non-licensed operators at that point in time were not showing the same kind of problems with performance.

This year, the focus is now with the non-licensed operators, and as you will see in a slide later, some of the performance data dictates that is where the focus should be. That was not at the same time.

MR. PERRY: I will just add to that, to give it a different viewpoint. Clearly, the most important area of the plant is the main control room. We recognized that we had material condition problems that could challenge the plant, and if we did not have operators who were professional, conservative and had a good approach as to how they solved problems, that combination is not a good combination, so we put a lot of effort in the control room area as a first line of defense.

MR. T. O'CONNOR: Next slide, please; 11.

[Slide.]

MR. T. O'CONNOR: In operator re-qualification exams, a target that was established for April 30 for ourselves was to have a pass rate greater than or equal to 95 percent. As you can see in this particular graph, Dresden Station finished with a 97 percent pass rate. We achieved our goal.

Next slide, please.

[Slide.]

MR. T. O'CONNOR: In the area of Operations Department, human performance, we had a specific target of April 30 to be less than or equal to four events for the first quarter of 1996. We have not achieved this goal as of yet, although as you can see, we are seeing a declining trend in human performance errors, but still, much needs to be done.

CHAIRMAN JACKSON: How does that compare with industry performance?

MR. T. O'CONNOR: My experience and in talking to my counterparts, both in Edison and some friends of mine external to Edison, we are still well below where the best are. If you are looking for a specific number, in operation space, three or four a year.

CHAIRMAN JACKSON: I guess what I am really trying to understand is how do you set your goals, how do you know what is a good goal and how do you benchmark yourselves with the rest of the industry, particularly with the best quartile of that industry.

MR. T. O'CONNOR: Clearly, I'm using those values that I have mentioned for benchmarking myself and we are transitioning from step change to step change to step change, to reach those particular targets.

Next slide, please.

[Slide.]

MR. T. O'CONNOR: An evaluation of the human performance issues break down in these categories. I have simply separated them from field activities to non-field activities. I would like to point out that the biggest dominators of our human performance issues are with our non-licensed operators at this point in time, and our out of service program.

Next slide, please.

[Slide.]

CHAIRMAN JACKSON: Do you feel that those issues, that extra training and so on that you talked about, with the non-licensed operators, are the right things to do to bring those contributions to significant events down on the part of the licensed, the standards training, performance training, testing training and systems training and this conservative decision making seminar?

MR. T. O'CONNOR: Yes, I do.

CHAIRMAN JACKSON: How do you translate the metrics that you talked about generally in terms of performance to how it is really going to impact this magenta part of the circle here?

MR. T. O'CONNOR: With results that I was able to accomplish with the licensed operators, the methodologies that you just described are the same things that positively

worked with the control room operators, and the issues are very similar with the non-licensed personnel.

Therefore, I believe that I will get the same results with the non-licensed personnel by applying those same principles.

CHAIRMAN JACKSON: Commissioner Dicus?

COMMISSIONER DICUS: What was the time frame that you collected these data?

MR. T. O'CONNOR: This is the first quarter of 1996.

CHAIRMAN JACKSON: At this point, you don't know if it has all really sunk in or not, to know that you will really get the improvement that you want to see?

MR. T. O'CONNOR: I am seeing some measure of results in terms of improvements but additional time will be necessary in order to prove that magenta section reduces.

Next slide, please.

[Slide.]

CHAIRMAN JACKSON: Tell me what kind of significant events you feel that the non-licensed operators' improvement would eliminate?

MR. T. O'CONNOR: Independent verification in out of service tag outs in the plant, equipment manipulations. Those are the kinds of things that we are focusing on. Those have been the areas of weakness that we have seen in

the last 12 months.

CHAIRMAN JACKSON: Are you able to identify any particular plant events with those sorts of areas that need to be improved? For instance, what I am going to ask you

later is the fact that you still do seem to have a fair number of significant events. One could argue, and that is true for all of you who are planning to talk today, and that is one could argue that if you do all these things and you say we are doing this, this and this, and we have trained this many people, you know, people do this and they get scores and they have had this seminar and they have done that, but in the end, where the rubber meets the road is just that.

I've had this kind of discussion with other plants, where we are in the green here, we are in the green here, we are in the green here, but we are in the red as far as significant events.

That is really what I am trying to get at, you know, knowing that what you are doing has a direct effect on events in the plant, because otherwise you can train people and that could be a metric. You can have seminars, and that can be a metric. In the end, if the plant doesn't perform, that is the ultimate metric, is it not?

MR. T. O'CONNOR: Yes, it is.

CHAIRMAN JACKSON: What I am trying to get at is

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trying to understand how the particular performance metrics that you are putting into place track to what seems to cause the significant events.

MR. KEISER: In one sense, the chart, because it is a pie chart, it is always going to have a hole.

CHAIRMAN JACKSON: That is why I am offering you the opportunity to fill in those holes for me.

MR. KEISER: One point he had made earlier was that the focus on the control room operators, which in this terminology would be the NSO, you see that is the smallest component on the chart. He is saying the activities embarked on with the NSO's was successful, and embarking on the same activities with a non-licensed operator would show a change in that chart. We would use the chart as a feedback.

CHAIRMAN JACKSON: It is too soon to know at this point?

MR. KEISER: Yes, ma'am.

MR. PERRY: We are seeing some effects already and one of them you just saw and we will show you another couple of them. I would go back to the control room operators. We track errors and mistakes they make by crew every month. We analyze it or Tim analyzes it and looks at it and we are doing the same thing in the non-licensed operators.

In fact, in the one particular area here with out

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of service, we are doing that and found out what we did wasn't good enough and we re-approached the problem and put in different corrective actions and did make a measurable effect. You can see that on the next chart, I believe.

CHAIRMAN JACKSON: I guess what I am trying to say is you are looking at, for instance, you mentioned crew performance. Are you able to track the occurrence of certain significant events to certain performances or lapses of performance on the part of crews of non-licensed operators?

MR. PERRY: Yes.

CHAIRMAN JACKSON: That is what I am trying to get you to talk to me about. It is those that you feel that are being addressed by the various things that you delineated earlier, to be tracking in fact whether by having this set of improvement activities, whether that has direct impact first on the behavior that you feel links to the significant events, and separately on the occurrence of the significant events themselves. You are actually doing that tracking? Those are your ultimate performance metrics?

MR. T. O'CONNOR: Yes, Chairman Jackson.

CHAIRMAN JACKSON: All right. Thank you.

MR. T. O'CONNOR: Slide 14, please.

[Slide.]

MR. T. O'CONNOR: This is another target measure.

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We had an expectation of being less than or equal to one out of service event by April 30 of this year. As you can see, we have seen a significant reduction and we had one month where that was achieved. However, we did not achieve it in April. Therefore, we are not considering this a success at this point.

Your comment earlier about non-licensed operators and are we tracking events, this is an example that I used in order to formulate what types of performance training we

should be looking at in evaluating, to change the behavior and practices of our people. At this point, we are seeing success, at least in this area.

Next slide.

[Slide.]

MR. T. O'CONNOR: In the area of operations self assessment, there has been a significant effort to develop and implement ongoing self assessment programs within the Operations Department. This did not exist 12 months ago. Some of the items that you see below in the slide are just specific focus areas that Dresden operating-wide managers are doing on a routine basis.

We are finding weaknesses and the most recent one that has been performed within the last two weeks was in the area of the out of service program, specifically because it has been an area of weakness, and we made substantial

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changes in the late February time frame, and we wanted to measure effectiveness at this point.

Also, during that particular assessment, we involved our bargaining unit employees to participate with that evaluation, so they could get a better appreciation and sense of what we are trying to accomplish.

CHAIRMAN JACKSON: How did that in fact go?

MR. T. O'CONNOR: It went very well. I think that in general they saw things from a different perspective than previously.

CHAIRMAN JACKSON: Have you seen any change as a consequence in performance?

MR. T. O'CONNOR: I'm not sure I understand your question. The operators -- in the individuals, yes. As a collective group, it is a little early to tell yet.

The next couple of slides will be in the area of station human performance. Slide 16 is personnel error LER's. We had a specific target by April 30 for the first quarter of this year to be at zero personnel error LER's. We did not make this particular goal.

Next slide, please.

[Slide.]

MR. T. O'CONNOR: This slide is a station event free clock, as we call it. It is days between events. This is something that was generated at Dresden Station. It is a

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relatively new measure and it is something that our other ComEd stations are also using.

