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Meeting Title: Briefing on The D.C. Code Plans

Meeting Date: 1/10/00

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Title: BRIEFING ON THE D.C. COOK PLANT
PUBLIC MEETING

Location: Rockville, Maryland

Date: Monday, January 10, 2000

Pages: 1 - 115

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

OFFICE OF THE SECRETARY

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BRIEFING ON THE D.C. COOK PLANT

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PUBLIC MEETING

Nuclear Regulatory Commission
Commissioners' Conference Room
Building 1
One White Flint North
11555 Rockville Pike
Rockville, Maryland
Monday, January 10, 2000

The Commission met in open session, pursuant to notice, at 10:05 a.m., the Honorable RICHARD MESERVE, Chairman of the Commission, presiding.

COMMISSIONERS PRESENT:

RICHARD A. MESERVE, Chairman
GRETA J. DICUS, Commissioner
NILS J. DIAZ, Commissioner
EDWARD McGAFFIGAN, JR., Commissioner
JEFFREY S. MERRIFIELD, Commissioner

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STAFF AND PRESENTERS SEATED AT THE COMMISSIONER'S TABLE:

WILLIAM TRAVERS, Executive Director for Operations

E. LINN DRAPER, Chairman & CEO, AEP

JOE POLLOCK, Plant Manager, D.C. Cook

ROBERT P. POWERS, Sr. Vice President, Nuclear Generation and Chief Nuclear Office, AEP

CHRIS BAKKEN, Site Vice President, AEP

MIKE RENCHECK, Vice President, Nuclear Engineering, AEP

DAVID LOCHBAUM, Nuclear Safety Engineer, Union of Concerned Scientists

JIM DYER, Administrator, Region III

JOHN GROBE, Director, Division of Reactor Safety, Region III

SAMUEL COLLINS, Director, NRR

JOHN ZWOLINSKI, Director, Division of Licensing and Project Management, NRC

SCOTT GREENLEE

ROBERT GODLEE

DON NAUGHTON

BILL SCHALK

WAYNE KROPP

MIKE FINISSI

SAM BARTON

DAVID KUNSEMILLER

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P R O C E E D I N G S

[10:05 a.m.]

CHAIRMAN MESERVE: Good morning. On behalf of the Commission I would like to welcome you to today's briefing on the D.C. Cook plant.

The Commission will hear from representatives of American Electric Power, the licensee for D.C. Cook, the NRC's Region III office, and Mr. David Lochbaum of the Union of Concerned Scientists.

The D.C. Cook plant was shut down in September, 1997, following an Architect and Engineering inspection that identified significant problems with safety systems. Subsequent inspections identified additional safety system deficiencies, most notably with the ice condensers. The NRC issued a confirmatory action letter in September, 1997, requiring the licensee to address issues discovered during the AE inspection and to perform further assessments and take appropriate corrective actions prior to restarting the plant.

After a slow start AEP has made substantial progress in discovering, evaluating and correcting a large number of issues, and after more than two years of effort is within sight of achieving restart.

I visited the D.C. Cook plant in December, 1999, and was impressed with the frank discussion by AEP of past

problems and deficiencies and of the steps that it had been taking to ensure that these problems and deficiencies are corrected and do not recur.

I was also impressed by the magnitude and quality of the NRC Staff's oversight activities.

I understand that copies of the handouts are available at the entrances. Unless my colleagues have any comments they would like to make, you may proceed.

COMMISSIONER MERRIFIELD: Well, actually, Mr. Chairman, just to make a note, since our last meeting I, too, have had the opportunity to travel to Michigan and visit at the D.C. Cook facility and meet with the individuals at this table as well as the staff of the facility and our Staff up there, and I would share the Chairman's comments about the work being done by the licensee and equally as well the hard work being done by our Staff to resolve these issues and move forward, and so thank you very much for your additional consideration.

CHAIRMAN MESERVE: Any other opening statements?

[No response.]

CHAIRMAN MESERVE: If not, Dr. Draper, you may proceed.

DR. DRAPER: Thank you, Chairman Meserve, and thank you, Commissioners, for taking the time to be with us today.

I am Linn Draper, Chairman and Chief Executive of American Electric Power. With me today are Bob Powers, Senior Vice President, Nuclear Generation, who is responsible for all aspects of our D.C. Cook operations; Chris Bakken, D.C. Cook Site Vice President; Mike Rencheck, Vice President of Nuclear Engineering; and Joe Pollock, the D.C. Cook Plant Manager.

Bob is our Chief Nuclear Officer. He will lead the presentation today to review the progress made towards the restart of the Cook plant.

Chris Bakken joined AEP from Public Service Electric & Gas Company, where he was Plant Manager for the two Salem units. Chris was a key manager responsible for returning those units for operation, and instilling the high standards of safety, reliability and accountability that enabled that organization to continue to perform well.

Mike Rencheck joined AEP from Florida Power Corporation, where he was Director of Engineering. He was part of the successful Crystal River 3 restart as well as the Salem restarts at PSE&G.

Joe Pollock also joined us from Public Service Electric & Gas Company, where he was the Maintenance Manager and previously the Quality Assurance Manager.

This has been a long and costly outage to AEP. It has been necessary to make improvements to our systems, our

components, material condition, processes, personnel training and our organizational culture. It has also been an important outage because it marks a renewed commitment by AEP to safety returning the D.C. Cook units to full power operation.

As the Chairman mentioned, the outage began in September of 1997. We shut down both units to address concerns raised by the NRC regarding the ability of the emergency core cooling system and the containment system to function properly in the unlikely event of a loss of coolant accident.

In early 1998, after we clearly saw the magnitude and the nature of the ice condensers issues, we decided to melt the ice and rebuild the ice condensers to a superior condition. This was the first of many similar and tough decisions to do the right thing when confronted with a problem involving the capability of a safety system or a component to perform its intended function. In fact, doing the right thing every step of the way has become the major theme for all of the work done at the Cook plant.