We had a specific target to be at 40 days between events. To date, we have not reached that particular goal. We are at about 25 days at this point from the last event. Our top so far has been about 31 days.

This is a very challenging and aggressive goal for our people. I'd like to point out that many items that are included in this are a very low threshold of issues. Some can be out of service issues. Some can be material that was found outside the protective area, items like that. These are not all considered to be significant safety issues.

Next slide, 18.

[Slide.]

MR. T. O'CONNOR: I'd like to talk a little bit about radiation protection. The slide you have before you simply points to historical representation of the history of Dresden over the last 12 years. Dresden Station is showing an improving trend in collective radiation exposure for the station. However, we are still in the fourth quartile by comparison to the industry. Much work needs to be done in this area.

CHAIRMAN JACKSON: How far are you away from the industry mean?

MR. T. O'CONNOR: I'm sorry. I don't know the exact value. Steve?

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MR. BARRETT: Chairman Jackson, I believe we are about --

MR. KEISER: For BWR's, the first quartile is around 250 man Rem, 225.

MR. BARRETT: Chairman Jackson, we are about 175 person Rem per unit away from that. This year, if we meet our goal, we will move up to the top quartile of the bottom, still poor performance, but we are balancing -- improving the radiological condition against exposure. We are cleaning up a lot of rooms that is taking a lot of person Rem to do.

CHAIRMAN JACKSON: You have a special project or focus on that; is that correct?



MR. BARRETT: Yes.

MR. T. O'CONNOR: Next slide, 19.

[Slide.]

MR. T. O'CONNOR: Another specific target that we had set for ourselves for April 30 was to be less than or equal to 25 contamination events. We have achieved that goal. We had 17 to date. Again, you can see the historical performance of Dresden. The last couple of years are showing a decreasing trend.

In the area of radioactive material control, in late 1995, there was identified material that was not

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properly controlled, which Dresden Station personnel essentially shut down the site and did a complete survey of the plant, utilizing personnel from other stations as well.

The collective sum of items that were identified was in excess of 450 items. A significant effort has been put in place with the use of a variety of levels in the organization and as pointed out, a multi-discipline team, to implement corrective actions to change that particular trend.

There are continuing sweeps that are in progress. That was one of the corrective actions in order to be proactive and to assure that the corrective actions that we have implemented are achieving the results that we expect. To date, we have seen a 95 percent reduction in items that in the past were found not properly controlled.

CHAIRMAN JACKSON: Let me ask you a question, going back on this whole subject of station exposure history and the distance from the goal. Have you identified some top area or items or areas or things you must do to go down by 175 person Rem? What do you have to do to get there and how low do you think it is realistic for you to expect to be able to go?

MR. BARRETT: I forgot to introduce myself last time. I'm Steve Barrett. One of the big things that we definitely have to do is improve the radiological material

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condition. We have some rooms -- we have a target of worse areas in the plant. We have recently taken on the reactor building equipment drain tank room. We took over 15 person Rem to restore that. The other major area is in the area of refueling outages. We have to do shorter outages and less re-work. We will fall more in line with the rest of the industry.

CHAIRMAN JACKSON: That is not an unrealizable goal for you?

MR. BARRETT: I do not believe it is an unrealistic goal for us.

COMMISSIONER DICUS: Do I understand you are assigning the responsibilities for the high exposures on prolonged outages and contaminated areas that people were working in?

MR. BARRETT: We have taken a very aggressive stance in putting in lead shielding. You may recall, we re-posted the plant from 5 millirem per hour to 2.5 millirem per hour. Our people realized that they were standing in what we would consider higher dose rates than they should be. We still have maintained that. We have put up a lot more lead shielding and we are getting a lot more cooperation from the workers moving in and out of radiation protection areas much faster than they did in the past.

We have established cameras in the steam sensitive

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areas, where before we had sent operators in to look for valves. We have done a lot in that area as well.

We do have a high source and Preston will talk a little about zinc injection that we are doing and replacement of the reactor water piping.

MR. PERRY: There are a couple of specifics that we mentioned to you when you were at the station in December, that we had at the beginning of 1995, 82 hot spots and we had eliminated 42 of them and were after the rest of them. I was particularly impressed that the insulation that we have around the reactor recirculation piping in our dry well, we put lead blankets inside this insulation so that it provides shielding and it has knocked down the radiation levels in the dry well during outages considerably.

We took a pretty good sized dose to do that, to make that installation the first time because it is very, very heavy to lift this. It will have a long term beneficial effect.

We made the modifications in Unit 2 this time to

add zinc, pacified zinc, and that should reduce the amount of cobalt activity we see in the plant as well.

We are putting a big effort in this area.

MR. KEISER: Dresden has a high source term and a compact design, and we couple that with our material condition items, it makes it very difficult for us to make

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dramatic improvement in radiation exposure where we see any.

CHAIRMAN JACKSON: What is the source of your high source term?

MR. KEISER: It is years of operation.

CHAIRMAN JACKSON: There are things that in the end, you don't know that you will ever be able to totally eliminate, is that what you are telling me?

MR. KEISER: That's correct.

MR. T. O'CONNOR: In summary, the plant material condition is improving. That is demonstrated by our reliable run and the regaining of confidence that our operators are having by the plant responding as expected.

Step change has been achieved in the behavior and the practices of our operators in the control room. However, as I said before, we still have work to do in order to gain the same results with our non-licensed operators.

I believe in self assessment, as a means for essential continuous improvement, and we do have processes in place that are functioning that have not been in the past, our department line managers own those processes and they are actively involved, because that is where true change takes place.

My focus is on the leadership of driving accountability down to the first line supervisors and the worker level, coaching them and developing to the same

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standards that I hold myself to and the expectations are a key focus for me, and I believe that is how we will sustain long term change at Dresden.

Thank you. Preston Swafford will now speak on material condition.

MR. SWAFFORD: Thank you, Chairman Jackson, Commissioners. My name is Preston Swafford. I'm the Maintenance Superintendent at the Dresden Station. I am responsible for all craftsmen on-site. I have been with ComEd for approximately five months. Prior to Dresden, I have worked with the management teams associated with turning around three other watch list nuclear power plants.

I would like to share a few observations about the personnel at Dresden today.

Similarities do exist with those other three stations at their point in time where change began to occur rapidly. The personnel are recognizing that there are problems at Dresden. They are beginning to report these problems as well as acting on them more aggressively.

The energy level is rising in both the management and bargaining groups. This increase appears to be coming from the energization of the first line supervisors. They are responding to the responsibility and accountability being given to them.

The skill levels within the Maintenance

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Department, however, is below the industry average. This is recognized by the management team as well as many of the craftsmen themselves.

The individuals are expressing sincere interest in turning this around. It is up to me to facilitate this improvement.

Next slide, please; 22.

[Slide.]

MR. SWAFFORD: In 1996, Dresden had a focus to significantly improve the material condition at Dresden. We will do this through improving the work management process, through improving the engineering support to those processes, and by reducing re-work.

Next slide, please.

[Slide.]

MR. SWAFFORD: Recent key material condition accomplishments. Three of the ten worst plant areas cleaned by April 30. We met this goal. We took the Unit 3 reactor building equipment drain tank room, as one example, and removed 39 bags of trash from this particular room. We reduced overall dose rates through de-conning and hydrolysing and other maintenance activities from 2 to 400 MR general area down to 20 to 60 MR general area. We have repaired equipment in that room that had not worked in many,

many years.

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The Unit 3 high pressure coolant injection room. We placed into model space. This room is now considered fully functional for operations. They can do all activities they need to do in their street clothes in this particular area.

The Unit 2/3 acid-caustic area is another area on both turbine buildings, where abandoned equipment had been left in place for quite some time. We removed all that equipment and the hazards associated with that equipment.

CHAIRMAN JACKSON: There is no more abandoned equipment?

MR. SWAFFORD: There is no more abandoned equipment in that particular area. Now, we have returned it to near model space as well and Operations for the first time can get in there and operate any valves that may be in that particular area.

We also completed the Unit 2 core shroud repairs. The Unit 2 reactor water clean up piping and heat exchanger modification was completed. This entailed removing heat exchangers and other associated piping that were significantly contaminated and significantly degraded. Operations now can operate that equipment in a manner they have never been able to do or at least not for quite some time.

[Slide.]

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MR. SWAFFORD: In addition, next slide, 24, we installed the Unit 2 zinc addition modification. This was just mentioned briefly. The intent of zinc is to create a pacification layer on the piping and slough off Cobalt 60, thus reducing station exposure. We are taking it one step further and we are going to be using depleted zinc to again reduce the Zinc 65 component and again reduce overall station exposure.

We completed the Unit 2 station blackout modification. The other part of this is tied to Unit 3 and that will be completed in the Fall.

The 89-10 effort is complete on Unit 2, with the exception of three valves that we need to dynamically test. These valves will be done in June, on the next scheduled high pressure run.

In addition, the Unit 2 feed water reg valves and control system were upgraded as mentioned earlier.

Next slide, please; 25.

[Slide.]

MR. SWAFFORD: Work management improvements. We are now successfully running the 12 week rolling schedule. INPO has just exited last Friday, coming in to specifically look at this area for us. They commented saying that the process is functioning. However, there is much tuning to be done.

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This is not a strength at our unit, but I do believe that the processes in place now will withstand the time. We now need to understand them better at all levels in the organization to get them implemented.

CHAIRMAN JACKSON: I was told you had somewhat of a problem with work package procurement. Is that still an issue?

MR. SWAFFORD: We have some weaknesses in that area as well as some others. The quality of the work packages, we are still struggling with. One of our strategies there is to walk down the packages by the end users, the craftsmen, and try to identify the problems two weeks ahead of time. We are improving that area. We are probably only averaging about three days ahead of time. We need to get that to a full two weeks so the team has an opportunity to respond, but we are moving to that end.

Another area is the weekly schedule adherence accountability meeting. This is an important meeting to me. This is a meeting I chair, which I invite my first line supervisors to this meeting. In this meeting, they go over all job activities that did not work per the schedule the prior week. In addition, we invite key people that support the process, in the Operations organization, Systems Engineering organization, Procurement and others are there to hear the barriers put in front of the first line

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supervisors in getting their work done.

By having this meeting on accountability, I am able to flush out those barriers and create action plans

necessary to resolve them.

Another area we attacked was the backlog. Our approach to meet the April 30 goal was to divide that backlog by system to individual first line supervisors. That way, each individual again had accountability and a measurable matrix, if you will, to their success.

CHAIRMAN JACKSON: My understanding is that there is a level at which there may be "hidden material" condition deficiencies. Do you feel that you really have your hands or what are you doing to get your hands around the full scope of the work that might be out there, that you have these backlog items that are obviously based on identified deficiencies. The question becomes how do you know when and how to go about getting your hands around the full scope.

MR. SWAFFORD: I will address that in a second in another slide, but to take part of it on right now, I recognized when I first showed up in December, and this goal was already made of 950, that we needed to understand what the definition of the backlog was.

Clearly, there are more items in the backlog than the goal was of 950. We understand that. The goal was made on one particular bin called "corrective maintenance non-

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outage WR's," so instead of changing that, we kept that definition the same and tried to pull that all the way to April 30, measuring that one, and leaving some of the other definitions alone, but we would also have metrics for those that we are tracking against as well.

CHAIRMAN JACKSON: How many such others with other definitions?

MR. SWAFFORD: In the category of non-outage corrective maintenance, I would say our number is about 1,530, of which that is broken down into two major areas. One is the one number we are tracking, which is the corrective maintenance non-outage power block WR's, and the other one is what we call a terminology of an AR. These, of which there are roughly 649, those particular items are minor in nature to fix. They may have significance in terms that they are corrective maintenance and they are power block, but I do not need to organize the entire planning process and spend all the dollars and time in planning that.

We worked those with a team called our WIN team, work it now team. In order to continue to address that number and reduce it as well, we have created a second WIN team, and our first WIN team has been very successful. They have reached somewhere around 120 AR's a week, give or take a few, which is right up there with some of the plants with benchmarks in terms of Peach Bottom and Brunswick.

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They are fairly effective.

CHAIRMAN JACKSON: I guess the question becomes, you know, there is always the incoming at the same time. You have a work off rate. Whether you make progress also depends on what comes in.

MR. SWAFFORD: I have another slide that may help.

CHAIRMAN JACKSON: Okay, I'll wait and let you talk.

MR. SWAFFORD: To finish with this slide, the work week manager de-brief with senior managers is another key aspect. We have now currently six work week managers, fully functioning. These people are empowered. We had them before but frankly we didn't give them all the responsibility and accountability and the tools to be successful.

One of the obligations we have as senior managers is to sit down with these people and explain what our expectations are. We meet with them twice a week, Tim O'Connor, myself and the work control superintendent, and that is as much a part of mentoring the individual as it is to actually understanding his problems and what is going on within the schedule that week.

Another area is in the improved licensing condition for operation procedure. As we went into the 12 week rolling schedule, have begun on our journey to take

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some on-line maintenance activities. The very first one we did was on the 2-3 diesel generator, of which we critiqued that afterwards and out of that came some procedure changes we thought were appropriate and we made them.

Next slide, please.

[Slide.]

MR. SWAFFORD: The non-outage corrective maintenance backlog. As you can see, we did meet the goal.

Currently today we are at 890. I am going to move onto a couple more before I get into your question. This one doesn't do that.

Next slide, please.

[Slide.]

MR. SWAFFORD: In preventative maintenance and surveillance overdue, we had a commitment by April 30 to be at zero. We in fact made that goal. This was an ambitious goal, scheduling of over 100 a week at times was necessary to be able to meet this. I can say that the Engineering organization put in place to take this on did in fact meet this goal and it was a strong effort on their part.

Next slide, please.

[Slide.]

MR. SWAFFORD: On time schedule starts. We had a goal of April 30 to be at 85 percent of starts within one hour of scheduled start time. We did not meet that goal.

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However, we did meet that a couple of times. After we made it a few weeks, we found that we dropped off. Those drop offs were tied to the error free start up of Unit 2 that took operators away from the work control process and thus, some maintenance activities did not go per schedule.

I would like to announce that we did this last prior week make 87 percent and I believe we are moving back up again in that area.

[Slide.]

MR. SWAFFORD: The next slide, 29, is the one that I think might answer your question. This particular slide of workoff rates is not in the traditional bins, if you will, of the 950 that we are trying to meet by April 30. This is an identification of total problems out in the plant. They may mean housekeeping. They may mean corrective in nature. It could be whatever.

In there, you can see that from the last quarter of last year to the first quarter of this year, we have had a significant number of AR's generated, which means people are out there identifying problems. The systems engineers have been doing system walk downs, identifying issues, as well as a concerted effort on Operations' part to get out there and identify the problem.

This became particularly complex for me as a Maintenance Superintendent responsible of getting the

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backlog down to 950, as they are doubling their efforts in identification. I have to do more than double my effort to work them off.

As you can see, we in fact in maintenance did that. One other thing of note is the fact that the prior quarter's performance, the last quarter, about a month and a half of that period, we had over 1,000 additional contractors on-site during the outage, that we did not have in this last quarter. We started up Unit 2 with only roughly around 250 additional maintenance contractors, as opposed to 1,200 and something last Fall.

CHAIRMAN JACKSON: All AR's don't involve the same amount of work.

MR. SWAFFORD: That's correct.

CHAIRMAN JACKSON: If you had to project how long it is going to take you to really get this backlog down, what would you say?

MR. SWAFFORD: We have a goal for the end of this year to be at 800 in that one pile, that one bin of corrective maintenance non-outage, and I expect to see a significant increase in the rate of reduction in the other column of AR, such that I have a goal of 500 in that area.

The end of the year performance for me would be around 1,300, down from the 1,500. It would be more aggressive than that but I have an outage in the Fall as

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well, and typically in the outage, I go up 150 to 200 items. I actually have to under shoot roughly around 650 to 700 before the start of that outage in order to have a chance at the 800 at the end of the year.

CHAIRMAN JACKSON: If I were going to convert that to some kind of number of weeks or man weeks to work things off, what does it turn out to be?

MR. SWAFFORD: You are going to get me here.

CHAIRMAN JACKSON: You can give me the answer later.

MR. SWAFFORD: Okay.

CHAIRMAN JACKSON: And calculate it as you are going along.

MR. SWAFFORD: Thank you.

[Slide.]

MR. SWAFFORD: On the next slide, 30, maintenance re-work. This relates back to the issue I started with, and that is the skill of the craftsmen. This is directly attributable to the knowledge base of my craftsmen. Although this particular graph seems to have an appealing trend to it, it is really not telling the story.