It was clearly demonstrated in our decision a year ago to stop the outage work and take the extra time to complete the expanded system's readiness reviews that both Mike and Bob will discuss. It was reinforced as we authorized the resources to begin the necessary repairs and

modifications to the plant and to revamp engineering programs, surveillance programs, and the Corrective Action Program and other areas in need of improvement that you will more about in just a few minutes.

Under the direction of Bob Powers, we have made significant changes to the D.C. Cook management team. We have a number of the members of the Cook team here today. Bob, Chris and Mike will discuss some of the cultural changes we have made to strengthen our management team and prepare for the restart of the Cook units.

Many of the Cook team men and women have assisted in the restart of other nuclear plants across the country. They further demonstrate AEP's commitment to provide the resources necessary to restart this important generation resource for our system.

When we met last with the Commission in November, 1998, I said it was clear to me that one factor that led to our present situation was an insular and complacent attitude that had developed over many years within the Nuclear Generation Department. We were not identifying our own problems. We were not aggressive in correcting the problems that we did identify. We did not question conditions that had existed for many years and our oversight of the Cook operations was not adequate.

AEP has made a commitment to provide the resources

necessary to correct these conditions to restart the Cook units and to return our Nuclear Generation Division to an industry leadership position.

As I mentioned in the beginning, this outage has been very expensive to AEP. We have lost the entire output of one of our largest generation plants for over two years. We have spent considerable additional resources rebuilding the ice condensers and making other necessary modifications and repairs to the plant.

With the progress we will report today, we can now see the end to this outage, basically on the schedule that we announced in the middle of last year. We are confident that the investment in D.C. Cook will result in a safer, more reliable and more efficient operating plant. We clearly understand that excellence in nuclear plant performance will return economic dividends to AEP by enabling Cook to achieve higher capacity factors, lower operating and maintenance costs, and shortened refuelling and maintenance outages.

We are also preparing Cook for license renewal. We think that extension of its useful life beyond the current limits of the NRC operating licenses will be valuable to us. In fact, it will be a key to our economic recovery.

We look forward to the D.C. Cook's plant's

resumption of its critical role in meeting the electricity supply needs in Michigan and Indiana. AEP's commitment to nuclear power also extends beyond the Cook plant to the acquisition of a 25 percent interest in the South Texas Project through our merger with the Central and Southwest Corporation. The approval process is moving forward on a definitive timeline and we expect to complete the merger in the spring.

Nuclear power will be a long-term and significant component of the AEP generation mix. In order to ensure the success of Cook and the nuclear generation business sector in both the near and long-term futures, AEP has taken steps to improve its oversight. I am personally continuing my active oversight of Cook through periodic meetings with Bob Powers and the independent safety review group. This group is made up of six well-respected nuclear consultants who report to Bob as Chief Nuclear Officer and to me as CEO.

In our reorganization following the merger with CSW, nuclear generation will continue to report directly to me. I will continue to devote a significant segment of my time to ensure nuclear safety and the effectiveness of our nuclear power operations.

Bob and I meet essentially monthly with the AEP Board of Directors or with our Nuclear Oversight Committee of that Board that was formed in April of 1999. The Nuclear

Oversight Committee is made up of five outside Directors of our corporation. Its purpose is to provide long-term, focused oversight of this important sector of the company. It has met four times -- once at the Cook plant -- to review Cook restart work and plans. The committee will continue to meet periodically to review the Cook status.

In sum, as you will hear from Bob and his team, we have made significant progress this past year, and have the end of this long outage in sight. We have assembled a talented and experienced management team which is instilling the right kind of safety consciousness and standards for excellence. AEP has given its full support and commitment of resources to Bob and the Cook team to do the job right, and they are doing just that.

If there are not questions, we will commence with the formal presentation. There is an agenda slide which I believe has come up. Bob will begin with an overview or perspective of what we found needed to be changed, the process we are using to make those changes, and a snapshot of where we currently stand, then Mike will discuss the extensive discovery effort completed by the Cook team, its results and some of our more important accomplishments.

Chris will cover the implementation phase of our restart plan, discussing the preparations being made to ensure a safe restart of the Cook units, and finally Bob

will provide some closing remarks, and we would be delighted to entertain questions either now or along the way, however you prefer.

CHAIRMAN MESERVE: Why don't we proceed, and we'll come back to questions at the end of the presentation.

DR. DRAPER: Bob?

MR. POWERS: Thank you, Linn.

When I came to Cook in August of 1998, restart efforts had been underway for about a year. I arrived with a background of what a well-run plant looked like, and based on my understanding of the situation at Cook I knew that a substantial challenge lay ahead for the employees and for me.

To help define that challenge and determine the best course of action in response, I had to access what the differences were between performance at Cook and the performance we would need to successfully restart and for long-term operations.

As a starting point for this comparison I compared what I saw at Cook with four essential cultural attributes found at successful nuclear plants. I believe the fundamentals of a healthy nuclear safety culture include the characteristic that people must be first and foremost focused on safety. There must be capable leadership within the organizations and at the senior management level. The

organizations must also be self-critical, and the Corrective Action Program must operate effectively. Finally, people must be adequately trained and prepared for their jobs.

As you might imagine, I used a number of sources to gather data for my assessment and how the culture at D.C. Cook compared with these fundamentals. I received numerous briefings from my direct reports and their staffs and I talked with many of our employees. I physically observed ongoing work, toured critical plant areas, and reviewed key documentation related to the work and problems that had been identified up to that point.

I also sponsored assessments by our Quality Assurance Department and chartered other independent assessments.

The principal findings of my assessments are listed on the right hand side of the slide. Basically I determined that the people at Cook had become insular in their focus and approach to managing the power plant. This led to gaps between how Cook did business and how many in the industry were doing business, particularly in the engineering disciplines.

While the organization at Cook had been dedicated over the years to ensuring that the plant ran well, I believe Cook's good operating history had a substantial influence on how people viewed problems when they arose.