We have significant re-work problems at Dresden and we have had significant components, too. It is not just large numbers of small items. It has been roughly 25 to 30 significant items a month. This is of particular concern to

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me and when I get into training, I will try to give you an idea how I am addressing it.

CHAIRMAN JACKSON: Where do these fall, electrical, mechanical, what?

MR. SWAFFORD: I would say the IM group is my strongest performer. My construction group and my mechanical is probably my worst performing, and my electrical hovers between the mechanical area and the IM area. We are not strong, I think, in three of the four main groups.

We have had a fair number of EM issues, too, but the number of work items they do per unit time is not as many as the other groups.

[Slide.]

MR. SWAFFORD: Next slide, industrial safety accident rate. This is another goal. We did not meet this goal. We had a goal of .8. We are currently at 1.1. This particular area, as you know, maintenance could probably influence this more than any other group.

We have improved over time but we are significantly above the industry. The technique we are trying to approach now is where the plant manager is chairing a meeting any time we have a recordable event that affects our ISA rate. We meet with the first line supervisor, who has a small committee of senior managers.

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We sit there and we listen to the first line, understand what happened, understand what the corrective actions are, and understand whether or not he will be successful in transferring that to the other groups and departments on the station.

If it is not overly convincing, we send the individuals back to get better prepared. We believe with that type of heightened attention, we may start to attack this issue.

[Slide.]

MR. SWAFFORD: Next slide, please. In the area of maintenance training, we have completed the Phase I training. This is something I believe we spoke to you about six months ago.

Phase I was an example of understanding where our fundamental skills were of our people and developing some exams and testing methodologies to in fact prove where they are at and find out the base knowledge level of the individuals.

We did have some failures. We did have some remediation and we did in fact remove their qual's and disallowed some individuals from doing work in our power plant until they got up to speed and could demonstrate proficiency in their field.

In the area of Phase II, that I think will be our

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next very proactive approach, is we had a heavy reliance on contractors at the Dresden Station for years, and because of that, we did not get some of the training and specialty training to our fellow employees.

We are changing that. We are investing in our individuals and we are going to start in June our very first, if you will, specialization training. We are going to do roto alignment of pumps, something that had been done with contractors for many, many years.

I believe that by investing in these individuals, this specialized training, we will be able to reduce the re-work at the station. In addition, we are going to continue to benchmark against strong industry maintenance training programs.

Next page, please. In the area of maintenance self assessment, this was not a strong point for us at the station. We have currently completed our first self assessment. It did involve some bargaining unit as well as

first line and management and maintenance staff personnel.

We chose to look at measurement and test equipment and the results of the report were excellent. However, the results of the findings were that we had significant problems in the area of M&TE. It ranged from the database being inaccurate to some of the personnel performing duties in that not having up to date qualifications.

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With that, we have taken some deficiencies and placed them into our nuclear tracking system and we will be completing the corrective actions to that to improve that area.

Another area is in the area of weekly maintenance coaching and assessment job overviews. This is an approach where my general foremen level go out into the plant and observe their work crews performing work and developing, if you will, a critique, of how they are performing. After that is complete, at the end of the month, I chair a meeting where all of them are invited to one meeting, and they have to describe the barriers and what they have seen out in the plant.

I then take all the information at my disposal in terms of problem deficiencies that were found, re-work issues and all sorts of other data, to, if you will, counter what they are seeing in the field. It is entirely possible until we really show them how to observe out in the field, they won't be able to be effective. This is a technique that we believe will get them up to speed and make more meaningful use out of their time in the plant.

We also perform management by walking around as well as continuing to reinforce the maintenance workforce standards.

In summary, the material condition at Dresden

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Station is improving. The workforce is energized and wants to improve. We need to sustain this continued improvement and ensure plant equipment reliability.

Through reliable plant equipment will come the rebuilding of confidence by our station operators in their plant equipment and in their maintenance department.

With that, I would like to introduce Raj Kundalkar, our Engineering Manager.

CHAIRMAN JACKSON: Let me ask you this question. Given that even you admit that the skill of the craft is still weak, even as you have these fairly aggressive programs in place, should the Commission have comfort that you have plants that are operating, that people are working on, given the potential for events caused by maintenance or equipment problems of various kinds, where you admit that the skill of the craft, the people working on these operating plants is not where it should be?

How do you give us comfort in that regard?

MR. SWAFFORD: One of the mistakes we were making through the years is in some areas, we had some skilled craftsmen, but through our process, we would not get them on the right job, as an example. Even in those areas where we had the qualities and the skills, we didn't get them on the right job, thus, resulting in a lot of re-work.

Another example that was a large part of our re-

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work was we allowed contractors to basically go unsupervised with ComEd personnel. What I have done recently is I have taken all contractors and have integrated them into the crews and into the shops proper, so that I have my own supervisors overseeing their work activities in the plant.

These two areas alone, by getting the right workers on the right job as well as getting contractors integrated, should ensure the minimum level if not a little more than that, of being able to perform maintenance in nuclear fashion.

We still have a way to go. We have some areas where we have relied totally on contractors and we are starting to train them ourselves. We will have to continue to rely on contractors in those areas until we get our people up to speed.

I think the answer is no, I am not afraid of the overall skill level. It is just we are not where we need to be.

CHAIRMAN JACKSON: I don't mean to pick on you and it looks like Mr. Perry wants to jump in here, but let me just repeat. To the extent that you told me this, but that you still have significant re-work, which then naturally raises the question about the skill or attention to detail

of whomever is doing the work, be it contractors or your own people, whose skills you are trying to improve, and I

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repeat, these are operating facilities we are talking about, you know, how do we get a comfort level that somebody is not going to cause something untoward that results in a significant event?

MR. SWAFFORD: The PMT process is not a particularly good answer, I don't think, but the PMT process is our last barrier and that is a post-maintenance test, which is our last barrier to ensure that before we turn that equipment back over to Operations, that it in fact will do its function. The quality of those PMT's are for the most part laid out by the Operations staff, which is the users of the equipment.

We are identifying the large majority of re-work in the PMT stage or earlier. Therefore, I don't believe when we actually turn the equipment over to Operations, we are on a daily basis, if you will, challenging the operators.

CHAIRMAN JACKSON: Do you agree with that, Mr. O'Connor?

MR. T. O'CONNOR: Yes, I do. Preston is exactly right. Our PMT process, although it does have some things to improve, it does catch the issues that we need to assure that the equipment is fully functional before we call it operable, so that we are not putting our operators in the kind of challenges -- the start ups here on the last two

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units indicate and demonstrate that is working effectively.

CHAIRMAN JACKSON: What about operator work arounds, however you define them? Whenever I ask that question, somebody always says, well, it depends upon how you define "operator work arounds." You define them. The question is, you know, how many such are there and is that number being reduced?

MR. T. O'CONNOR: There is a slide, Chairman Jackson, that Raj Kundalkar will explain on operator work arounds and where we are currently heading, if that is acceptable, otherwise, I will try to answer.

CHAIRMAN JACKSON: I will wait. Mr. Perry, you have a comment?

MR. PERRY: No. I was going to discuss where most of the re-work comes from, and it is the testing before we return it to operators, but they handled it very well.

CHAIRMAN JACKSON: You schooled them very well. Thank you.

COMMISSIONER ROGERS: What is different about the PMT process from what has been the practice in the past?

MR. T. O'CONNOR: One is we benchmarked several other stations outside ComEd where a committed, dedicated group of personnel from a variety of different disciplines, Engineering, Operations and Maintenance, are now under one collective group underneath our Engineering Manager, that

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works closely with Operations. They now look at all the different work packages, look at the surveillances, and look at all the technical requirements in order to assure that we meet operability to the fullest degree.

We have supplied from Operations three SRO's that are full time to that particular group. That is significantly different than we have had in the past. Typically, it was relied solely on a work analyst type of individual, to hope that he would get the right things, and the screening process that would be done by our control room personnel before they would actually call the equipment operable.

MR. KUNDALKAR: Chairman Jackson, Commissioners, I am Raj Kundalkar. I am the Engineering Manager for the Dresden Station. I am one of the newer members of the team. I joined the Dresden team in February of 1996.

Prior to that, I worked for the Florida Power and Light Company for seven years and between 1992 and 1996, I was the Engineering Manager at the Turkey Point plant, and in that capacity, I was responsible for the engineering team.