For example, even when technical issues were identified by the NRC's Architect-Engineering Inspection Team, I believe many people at Cook didn't fully appreciate what these and other identified problems meant in terms of breakdowns and design control and compliance with the licensing basis.

I found that change management was not effective. This was probably best seen in the move of the Engineering organization in two stages from New York City to Columbus, Ohio, and then to our near-site offices. Large numbers of experienced engineers were lost because of the moves and the impact on the organization led to a lack of understanding and focus on certain areas such as design and licensing bases

I also confirmed that there were deficient processes and programs. This was particularly notable in the areas of design control, safety evaluations, corrective actions, and training.

In the area of corrective actions, problems were not being found or documented in some cases, but in addition, when they were identified there too often was little or no follow-up. This left a backlog of unresolved issues. Besides the problems with the ice condenser these technical issues reduced assurance that certain systems were capable of meeting their safety and accident mitigation functions.

My assessment also revealed that our training programs were in poor shape. This situation enabled the insular perspective found at the site, rather than serving as a platform to enhance human performance and help assure that industry standards were being met.

In retrospect, and having had the benefit now of our expanded discovery efforts, I can understand why we couldn't answer a number of fundamental design and licensing basis questions raised by the Architect-Engineering Team and other NRC inspectors. Simply stated, as an organization Cook had lost focus on maintaining the design basis and in providing strong configuration management, which are both vital to preserving safety margins.

Overall, it was clear to me that the fundamentals were missing.

Faced with the gaps I mentioned, and the missing fundamentals, I had re-establish a foundation for successful restart and beyond. This required setting the overall direction for the organization. It also required putting some stakes in the ground to help guide our people along the way.

I came to Cook with high standards, as did my management team. We all recognized that to achieve successful cultural change we must communicate our standards effectively and provide continual reinforcement.

This next slide summarizes my standards as key management expectations. It is through the implementation of these expectations that we are changing the culture at Cook.

These management expectations are placed throughout the plant and our engineering offices. When I rolled them out, I met with my managers and supervisors to discuss the expectations. I indicated that it was my goal for each manager to internalize the expectations, pass them on to the staffs, and begin to use them in the conduct of work.

I don't intend to go over each of these with you this morning. However, I would like to make a few points about them.

First, I would like you to note that the expectations are behavior-based. I believe that to sustain change people must learn repeatable behaviors that support the nuclear safety fundamentals I previously mentioned.

The second point I want to make is that the end results of these expectations are the same ones demonstrated by personnel at well-performing plants. For example, promptly identifying and correcting problems leads to a questioning attitude. Doing what we say we will do leads to ownership. Accepting accountability for yourself and your coworkers builds teamwork and an entire organization

grounded on the principle of accountability.

Each of these expectations focuses on people. Although the plant and our processes are very, very important, ultimately people make all the difference. When the units and the processes are completely fixed, the strength of our people will be the way we reach our ultimate goal of world class performance.

In the end, what we are doing at Cook is nothing fancy. We are concentrating on the fundamentals like clear management expectations, and I believe if we do the fundamentals right, we will be successful in restarting the plants and long-term safe and efficient operation.

At this point in our change efforts my management team and I are still providing strong top-down direction for the organization. However, we are seeing signs that our management expectations are taking hold. In fact, some of the performance improvements that Mike and Chris will discuss later are a direct result of this.

I fully expect that as our staff matures and becomes more self-sustaining they will be able to take on more responsibility for determining the successful direction of our efforts. This will allow my senior management staff and me to concentrate our attention on other long-term issues such as business process redesign and license renewal.

However, setting expectations and getting our people moving in the right direction was just part of what was needed to restart the plants. This next slide provides an overview of our restart plan.

This slide gives you an overview of the major steps in our restart process. The process involves four basic phases.

First, discovery of issues; then implementation of corrective actions; third, verification our corrective actions were effective, ultimately leading to restart by the units. This is the process we have been following since early of last year.

However, as I alluded to earlier, the initial discovery efforts at Cook were limited in focus. When I first arrived at Cook, the information I was receiving from my staff indicated that in their minds the recovery effort was nearing completion. As much as I hoped the Cook staff was correct, I pulled the string on this information and the more I pulled the more the message was mixed.

As I looked harder, it became clear that the initial discovery efforts had not been conducted using effective procedures, nor had effective training been given to the engineers performing the reviews. Consequently, the results were inconsistent and only a limited number of issues were identified.

Because of this limited focus, we didn't have a full understanding of the causes and thus we didn't really know where else to look. In addition, it seemed like every time the NRC looked at an area more issues were uncovered.

It was obvious that we needed to broaden our review. To start us down this path in September of 1998 I helped assure that we did a thorough and comprehensive job while conducting a safety system functional inspection of the auxiliary feedwater system at the Cook plants.

Now since this system had supposedly been scrubbed by our -- cleaned by our previous reviews, it would serve as a bellwether of the accuracy of our previous efforts. Later in the fall of 1998 I also initiated a Blue Ribbon expert panel review of our engineering programs. Both of these efforts turned up substantive issues requiring further evaluation and by late 1998 it was clear to me that something bold needed to be done if the facility was to restart.

It was in this same timeframe that I hired Mike Rencheck and subsequently directed a more thorough discovery effort take place. Under Mike's leadership, our initial discovery process was expanded to include a more comprehensive review of our plant systems and also the performance of our departments and of our key processes. Mike will give you more detail about the discovery process

in his presentation.

During the initial period of our expanded discovery early last year, it became clear that I would need to further rebuild the management team as well. Chris and Joe and Mike represent important elements of that rebuilding process. It also became clear that we would have to re-establish the Engineering organization, improve our oversight capability and work to restore our credibility with the NRC.

We believe we have made substantial progress in each of these areas. Chris and Mike will give you more detail about our implementation efforts later on.