Today, I am going to summarize the results of some of the key performance indicators. I am going to share the results of the self assessment that we do in Engineering. I am also going to show some examples of system performance

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training and how we are using that information to identify negative trends before they develop or come to surface.



Before I get to that, I will describe our efforts and what we are doing to find out the hidden or latent material condition problems. You had asked about this last November and at that time, we were just starting the project. We have recently completed the project and I will summarize some of the results.

The latent material condition improvement project was like the name says, go look for the hidden problems before they come to you, implement appropriate PMT actions, so that they do not become an issue.

We did this by assembling a team of very experienced engineers from the industry, from General Electric, Bechtel, Duke Engineering and also a team of Commonwealth engineers, ComEd system engineering.

The approach the team took was review of the systems' past performance, compare that to comparable systems of comparable vintage in the industry, see how failures in the past had been addressed in correcting some of the past problems, do an extensive walk down of the systems. Start with the operators, the systems engineers, and also review the literature that is available from the industry and the vendors to see if the recommendations and the lessons learned over a period of a number of years have

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been implemented in our plant components and systems.

We have completed review of 27 systems. The first thing we did was to review all the observations to ensure there were no operability concerns and that indeed was the case.

The second thing we did was we listed each one of these observations under the individual system headings, and then looked across the systems to see if there was any common element or problematic issue that we needed to address and a review of that is listed on the next page, slide 36.

[Slide.]

MR. KUNDALKAR: The review identified two specific areas that we needed to pay attention to, we were not doing the right type of preventive maintenance. We were not doing the right scope of preventive maintenance or we were not doing it at the right frequency.

In addition, even though we were doing some preventive maintenance, such as vibration analysis, thermography analysis, we were not effectively using the results of these trends into the system performance trending and taking appropriate corrective actions.

I will address how we are going to take care of those in the next couple of slides, but let me go on.

The next group of observations the engineers made

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was that there were a number of recommendations that we had not implemented. The team identified that from the past failures, we had not found an appropriate root cause for a number of problems and we needed to address those in a timely manner.

The team identified that we needed to have a plan to deal with the obsolete equipment, such as the electronic cards in a number of our control systems. We needed to develop a plan such that even if the original equipment supplier goes out of business or does not provide support for these components, we should have an alternate plan in place, and we are doing something about that.

CHAIRMAN JACKSON: Where are you with respect to that? That could get to be a big issue.

MR. KUNDALKAR: Yes. In the case of the EHC system, these components, GE has alerted us that we are on a last time order situation and then we are looking into other suppliers, to come up with comparable equipment or comparable cards for replacement. I could not give you a numeric measure.

CHAIRMAN JACKSON: You have identified alternative vendors?

MR. KUNDALKAR: We have identified alternative vendors, not in all cases, but a number of critical cases, where we can go to and then initiate a process for

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replacement of these electronic cards, if you will.

Other issues the team identified was we needed to pay attention to operator work arounds, a number of historic problems have resulted in operator work arounds. Later on, I will describe the results of that initiative.

We needed to pay attention to temporary alterations, which are again a result of some portions of

equipment not working like they should. We needed to pay more attention to configuration control of the plant.

We are in various stages of implementing these recommendations. The middle block, for example, prioritizing these and scheduling these to implement in the balance of 1996 and 1997, whether we can implement these on an on-line basis or it will require an outage to make some of these improvements.

CHAIRMAN JACKSON: Have you prioritized them in terms of risk?

MR. KUNDALKAR: Yes. That is the first step the engineers have done. The way we did that was the key system engineers for individual systems sat down with a review team and looked at the importance of each one of these observations to bring the important ones to the surface and we will then implement them in that priority; yes, ma'am.

CHAIRMAN JACKSON: None of them are such that you feel the plant needs to shut down to do?

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MR. KUNDALKAR: That is correct. None of those have posed any outage concern or threat to safety of the plant.

CHAIRMAN JACKSON: If I talk to you a month from now and you have had some significant event, then none of these things that you have identified will be a causative factor?

MR. KUNDALKAR: Yes, our assessment is that none of these will be the cause.

CHAIRMAN JACKSON: I am going to keep that in mind.

MR. KUNDALKAR: Yes, ma'am.

COMMISSIONER ROGERS: Before you leave that, do you see this as an one time project or are there some -- it looks to me like some of them maybe things that you will have to continue to keep your eye on and some things you can deal with once and then they are done.

How do you see this latent issues finding process going on in the future?

MR. KUNDALKAR: Even though the initial effort was based on getting help from the industry experts, one of the goals of that effort was we train our system engineers in that process, so the next group of systems would be done using in-house resources. Our first effort would be to implement what we have found to date. We would plan, based

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on the priority of the systems, approach the next group of systems until we come to a stopping point.

Next slide, please.

[Slide.]

MR. KUNDALKAR: Long before this material condition improvement project was completed, we recognized that we needed to improve our preventive maintenance program. Therefore, early last year, in 1995, we assembled a team of senior engineers, from Maintenance and also Operations personnel, and systematically started looking at our PM program, using the performance centered maintenance.

There is a template that Commonwealth has prepared that is being used and we use that template as a guideline in establishing the right type of PM's on the right frequency and also give guidance on preventive maintenance and what kind of data we need to collect and how that needs to be fed back to the system performers.

Our goal was to do approximately 14 systems by April 30. We have completed a review of 30 systems and implemented the recommendations for five of those 30 systems. This effort will go on. By the end of this year, we plan to finish review of about 50 systems and I don't remember exactly, implement an additional 15 or so. This effort will continue in 1997.

CHAIRMAN JACKSON: When do you expect, based on

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the systems you have identified so far, to bring the implementation to closure?

MR. KUNDALKAR: The second quarter of 1997, and I'm speaking from memory, is roughly the time frame where we will have implemented all the recommendations of this PM improvement project.

CHAIRMAN JACKSON: This is based on the 90 systems you have identified?

MR. KUNDALKAR: Yes, ma'am.

As the number of the findings indicate, we have made a substantial number of additions to the type of PM's we need to do and also change the frequency as appropriate.

We will do a self assessment in July to see the effectiveness of this process and if any corrections need to be made to the program, we will make those.

[Slide.]

MR. KUNDALKAR: The next two slides are a look at material condition from the operator's perspective. The first one looks at operator work arounds. When the equipment or systems do not perform their intended function as designed, then the operators have to take some manual action, additional action. That is what we call operator work arounds. That places a burden on them, obviously not a desirable condition.

In this initiative, working closely with  
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Operations and Tim O'Connor's operators, our goal was to drive the known work arounds to a small number and also deal with any new work arounds that get identified so the backlog keeps coming down.

CHAIRMAN JACKSON: Is your definition of "operator work arounds" the same as or consistent with that of the best performers in the industry?

MR. KUNDALKAR: Yes, ma'am. In my mind, Turkey Point is one of the best performing plants in the industry and it was the same definition used there. In fact, our level of threshold for saying something is an operator work around is lower than what was used, in my experience.

MR. T. O'CONNOR: It also benchmarked two other SELP I stations and that formed the basis of the definition that we are currently using for our operators to identify items that would be considered work arounds.

CHAIRMAN JACKSON: How does your goal compare to using this consistent definition?

MR. KUNDALKAR: Again, my experience from the other plant, approximately 25 work arounds are open. The issue was not how many work arounds --

CHAIRMAN JACKSON: That's right, how significant.

MR. KUNDALKAR: How significant they are and immediately addressed if there is an operator concern or a safety concern. As long as you have established that, you

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have a sufficient amount of time to implement corrective action, as long as you schedule those and work them out on a priority basis.

Our goal was by April 30, to bring the backlog down to 30. In fact, we have met that goal and exceeded that goal. As of April 30, we were roughly at 27. We have established an end of year goal where we plan to be at 20 or below. I expect to meet that goal.

[Slide.]

MR. KUNDALKAR: The next slide, again, examination of material condition from the operators' perspective. The control center control room properly functioning is an essential part for an operator to be effective in his job, and therefore, if any deficiencies are identified in monitors, controls, they need to be resolved in a timely manner and expeditiously, so the goal of this effort was to work closely with Operations again, establish priority, and with the help of Maintenance, work off and resolve these control room deficiencies, such that the operators would get a well functioning control room, indications as well as controls.

Before we started up Unit 2, for example, we only had two control room deficiencies open on that particular unit. They were of low importance, low significance. One was a temperature indication in a heater bay and another one

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was re-calibration of a particular recorder. Operators have complimented this effort, saying this is the cleanest they have seen the control room in many years, in the recent past.

We have established a new goal for the end of the year to be 20, and I expect to meet that goal.

[Slide.]

MR. KUNDALKAR: I am on slide 40 now, and the next slide is unplanned LCO/DATR days.

This is a major wait period for ourselves. This is a measure to see the effectiveness of our PM program, preventive maintenance program. If we are tracking the performance of the system and then predict potential trouble or a breakdown and before that occurs, take appropriate corrective action, then we would not have to have unplanned LCO's to take those corrective actions. If you are not doing the right performance monitoring, then when the

equipment breaks down, we would have to enter unplanned LCO's to take the corrective action.

DATR days are for smoke detectors, emergency lights, things of that nature.

As the picture indicates, the heavy blue line is the number of unplanned LCO's. It is definitely trending down to a low number. The thin blue line, which looks like a combination of the LCO days and DATR days, is again

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trending down. Our goal of being less than three unplanned LCO/DATR days per unit has been met and we will continue to track this measure to again examine the effectiveness of our PM and preventive maintenance program.

[Slide.]

MR. KUNDALKAR: The next three slides look at performance of our safety systems and how we compare against the industry average. We do that by comparing the unavailability of a system, defined as the number of hours a system is unavailable, divided by the total number of hours it needs to be available.

The first picture looks at high pressure coolant injection and isolation condenser system. The industry average there is indicated by the red dotted line and the 12 month rolling average is shown by the blue line. We beat that goal on both units. Even though we have beat that goal, we are not satisfied with this performance.

As you see with the yellow bars, they indicate some corrective actions of planned maintenance activities we are to perform. We need to do more work in this area and I expect to further improve the performance of the system in the upcoming six months.

The next picture is performance of our low pressure coolant injection and the shutdown cooling system. Again, the red dotted line is the industry average. On both

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units, we meet or exceed the goal we have set for ourselves. The large blip you see in April of 1996 was because of a planned corrective action for the LPCI system. That is why you see that number.

The next picture is a similar look at our diesel's. The industry average for unavailable days, and at the end of April, we met that goal. The large bar you see in the month of February was again a planned maintenance overhaul of our diesel's. When we took a diesel apart, there was some additional discovery items, so we decided to take the extra time and fix the diesel's, such that they would perform later on. We do meet our goal and we plan to continue to monitor this goal.

The next picture is a look at temporary alterations. These are temporary modifications when equipment does not perform as desired or as designed. These are temporary means of fixing them. In some cases, they are also required to monitor certain plant parameters, so they are not always to take care of band-aid type solutions. These may be specific plant alteration which may require some installation of instrumentation to monitor certain types of performance.

Even though the picture shows the performance in the year 1996, prior to that, which is not shown on this curve, we have identified and resolved approximately 120

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temporary alterations. These have been as a result of the system engineers and Operations personnel taking a proactive role in identifying them as part of their walk downs and then Engineering either eliminating them or implementing the appropriate modifications so you would not have to rely on temporary alterations.

Again, our end of April goal was to be less than 10 non-outage temporary alterations and we have met that goal.

We established a higher goal for the end of the year, seven or less than seven temporary alterations.

[Slide.]

MR. KUNDALKAR: Next slide, please. This is an example of how we are tracking the performance of our systems, the performance of our systems is tracked and trended using a number of measures, individual performance criteria in terms of availability or unavailability, and then tracking if there are any unresolved operator concerns or industry issues.

CHAIRMAN JACKSON: Is this a monthly monitoring system or quarterly?

MR. KUNDALKAR: Yes, ma'am, it is a monthly

measure and a similar type of window is created or set of windows are created for all systems. These are examples of the type of criteria or performance measures that are used

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to see what is the status of that system and it is displayed in a color format, going from green to red.

For example, in the control rod drive system, there is a known industry issue about the SSPV's, the scram solenoid pilot valves, and GE has identified that and we are in the process of changing that material. Even though we have planned and are in the process of implementing this corrective action, the color of this window would remain yellow until we have fully resolved the issue, which would be sometime in June of this year.

CHAIRMAN JACKSON: You are changing them out or changing them out again?

MR. KUNDALKAR: We are changing them out with improvement of material that GE is trying to supply to us.

CHAIRMAN JACKSON: I thought there was an issue having to do with going to some new material and then there was some questions about the performance of that new material.

MR. KUNDALKAR: The material we will be using to change them out with will be the new improved material.

CHAIRMAN JACKSON: All right.

MR. KUNDALKAR: Again, I use this performance indicator to assess where we need to apply more attention, apply more resources and what kind of corrective actions we need to take.

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CHAIRMAN JACKSON: This is monthly, you said?

MR. KUNDALKAR: Monthly indicator. It is displayed on the wall of the Engineering hallway. It is very visible to not only me but the plant management and used to question us as to how we are doing in those areas.

The next page is a hard look at ourselves, a self assessment of all aspects of work that Engineering does. Those are listed in that left-hand column. For each one of those categories, there is a performance criteria established. It is a numeric goal. Whether we meet or exceed that goal determines what color window it would be.

We are doing well in the area of unplanned LCO's, meeting critical surveillances, operator work arounds, control room correctiveness.

In the area of engineering backlogs, the window has been red, and I will address that in a minute. In the case of significant events, actually these are personnel errors, the window has been red because on the 9th of February, there was an error made by an engineer in doing a specific surveillance which was to examine the fuel consumption rate for a diesel fuel oil transfer system. Our criteria in Engineering is more stringent than the plant's criteria. Our criteria is if an error is made, you need to have 90 days of error free performance before you can change the color of the window, and 120 days before a yellow window

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can become white and 150 days before it can become green.

As we sit here today, the color of that window would be yellow, and if we continue the same trend, I expect we will see that change to white and green.

In the case of engineering backlogs, we do have a large number of engineering items to resolve in the backlog. They are a combination of things. They are not necessarily modifications awaiting engineering resolution. In a number of these cases, these are questions asked by Maintenance for some specific type of information and in some cases, these are types of activities you do to help construction, such as scaffolding requests, shielding requests, insulation requests.

At the same time, I do have a large backlog, and with the additional resources that have been made available to me, we are again prioritizing and scheduling resolution of this backlog. We plan to bring it down by the end of this year and by the middle of next year.

CHAIRMAN JACKSON: Where do you stand relative to design basis documentation and FSAR issues?

MR. KUNDALKAR: Let me take the design basis documentation first. We have an initiative to improve our design basis documents. For this year, our goal was to complete 25 systems, to create design bases for 25 systems. We are on track to finish that work. We have completed, I

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believe, approximately 23 systems, and by the end of the

year, we will have completed detailed design basis packages for 25 systems.

In the case of FSAR, we have a number of initiatives in place. Let me answer that in two parts. Our FSAR was re-baselined in 1992/1993, and by that I mean all the open outstanding issues, LER's, correspondence with the Commission, and any other known issues, changes to procedures, were incorporated in what we call a re-baselined FSAR, and that was submitted to the Commission, again, based on some interaction and comments we have had from you.

Recently, prior to Unit 2 start up, we undertook an extensive look to examine if any of these backlog items that are on the table have any impact on what is in the FSAR, do they cause any deviation from the FSAR. We did not only look at open engineering backlog items but also LER's, are there PIF's, problem identification forms, open work requests, where the work request has not been implemented, and we have found there is some clean up needed in approximately 30 to 35 items.

In addition, we need to do some modifications to the plant, and I think it was on four specific occasions where we implemented those modifications prior to restart of Unit 2.

Starting now, to the end of the year, the initiative we have now in place would look at all sections of the FSAR, working closely with Operations. The combined team with Operations would review individual sections to see if the operating procedures are in sync with FSAR and if not, then take appropriate corrective action.

Some additional resources have been made available to us, just to address this issue.

In addition, our corporate engineering group has done a self assessment of our activities prior to start up of Unit 2, and also how we are planning to look at the FSAR, starting now to the end of the year.

CHAIRMAN JACKSON: Do you feel that by the end of the year, there won't be any issues?

MR. KUNDALKAR: I expect we will be in good shape by the end of the year as far as FSAR compliance is concerned; yes, ma'am.