So where does this leave us today? As the icon illustrates, we are currently putting all the pieces together that are necessary for the Cook organization to not only safety restart the units but support our longer term goal of excellence. We have not completed all the remediation work yet, but we do know what else needs to be done. We have a schedule to perform the remaining work and we are committed to safety and quality along the way as we have been throughout our restart efforts.

We have accomplished a great deal over the last year. For example, we have submitted the items in our confirmatory action letter to you for closure. We have submitted all of our license amendment requests for Unit 2

restart. We have undergone numerous NRC inspections, including several major inspections such as the recent Engineering Corrective Action Team Inspection, ECATI, and these inspections support our belief that the Engineering organization has improved and that our Corrective Action Program, our self-evaluation process, and our training at the Cook facility are effective.

From an organizational standpoint, we are turning our attention to human performance, and Chris will discuss that later.

In addition, I have personally devoted time to ensuring that there is a strong management team for restart and beyond. On this latter point, we have assembled a strong leadership team here at Cook, and I expect it to provide a guiding and stabilizing force for our future efforts.

The individuals seated behind me are a few of the people -- introduce yourself, guys.

MR. FINISSI: Mike Finissi, Director of Plant Engineering.

MR. GODLEE: Robert Godlee, Director of Regulatory Affairs.

MR. KROPP: Wayne Kropp, Director of Performance Assurance.

MR. GREENLEE: Scott Greenlee, Design Engineering

Director.

MR. BARTON: Sam Barton, Site Senior License.

MR. NAUGHTON: Don Naughton, Senior Systems Engineer.

MR. SCHALK: Bill Schalk, Communications.

MR. KUNSEMILLER: Dave Kunsemiller, Technical Assistance.

MR. POWERS: Thanks, guys.

These and other individuals represent the management and technical depth of our current team. Although we may experience some turnovers in moves toward normal staffing levels, we intend to keep high-performing people by providing them with a challenging and rewarding environment.

Now with regards to the physical work of fixing the plant we also have accomplished a great deal but by far the singlemost man-hour intensive effort we have underway is the repair and reload of our ice condensers. I would like to give you a brief description of this work and provide an update of where we are today with their refurbishment.

Next slide, please.

MR. POWERS: Approximately 3,800 bags of ice, like the one shown here, were filled using the Cook Plant ice-making machine in 1998. Each bag contains approximately 1,200 pounds of ice and it has been stored in an off-site

cold storage facility since that time. We have periodically sampled the ice while it has been in storage to ensure its quality.

As the first step in reloading, the ice is transported by refrigerated tractor-trailers to the station. After removal, it is brought to an ice crusher, which is shown in the next slide. Each bag is brought in and a crusher forklift is used to perform an initial breakup of the ice. The workers on the platform that you see in the slide then begin the process of breaking the ice into smaller chunks to feed into a pulverizer-crusher.

The ice then travels by auger and by blowers to the ice condensers, during which time it is conditioned with refrigerated air. This conditioning minimizes moisture intrusion into the ice condenser, limiting frost accumulation and sublimation of the ice.

The next slide shows the actual loading of the ice into the ice condenser baskets.

The ice piping from the blowers is connected to a cyclone separator in the ice condenser. The cyclone separates the forced refrigerated air from the ice itself and then the ice then falls into the baskets. The green air flow passage bags that you see in the slide are installed prior to the ice being loaded in order to limit the amount of ice which falls out of the baskets.

Reviewing some of the numbers. There are 1,944 ice baskets in the condenser, and each basket is approximately 12 inches in diameter and 48 feet long. Technical specifications require a total ice weight of 2,590,000 pounds and we expect to loan about 3 million pounds in the Unit 2 ice condenser. At the present time we have loaded half of the Unit 2 ice condenser and are just initiating the process of weighing the first baskets.

Reloading ice is a major milestone for the people at D.C. Cook. I hope the short overview I just provided with you of the ice load helps you appreciate that we have not only accomplished a great deal in discovering and resolving issues, but we have made significant progress in restoring the physical plant since I last spoke to the Commission in November of 1998. True to our key management expectations, we are doing what we said we would do.

Let me quickly summarize the key points of my opening remarks. The picture that best describes where we are today is that we know what our problems are. We have identified the necessary corrective actions and we are nearing completion of our restart efforts. Frankly, where we are now feels more and more like a refueling outage. What faces us in the near term is simply to complete the remaining work with quality and with safety.

For the longer term, we intend to continue to

focus on the fundamentals. As we improve there, our leadership team will turn more attention to the challenges of deregulation, license renewal and more efficient operating cycles.

With this overview, let me turn the presentation over to Mike Rencheck.

MR. RENCHECK: Thank you, Bob. As Bob indicated, you can categorize areas, our areas of focus into plant, processes and people. Today I am going to concentrate on how we set about identifying our issues and some of the results that we have achieved.

One of the first things that I did when I came to Cook was to establish a solid processing -- process for discovering our problems, and I did that by utilizing processes that I had found effective in the past.

The next slide shows the key elements of this process. Discovery was the first of four phases in our restart process. Discovery was designed to identify problems that could adversely affect the safe and reliable operation of the Cook units. It contained the following attributes to ensure that problems were thoroughly evaluated consistent with their safety importance.

As the first bullet on the slide indicates, discovery was an industry-proven process used in the recovery and restart of other nuclear plants. It is

described in our restart plan and has been implemented through formal procedures.

Second, discovery utilized personnel with the broad-based experience in the recovery and restart of nuclear units, combined with Cook experienced personnel. We also used industry peer reviews and visited other nuclear utilities to ensure that lessons learned were incorporated into our process.

Third, discovery applied comprehensive and intrusive methods, and we did this through three principal efforts. One of these was our expanded system readiness reviews. These reviews provided a detailed and disciplined assessment of essentially all safety and risk-significant systems. Non-risk-significant systems were also reviewed but to a lesser degree. We also conducted programmatic assessments that were designed to evaluate whether processes critical to restart were in place and functioning properly. 125 per REM baseline assessments were performed. This resulted in 94 detailed self-assessments of the programs being conducted.