Finally, we have strengthened the training for our engineers. It was done as a result of self assessment again and we benchmarked it against three plants in the industry that are considered to have strong training programs. From those lessons that we learned, we improved the quality of our fundamental training, which is similar to what is given to the operators. These will be items such as reactive theory, thermodynamics, process controls. All that training has been completed in the last year for all the engineers.

The second part of that training --  
CHAIRMAN JACKSON: This is for the design as well as the system engineers?

MR. KUNDALKAR: Design as well as the system engineers and we also included engineering support personnel.

The second part of that training was systems training. We used the same modules the operators use for their systems training, but then we increased the emphasis on the design basis type information in those training modules as opposed to the items that are normally memorized by operators, check valve numbers and things like that.

From our perspective, it was more important to emphasize the design basis information as far as the systems training and the interrelationship and interaction within the systems.

That training is on track, the portion that we were supposed to complete by April 30 has been completed. The last batch, as we speak, is finishing up their examination. It is the last set of system engineers.

Our goal is to allow them to work inside the plant only after they have met the training requirements and successfully finished the training. In fact, I, myself, took this training to orient myself in the plant and second, to make sure that the training had adequate breadth and

depth in all the aspects of system related items that I expected the training needed to have.

In the second phase of training that we plan to do in the latter part of this year, we will address some specialized areas, like changes to the modifications that we have done, station blackout, diesel installation is probably

one example, and some specialized topics, such as terminal performance, so we can further improve our efficiency of the secondary site.

CHAIRMAN JACKSON: You plan to keep your PRA up to date as you modify the plan?

MR. KUNDALKAR: Yes, ma'am; absolutely. That is correct.

In conclusion, Chairman Jackson, Engineering's role is to support Operations and Maintenance in the plant, based on the performance indicators we have seen, safety system performance indicators, as well as working off the backlogs, start up of Unit 2 and the smooth operation of Unit 3, demonstrates that Engineering is supporting the plant like it should.

We are not only fixing the known problems, but like I described, we are going after the hidden problems. We are upgrading our PM program and preventive maintenance program. Even though we are satisfied with the goals we have reached on April 30, that is not the end of the job and

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we have established the next level of goals to be met by the end of the year, and with the same momentum that we have, I expect to meet those by the end of the year.

MR. PERRY: Chairman Jackson, I have under ten minutes to finish this.

Page 49, please. Again, this is a synopsis of your letter. The first question I will address is the last question on the page, will the improving trend continue.

We have been asked before about the performance at Dresden, up and down. When we were here in November, Commissioner Rogers and you, Chairman Jackson, asked the same question in a slightly different form, and that was we have heard all this before, why is it different this time.

That to me is just a restatement of the question. I will answer this by approaching it the same way we approach issues in the nuclear industry, and that is to first try and identify the root causes and then we will address the corrective action for the root causes.

I see two issues here. The first one is in years past, Dresden has been unwilling to face the reality of their performance. They just did not think they were that bad. They would respond to external stimuli, either from the NRC or from INPO, and put a program in place to deal with it, frequently see an improvement in performance as a result of that program, but when the stimuli was removed or

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diminished with age, there was no inner drive at the station to continue the program, and so it would frequently languish and performance would tail off again.

The second issue is accountability or more accurately, lack of accountability. Managers at Dresden didn't hold themselves accountable, didn't hold their subordinates accountable, their peers accountable, or their seniors accountable. As a consequence, when a program did languish, that was okay because I didn't feel accountable for it.

Those two issues are the basis for what I view as the root causes for the cyclic performance in the past. How do you address that? What we have done, I think, is the same answer for both of them, and that was Mike Wallace addressed it in November when he said we were changing the leadership, and we have changed the leadership at Dresden.

We have brought in new managers. In fact, six of the nine managers, the top managers at the site, are from other utilities, who were all in a turnaround situation. In fact, five of the six individuals are currently in the same position they were at the utility they came from. There is a lot of experience there.

Go down one level into the middle managers, 21 of those, 11 of those are new. All of them are from either turnaround plants or plants that were performing well.

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These individuals, when they see a mess, they recognize it as a mess. They call it a mess and they deal with the mess. They all were grown up with accountability. That is how they achieved success in the places they came from. They held themselves accountable and they held everyone around them accountable.

These individuals here whom you have heard speak today are representative of the people we have on the site. Accountability is a way of life at the station, and you heard us talk about how we are holding people who work for us accountable and how we are trying to drive that thought

process down into the work organization, particularly targeting the first line supervisors and encouraging them to get it into their people in the workforce.

We are having some measures of success. We are teaching our first line supervisors, both formally in a classroom environment and informally, as you heard here, on how to run their people, how to hold their people accountable.

For example, we have given each of the first line supervisors -- in fact, everybody who supervises anyone at the site from me on down, we have given them four days of training on how to deal with the bargaining unit, something we haven't done well in the past. It has had an immediate identifiable effect on the site that we as the first lines

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and their superiors are now running and managing the station.

Our approach to this issue is to get the first lines to run the plant on a day to day and week to week basis. I would predict that in about a year to a year and a half from now, they will be indeed running the station and there won't be anything that I or these other managers can do that will turn them around because once they get the taste for running it, they won't permit me to allow cyclic performance at the station.

The second question was does our workforce understand and implement our standards.

[Slide.]

MR. PERRY: If we turn to the next slide, the way I approached this problem was to commission two assessment teams. I asked my Plant Manager to put together a team of line managers and I also asked my quality organization to put together a team.

The line managers consisted of a middle manager and six others who were divided between working level individuals and first line supervisors.

The second bullet shows the areas that they looked at, pretty wide view of what was going on at the site, and the results are indicated under the "Results" bullet. The first one was what the management team came up with and they

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felt there was a strong understanding and implementation of standards throughout the site.

Quite frankly, I think they missed the mark there. I don't think we are as good as that. My personal opinion is that although people understand and are aware of the standards, they have not yet internalized it to where they on a minute to minute basis with their hands, what they are doing, can relate to those standards.

I think that the management team found a lot of enthusiasm and energy to try and get better and they mistook that for real implementation of the standards. I will give some evidence of that a little bit later.

In fact, one piece of evidence is what the quality organization found. I thought that was a much more balanced look at the situation, and I will give you an example of that, talking about self verification, which we like most utilities in this industry in this country, use the START program, which means to stop, think, then act and then review what you see against what you expected to see.

What the quality organization found is that there was widespread understanding and awareness of STAR. In fact, they saw many examples where the supervision reinforced those principles in pre-job briefs and tailgate meetings and the like, but when they observed people in the field, they found that outside of Operations, Operations

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does a very good job at this, both in the control room and outside the control room, but the other people in the field had inconsistent application, which is what was in my mind, that everybody understands it, but they don't know what it means when they are going to do this particular item necessarily.

It is an area that we are going to continue to work on. I did bring one piece of anecdotal evidence, if I may. In early April, we had a licensee event report occur on Unit 2, which was shut down at the time, when we were doing maintenance and had expected an alarm. The operator was briefed on what to do, which was basically to silence the alarm. He in fact pushed the wrong button. He pushed the manual Scram button, which was an event that reset our clock and also prompted our licensee event report.

Several days after that, in the Dresden Daily



News, which is published fairly independent of me, this article appeared that he conjoined the Editor into including in this, without any management prompting, this individual is a reactor operator, bargaining unit individual -- I'd like to read the paragraph to you.

"A few days ago, I placed Unit 2 through an unnecessary transient. It was a mistake on my part. My attitude toward mistakes has been that honest mistakes will happen. My mistake was 100 percent avoidable. I now

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realize that in itself makes it a selfish act on my part. Like many of you, this job is my livelihood. I depend on it. The success of this station will be determined by the success of its people. I let all of you down by committing this selfish act and I cost the station a black eye. The concept of STAR when practiced might not catch an honest mistake, but it will prevent avoidable ones."

He goes on for about five paragraphs explaining the STAR process and winds up saying "In closing, I wish to extend my apology to everyone here at the station."

This is at least one individual that fully understands what the standards are we are trying to impose throughout the site.

If we could go to the next slide, please.

[Slide.]

MR. PERRY: This is just a wrap up of all of the performance targets that we said we were going to achieve and I want to make some points here. The top six items there, the goals we set for ourselves, were all significant improvements over performance in 1994 and earlier. The bottom two were new measurements that we created at the site, so there is no history on those.