The last effort involved our functional area assessments, which included 18 departmental reviews. These reviews were conducted to determine whether department practices, as well as personnel and management capabilities were adequate to support start-up and safe plant operation.

The fourth bullet on the slide focuses on our corrective action program. Early in our discovery process, we completely revamped our corrective action program to make it consistent with other well-designed industry processes. We utilized our new program to document, understand the extent of condition, and then to promptly fix the identified problems that came out of discovery.

Finally, we subjected our discovery effort, scope, approach, results and proposed corrective actions to a demanding oversight by our various oversight groups such as our System Readiness Review Board and our Plant Operations Review Committee. These efforts were also audited and assessed in detail by our performance assurance department.

We believe that our discovery process utilized industry best practices, techniques, and experienced people to assure rigorous and comprehensive evaluation of the problems at D.C. Cook.

Let me now discuss what we found. As the left side of this slide indicates, our discovery efforts identified issues in three areas -- people issues, process issues and plant issues. In the area of people issues, the problems generally included an organization that had become insular in its approach to change. This resulted in the inability to raise standards and keep pace with industry changes, to consistently identify conditions adverse to

quality, determine root causes and implement corrective actions in a timely manner, to adequately train and qualify personnel in important areas such as our design and licensing basis, and, finally, to effectively establish, communicate and implement standards and management expectations.

Regarding process issues, a number of our processes had become deficient and ineffective, resulting in problems such as inconsistent design control, inadequate safety evaluations, inadequate operability determinations, deficient post-maintenance and post-modification testing, and insufficient work management programs and associated processes.

Many of the plant or technical issues arose from the process issues I just mentioned. This generally resulted in eroded safety margins, missing documentation and inoperable plant equipment. Some specific examples include missing or deficient design documentation, deficiencies in the areas of material condition, for example, our ice condensers, deficiencies in the design of some systems or components, examples are motor-operated valves.

Throughout the discovery effort, issues were documented in our corrective action program. The issues were categorized as restart or post-restart required using an industry-proven screen criteria. Management then

analyzed the restart issues and developed a list of approximately 40 items that required additional management attention due to their potential safety significance. To date, we have been resolving these issues and have found that several have had some safety significance, namely, our ice condensers, our high energy line break program, and our motor-operated valves. Although we have determined how to solve these issues, we are continuing in our efforts to do so.

In summary, these issues generally represent the fundamental reasons for our shutdown. Our processes and people skills, fundamental to sound engineering practices, were ineffective. Alignment among our license, our design basis documentation and the plant's hardware in some instances was at best unknown, and, at worst, varied substantially.

Clearly, we faced a significant challenge at Cook. However, let me give you some perspective on this challenge. Cook represents the third recovery effort that I have been associated with. In general, the problems at Cook are not unique. With the possible exception of the ice condenser and the extent of our documentation deficiencies, the problems at Cook have been seen throughout the industry in one form or another.

We have been utilizing industry-proven corrective

actions to address many of our identified problems. I have personal experience with many of these such as our expanded system readiness review, resolution of our high energy line break issues and other industry operating experience, and, therefore, I have confidence in their effectiveness.

The right side of the slide identifies the corrective action focus areas we used to reestablish and strengthen our engineering capabilities. In the engineering department, we specifically focused on the capabilities of our people, that is, their skills and knowledge, and the processes we use to do our work.

First, we had to assure that our management and oversight were sound. To accomplish this, we hired several new management individuals that understood the need for setting high expectations and following through with coaching and direction of both our AEP employees and the contractors that we were utilizing.

We understand that the level of engineering performance is directly proportional to the knowledge and skills possessed by our personnel, as well as the quality of the supporting training program. In this regard, we conducted an assessment of personnel competence. Two areas were considered, engineering judgment and problem-solving knowledge. The assessment indicated that engineering judgment was adequate, but problem-solving skills needed

enhancement.

Our assessment also found that many engineers lacked the full understanding of configuration control, design and licensing basis, safety evaluations and operability. Consequently, we initiated a comprehensive remedial training program. In some cases all engineering personnel, including contractors received the training. In other cases, we targeted training to a specific engineering group.

I will give you an example. The population of AEP and contractor personnel received training in management expectations, responsibilities, safety focus, conservative decision-making, design and licensing basis, operability determination, 10 CFR 50.59 safety evaluation fundamentals, configuration management, design control, calculations and the development of solutions. And some of the specific targeted training was applied to AEP engineering personnel in areas such as effective problem-solving and human error reduction techniques.

An 80 percent passing score was required on tests, and when personnel did not achieve this grade, remediation training was performed. Academic review boards were also conducted for those personnel not meeting standards.

We have since performed several follow-up assessments to evaluate the effectiveness of our efforts.

Based on the quality of work products and root cause analyses, engineering personnel are showing an overall improvement such as an increased understanding of the design and licensing basis, and they are demonstrating a greater questioning attitude toward their work.

For the longer term, to ensure that improvements seen to date are maintained and increased, we have revamped our engineering support personnel training program. The program includes establishing position-specific guides for engineering personnel to achieve and then maintain their qualifications.

In summary, we are challenging our people to meet higher standards. We believe this focus will help us reach our goal of excellence in the future.

Now, in addition to the skills and knowledge training, we have also been improving our practices and procedures used by our people. As part of the programmatic assessment effort that I mentioned earlier, engineering processes and programs were thoroughly evaluated.

For example, we performed detailed reviews involving safety evaluations, design control, engineering calculations, the design change process and configuration management. And not only the programs, we also took a look at the documentation associated with these programs such as our updated Final Safety Analysis Report, our calculations

and our safety evaluations.

Issues identified for corrective action during these reviews were documented as condition reports in our corrective action program for disposition. Some of the corrective actions we took in response to these reviews included incorporating best industry practices into our programs, establishing the design engineering organization as the design authority, developing a station-wide configuration management policy and associated procedures, and completing a comprehensive revision of our design control processes, and, last, establishing oversight of our engineering products through our engineering effectiveness department and formal review committees such as our Design Review Board.

In summary, we have improved our skills, practices and procedures, and I am seeing the results from our efforts. The documentation for our design and licensing basis is being rebaselined were appropriate. Approximately 190 modifications are being installed at D.C. Cook to improve the safety and reliability of our plant.

Our performance indicators such as root cause quality, safety evaluation quality and calculation quality also show me that we are on an improving trend and meeting management expectations for restart.

These next two slides illustrate our performance

in these two areas. This slide shows the percentage of acceptance by the Plant Operations Review Committee for 50.59 safety screenings and evaluations going back to February of last year. This team set high standards and, as you can see, back in February of last year, 50.59 screens were being rejected and sent back for further analysis. This ultimately resulted in higher quality evaluations that are consistently meeting our expectations today.

Another key indicator that directly relates to our corrective action program and the ability of the organization to find problems and develop effective corrective actions is the quality of our root causes. This next slide shows our most recent performance. The quality of our root cause evaluations is measured by the corrective actions department and is scored using a variety of factors such as safety significance, did we achieve the root cause, and extent of condition. These factors are weighted into a composite score that is applied against a management standard or a goal. Although we expect the quality to continue to increase in the future, root cause evaluations are meeting management's higher expectations and are on a generally improving trend.

The improvements in these and other fundamental areas, along with the new processes, and the development of design changes, the control of documentation, and

configuration management, among others, have resulted in rebaselining our design and license basis documentation and plant modifications, where appropriate. This provides us with reasonable assurance and gives us a sound foundation for safe and reliable plant operation.

These improvements also indicate the beginning of a longer term cultural change in the engineering department. With our continued leadership and oversight with the safety first focus, we will not repeat past mistakes.

I am encouraged with our progress, however, our work in the engineering department is not complete. We still have challenges ahead and I would like to highlight these for you in the next slide.

Although the current quality of our engineering products, such as design change packages and safety evaluations are at an acceptable level for restart, we must continue to improve. Our improvements must reduce our reliance on multiple review processes and increase our engineers' knowledge and skills. Our goal is for the engineers to produce products that continually meet our higher standards. This will be achieved in part by enhancing our organizational capabilities, and we will do this through our training programs, and through the use of personnel performance techniques such as human error reduction and performance assessments.

Another focus area is on contractor reliance. During this restart period, we have relied heavily on outside help. These contracts have been under the management and direction of AEP employees doing this effort and we appreciate their contributions. Quite frankly, we could not have tackled this restart effort without them. Having said that, however, we must now continue reducing our reliance on them to ensure that we have the internal knowledge and capabilities for the longer term journey to excellence.

Finally, we recognize that to be successful, the D.C. Cook Station must be an operations-led organization. Engineering, of course, plays a critical part in supporting the safe and reliable operation of the units. We have substantially improved, but we must continue to improve the quality and timeliness of our products delivered to operations.

These are the challenges ahead for the engineering department. I would now like to turn the presentation over to Chris Bakken.

MR. BAKKEN: Thank you, Mike. To pick up on Bob's earlier discussion of desired behaviors, we believe that being self-critical and developing sound corrective actions requires that we focus on effective oversight. At Cook, we believe that oversight is fundamental to the success of our

restart work, as well as to our long-term goals.

Oversight is a broad concept and involves activities such as monitoring, assessing, coaching and providing feedback. It is demonstrated by individual behavior, as well as through structured processes and programs.

On an individual basis, Joe, Mike and I all incorporate oversight into our everyday activities. For example, during daily team meetings, we carefully evaluate the information provided by our staffs. We provide feedback and we encourage people to take a broader view of problems, and to voice their opinions. We believe that this approach promotes openness and better teamwork, and it also results in more comprehensive solutions.

This example shows you how we provide oversight on a personal level. But oversight is also built into our restart plan as a structured process. As the next slide shows, our restart effort was designed to provide several layers of oversight. This slide was first shown to the NRC staff during an 0350 meeting last fall. This slide breaks our restart process down into three basis parts, discovery, implementation, and verification, which then lead to restart of the units through the final phase, start-up and power ascension, which is not shown on this slide.

The boxes are color-coded with blue representing

work activities, yellow representing assessment and oversight activities, and green representing approval or concurrence of successfully completed activities. The slide highlights the yellow boxes. As you can see, oversight, in one form or another, occurs in each major step of our restart process.

We did not move from discovery without an evaluation of the effectiveness of our efforts to identify problems. A third party panel of experts, the System Readiness Review Board, or SRRB, principally performed this evaluation. As we move towards the completion of our implementation efforts, you can see that, once again, we are using oversight as an important element of our process. Again, SRRB, along with our Plant Operations Review Committee, is providing oversight.

In our final phase of the restart, we again will be utilizing several oversight reviews. This consists mainly of department self-assessments and final affirmation reviews by senior management and the Plant Operations Review Committee.

Throughout the entire restart process, oversight is also provided by quality assurance. As your staff has noted during several inspections, quality assurance has provided intrusive and insightful review of our restart activities. Line management now sees the benefit of these

insights and is actively seeking quality assurance's feedback.

We believe the structured use of oversight, along with our personal efforts to oversee activities at the site, has ensured that we are doing a quality job. It is a major reason why we have confidence in the effectiveness of our efforts to date.

Two other major reasons why we have this confidence is that our discovery effort was thorough and comprehensive, and we are being successful in our transition from an engineering-led organization to an operations-led organization. This next slide illustrates this transition.

As mentioned earlier, our restart plan began with the discovery phase. This intensive and time-consuming effort was headed up by engineering for several reasons. First, many of the problems at Cook were centered on design and license basis issues, as well as technical issues. Second, Mike Rencheck had extensive personal experience in leading such an effort.