If you go down to the fifth one where it says zero preventive maintenance past critical. "Past critical" means beyond the grace period and usually 25 percent of the

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interval that the PM is performed. We had over 150 of these that were past the critical date.

In fact, when we went back, we decided that we were going to make this applicable to all PM's, whether they were beyond the critical date or not, and we had about 480 of those.

When we presented this to the preventive maintenance coordination group that schedules and coordinates these things, their response to us was impossible, and yet we achieved it. The point of my giving you that little story was just to establish the credentials of these being tough goals, because that was a tough goal.

Similarly on the next page, we went through our safety system performance and the industry's national average, which is much lower than the goals that the industry had set for itself, the industry is performing very well in here, and for us to meet the national average as good performance, and we are better than the national average in all five of these.

Similarly, we discussed at some length the Operations events. These goals that we set for ourselves were much better than 1995 performance. We didn't achieve them but the goals were tough goals.

Finally, on the last page, again, I want to single out one in particular. It is the zero overdue corrective

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actions. We hadn't prior to this point addressed that one. In the Summer of 1995, we had several hundred corrective actions that were overdue, beyond the due date. We put an effort into that and did drive those down to zero by the month of October. We set a goal, a perpetual goal, in effect, to have zero overdue corrective actions. We wanted to achieve that, to have none between October and April 30.

We didn't achieve that goal. We had four overdue actions and we extended it beyond just corrective actions to everything that was in our tracking system, the bulk of which is corrective actions, but not completely.

We did over that seven month period, we closed 1,900 items, four of them were overdue. That means they missed by one day. That is all it takes to get the bean counted.

I think it is clear that, too, is a very tough goal. We viewed all of these as tough goals. Just to reiterate what I said in the beginning, to achieve 68 percent of them is clearly a good performance in my mind. You can form your own opinion, of course.

I will finish up by saying the following: talking

to a reactor operator in a control room a month or so ago, he made a comment, I've never seen that work before. It struck a cord with me. I collected the never seen before's. These are from the control room operators who have been at

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Dresden for 10 to 15 years, and in that 10 to 15 years, these individuals have never seen these things before.

The feed water control system working, three element control and automatic. We are still on Unit 2 in the middle of testing it, but we have been operating it automatic in three element control for many months on Unit 3. Never seen before.

Two steam generator rejector and off gas trains working on each unit. We have had one operating for as long as any memory exists on this site and we have put both of them back in operation.

Unit 2 reactor vessel drain, which has been clogged up. We showed you the pictures when you were there in December and probably some construction days. That is now clean and operable.

The booster pump, feed water booster pump minimum flow valve is now operable from the main control room area. Operators have never seen that before.

The Unit 1 fuel storage pool. You can see the bottom of the pool. Never been able to see that before.

Service water radiation monitors work properly. Hydrogen analyzers, which monitor the hydrogen in the containment, work properly. You already heard Raj say that the main control room panels on Unit 2 have never been so clean in terms of deficiency tags.

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To provide a balanced view, after a week of this, I decided to ask the operators what they had not seen yet, and the predominant answer, in fact, almost exclusive answer, is we have yet to see an outage performed for the plant. That is what we have to work on.

That concludes my statement.

CHAIRMAN JACKSON: Thank you very much for a comprehensive briefing. Do you have any further questions?

COMMISSIONER ROGERS: I have one question. I thought this was very helpful and very informative. One matter that nobody touched on was your IPE. We had a briefing a few days ago on the status of all the IPE's. I noticed that ComEd had several IPE submissions that didn't meet the intent of the NRC's generic letter.

I wonder if one of you would care to comment on the Dresden one, but Quad Cities and Zion also did not meet the NRC's intent of the generic letter, and I wondered whether you had something to say on those matters.

MR. KEISER: We have met with the staff on the issue and have plans in place to resolve the discrepancy, the differences, if you will, and resubmit. It has been an agreed to plan with the Commission. It is actively on the way. It has to do with how we treated the human performance or human errors within the IP.

COMMISSIONER ROGERS: That is a common factor for

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all of those?

MR. KEISER: Yes, sir.

COMMISSIONER ROGERS: Human factors?

MR. PERRY: Right.

COMMISSIONER ROGERS: You feel comfortable that you can do that?

MR. PERRY: I think the commitment now for Dresden is in June, as I recollect, that we will have it submitted.

MR. KUNDALKAR: June of 1996; that is correct.

CHAIRMAN JACKSON: Commissioner Dicus?

COMMISSIONER DICUS: One quick question. You identified what you thought were two root causes of problems that you have been having and some fixes for those. I was curious, for this get well plan and for where you hope to be, what do you think is the major obstacle you face?

MR. PERRY: Any time you try to change the culture of people who have grown up in that culture for 15 or 20 years, it is a big effort to change people's mind about things. I believe that the way you do that is with energy and enthusiasm at the top and getting the first line supervisors to accept their role as managing the site, which I have described in some detail, and hopefully with enthusiasm, that is where we are driving. That is our obstacle, to get everybody to change how they grew up.

CHAIRMAN JACKSON: I have a question for you, Mr.

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O'Connor. It is not one that CEO's like people to ask them. Let me ask you this. You have various initiatives to deal with deregulation and competition. Can you assure us that these initiatives will not compromise your ability to continue the improvement path you have started on at Dresden, as well as to improve the performance of a number of other plants?

I guess the question essentially becomes how do you avoid such impact, given the resources that may be required and given the amount that you have already put into the plants this year, the figure that you talked about earlier.

MR. J. O'CONNOR: Chairman Jackson, having read a number of the things that you have said recently on this subject of deregulation, I would just simply like to say that we believe that to succeed in the competitive marketplace going forward will require that we have safe and reliable and high capacity factor nuclear power plants.

In order to get to that level, we are going to have to apply the resources that are required. The two do go hand in hand. We understand that. We have a Board that is committed to do that. I think there is no misunderstanding on the part of the people in the nuclear line organization in being responsive to their requests, that we are prepared to do that going forward.

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CHAIRMAN JACKSON: I would like to thank you again for briefing the Commission. Your presentation today has provided the Commission with a clearer idea of the path that you are following and the status of your efforts to improve station performance at Dresden.

You appear to be on a progress path. I will say that. I can't stress enough the importance the Commission places on the need for continued progress and focused management attention to prove to yourselves as well as to us that your efforts are effective.

Everyone here practically is new in these key areas. I know that Mr. Maiman is new in this position and Mr. Swafford mentioned he had only been in the job for five months, and Mr. Kundalkar mentioned he had been at Dresden since February.

It seems that you finally are really dealing with self assessment and accountability. It is important that the response to the issues at the lower levels is clear.

I urge you not to rest on the fact that you have gotten started, because really what you are doing is you are struggling up the hill to get to industry norm's. I remember when you were here before and I talked about that a little bit. There were comments that, well, you have improved but the industry is going on. Now we are entering more and more a period of deregulation and competition.

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It is kind of a colloquialism but it is true that if you are going to play on the field, if you are going to come play in the game, you have to play with the teams on the field.

If you are struggling up the hill to get to industry norm's, then that says that sustained performance is important.

Just from some previous experience, I would say that unless significant events and re-work is reduced, that your chain of improvement is questionable. You have had a focus on Dresden since my letter to you, but you do have the rest of the system, which is also of concern to the Commission. For example, Quad Cities. One issue, as an example, is unknown material condition problems at other plants.

I would just throw that out. Again, that is why I asked you the question, Mr. O'Connor, and that Commonwealth Edison has to devote sufficient resources to not only maintain the trajectory at Dresden over a longer term than we have had a chance to see so far, but to maintain the safe operation and make step change improvements at the other facilities that you have.

Based upon the Commission's concerns with Dresden, the performance of Dresden and the other Commonwealth Edison plants, we will be continuing to monitor closely the

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performance of Dresden and your other plants and assess them as we go along, because if the improvement trends are not sustained, you have to consider yourselves, perhaps shutting yourselves down to get your hands, if you can't do it -- that is why I asked the question about while the plants are

operating, and you have significant events, that you need to just figure a methodology perhaps to shut yourselves down to get your hands around the issue once and for all.

We can't have it go on. As I say, you appear to be on an improvement trajectory. I will put it that way. "Trajectory" means an initial velocity and a direction.

We have to see how it all comes out. Again, I thank you for the comprehensive review that you have given the Commission.

If there are no further comments, we are adjourned.

[Whereupon, at 3:50 p.m., the briefing was concluded.]