The left side of this slide identifies the key activities performed under Mike's direction. In addition to discovering our problems, Mike and his organization were responsible for developing the solutions to our problems, as well as reestablishing the safety margins and the design bases of our plant and processes.

Through these efforts, we also began the process of changing the culture of all of our people. Together, these activities have helped ready us for the transition to power operations. In particular, they have given us confidence that when our plant modifications are complete, the operators will have safe and reliable plant equipment, as well as effective procedures. These activities have also provided momentum for our longer term journey to excellence.

As we move through this transition period, I can tell you as an operator myself, that the operations organization is anxious to resume control of the plant. Since my arrival in the spring of 1999, I have been hard at work with my organization to reshape the culture among our staff.

As the right side of the slide indicates, I believe there are four fundamentals that define an operations-led organization. First and foremost, the operations organization is responsible for operating the plant in a safe and reliable manner. In order to do this, the operators must be trained, maintain their qualifications and be knowledgeable of their license responsibilities.

Second, an operations-led organization must be a competent and demanding customer. The proper maintenance of the plant and the processes are critical to an operator's job. This means that operators must work well with

engineering, maintenance and other support organizations to assure that plant and processes are well maintained. However, the operators must also hold those responsible for maintenance accountable, both in terms of their product and their services. Without quality services and products, the operators are more likely to be unnecessarily challenged in the form of equipment failures or malfunctions.

Third, an operations-led organization must be constantly assessing itself and those supporting it. Unless an organization is self-critical, it cannot be assured of growth or continuous improvement.

Finally, as the leader of plant operations, the operations department must be among the first to demonstrate the behaviors embodied in the management expectations that Bob discussed earlier.

We are well into our transition to an operations-led organization. This has involved instilling higher standards, reshaping the leadership within my various organizations and improving our work processes. To help us complete our transition, we in operations have been concentrating on improving our skills and capabilities. We also have been focusing on enhancing the processes we rely upon to do our jobs.

MR. BAKKEN: We have accomplished a great deal over the past year. However, since our time is limited, I

will only highlight some of the activities that are preparing us to return the power operation.

First, let me talk about operator training. We believe that a strong training program is key to our long-term success.

In October of 1998, our training programs for operations were placed on probation by NPO. We gave this training program top priority, and in April of 1999, we achieved accreditation renewal of the operations training programs.

Subsequent NRC inspections have also noted our training improvements. Concerning operational skills, one area we've been focusing on is human error reduction.

We have established human performance goals, and we trimmed the performance of each crew. We utilized this information in our training program and during periodic crew briefings.

We have provided our operators with a variety of training opportunities on this subject. For example, operators have attended a human errors reduction training course, they have attended the NPO Team-building Workshop. They have participated in our shift manager mentoring program, and they have participated in our Hop Hallet Crew Training.

For those of you not familiar with Mr. Hallet,

he's the author of the Industrial Operators Handbook, and is a recognized authority on individual and crew human performance.

Because human error reduction is such an important element of our long-term success, we recently hired a site human performance manager. Although her efforts are directed to all of our organizations, I have specifically asked her to focus her near-term efforts on error reduction within operations and maintenance departments.

We have also focused on the ability of our staff to perform effect root-cause analysis. Training courses have been provided, and this has increased the number of operations staff members who are now qualified root-cause investigators.

In-field operations by operations management have been increased. The expectation is to provide oversight of the actual work at the job site, providing support and/or coaching where necessary.

Peer checking has been incorporated into the day-to-day conduct of the operations staff, and more time is being devoted to interfaces between managers and their crews, as well as between the Operations and the Quality Assurance Departments.

An operations-led organization cannot stand on its own. It is supported by Engineering, which Mike has spoken

of earlier, as well as other organizations such as Maintenance.

I want to briefly mention what we have accomplished in our Maintenance Department: We continue to focus on augmenting our staffing ranks. Over the past several months, we have nearly doubled the permanent AEP staffing levels in supervision and craft available for plant maintenance.

At the same time, we continue to reduce our reliance on contractors. While we need contractor support to help us complete the work on Unit II, and for the restart of Unit I, it is my intent to carefully eliminate the majority of our contractors by the end of this year.

Another area of continuing focus in maintenance is training. The plans we are currently developing will achieve sufficient skills and qualifications in mechanical, electrical, and instrumentation and controls, to support the contractor reductions at the conclusion of the Unit I restart.

I'd like to also mention that the health of our maintenance training programs and instructional staff were reviewed in November of last year by an NPO accreditation team. I believe these programs will receive accreditation renewal in March of this year.

The last area I will talk about concerns a few of

the processes that we have upgraded that are key to safe operations. One of these involves operability determinations under Generic Letter 91-18.

We revised the governing procedure to provide better guidance to personnel when performing these determinations. We provided training on those procedural changes.

We established the Operations Department as the clear owner of the program. We also implemented, on a temporary basis, a shift operating review team, and on a long-term basis, a cross functional event screening committee, both of which are designed to reduce the burden on the control of operators for reviewing Condition Reports and performing prompt operability determinations.

These were some of the measures we put in place to handle the large volume of issues encountered during our discovery efforts.

In addition, as part of our new electronic corrective action reporting system, we enhanced the data available to the operators. The data screens now include information on operability, reportability, and mode constraint requirements.

The other process I would like to briefly discuss is our emergency operating procedures or EOPs. Early in our restart effort, we recognized that our EOPs needed to be

substantially revised.

We have largely completed this effort, bringing them up to current industry standards. At this time, the procedures themselves have been fully revised. Review and approval by our Plant Operating Review Committee is complete.

Now, operators are currently being trained on the new procedures in the simulator. As you can see on this slide, on this important area, we've made steady progress, and, in general, adhered to our schedule, and completed this effort last Friday, not in time to update the slides.

I have only highlighted some of the many initiatives that we have implemented to help us transition to an operations-led organization.

We have made tremendous progress, and overall, I believe we are demonstrating an improving trend. Of course, as in any restart situation, the startup and testing phase is where everything comes together, and where the quality of our efforts can be measured.

If you will turn to the next slide, I would like to discuss our restart and power ascension testing program.

As we complete the implementation phase of our restart efforts, the Operations Department is resuming control of the plant systems through the system turnover process.

To date, 17 of 86 systems have been turned over to Operations. This means that the systems have been tested, as allowed by current plant conditions, and Operations has found that they meet their standards for safety and reliability. This turnover process is an initial step in the startup and power ascension program.

I would like to point out that from the beginning of this discussion, that the modifications that are being performed on the Cook Units are limited in scope and, in general, are not significantly changing any of the operational capabilities of the plant.

This is unlike other restart efforts. As an example of what I'm referring to, during the Salem restart, we installed a digital feedwater control system, and rebuilt the entire process control system to improve the plant's capabilities.

This required extensive testing such as several load rejection tests to confirm its effectiveness. In general, the modifications at Cook involve equipment compliance upgrades, such as the motor-operated valve and high-energy line break work.

We are not installing modifications that will cause the plant to respond significantly differently from when it was shut down, and, therefore, the testing programs are much more modest in scope.

With the turnover of systems complete, and concurrence of AEP management and the NRC, we will take the reactor critical and ultimately proceed to 100-percent power. This chain of events will be under the control of the Operations Department, utilizing what we call a Startup and Power Ascension Program.

Before I describe the program itself, I would like to discuss its basis priorities. mplementing these priorities is essential to achieving an event-free restart of the plant.

Safety is our top priority during this critical phase of restarting the units. We are committed to proceeding only in a controlled and deliberate manner. By control, I mean that the startup is conducted by a strong, operations-led organization with full responsibility to direct actions and events safely at all times.

By deliberate, I mean that we will have a high degree of certainty, that is, the outcome of next actions are well known, are safe, and are in accordance with our overall plans.

If we have a problem, we will stop, assess, and implement appropriate corrective actions before proceeding.

As to the program itself, we have a plan document that is the Startup and Power Ascension Testing Program Procedure. This procedure describes the key steps in our

program, and has been reviewed by the System Readiness Review Board.

The program is divided into four phases: Component testing, system testing, integral functional testing, and power ascension testing. This building-block approach assures that the plant equipment, both independently and as an integrated system, can be relied upon to perform its intended function.

The program itself is nearly identical to the one used during the Salem restart. System test plans have been developed in accordance with the scope of the work performed during this outage.

The plans are owned by the system manager, and are thoroughly reviewed by a system engineering supervisor, an operations senior reactor operator, and a test review board. Plans are updated as necessary on a continuing basis.

As we execute our plan and perform the various tests, there will be oversight on-shift to assure that proper expertise and management attention is available to address both routine and emergent situations.

The around-the-clock oversight includes a shift plant manager, a shift engineering manager, and a shift test engineer.

As startup proceeds, the test results will be reviewed by the Test Review Board to ensure that the test

achieved its intended function, and that the results meet the defined acceptance criteria.

We anticipate that we will face some emerging issues as we proceed with the startup and testing. But as I have previously stated, we have skilled individuals and processes to resolve problems as they emerge.

Once again, the Cook organization is committed to restarting the plant in a safe, controlled, and deliberate manner. It is only by doing so that we can have an adequate level of assurance that the restart will meet our goal of being even-free.

There are two final topics I would like to cover briefly: First, if you will turn to the next slide, I want to go over where we are from a schedule standpoint.

This slides shows the total person-hours that we have expended, and, more importantly, the black line shows the person-hours remaining to be completed.

As you can see, the lines have crossed, which means that we are well past the halfway point of the outage work. Additionally, little emergent work is being added, which means that if we do what is scheduled and do it on time, we should be close to our scheduled completion date of April 1st for Unit II.

I want to again point out that challenges occasionally do arise, and we will take the time to do the

job right. If called for, we will not hesitate to stop work, reassess, and assure safety and quality are met before resuming our work.

The final topic I would like to discuss concerns the focus areas that I see ahead for my organization, which I have listed on the next slide.

The first focus area is to ensure that the restart and operation of Unit II is not affected by the continuing outage efforts on Unit I. To accomplish this, we are dedicating portions of our staff to these separate activities.

Specifically, the Unit II staff will focus on the critical functions of reactor restart, testing, and power ascension activities.

The Unit I staff will focus on the ongoing steam generator replacement and completion of the Unit I outage.

The shift plant manager and operations shift manager have overall responsibility for both plants, and they have both the resources and guidance from senior management to assure both the event-free restart and operation of Unit II and the adequate control of work at Unit I.

I can assure you that I fully understand the demands that will be placed on these crews. The situation is very similar to when I was at Salem, including the steam

generator replacement.

We were successful at Salem, and are employing the same techniques here to ensure success at Cook.

In the area of human performance, I spoke about this previously, and as I indicated, our long-term success will greatly depend on the efforts in this area. It is my intention to initiate a sitewide human performance strategy consistent with the best-performing plants in the industry to continue our improvements in this area.

In addition, we continue to be committed to an open environment for personnel to raise concerns. As with other restart situations, we have and will continue to face some issues in this area.

To date, however, I believe that we have been successful in addressing these matters. We significantly upgraded our Employee Concerns Program last year, and we have conducted training for supervisors and employees on how to maintain an effective, safety-conscious work environment.

These efforts, combined with our upgraded corrective action program, provide a multifaceted approach to assure a healthy work environment at Cook.

The third focus area is control of work. During an outage such as this one, our goal is to control work in a systematic and deliberate manner. This is critical to our safety-first fundamental, and is the ultimate responsibility

of the Operations Department.

Operators and management are taking control of the day-to-day activities, and ensuring that they do not let situations control them, minimizing challenges to the control room. This is consistent with our top priority of safety first.

The fourth focus area is our backlogs. These are being monitored and evaluated to assure minimal impact on plant operations. This effort is from both an individual, as well as an aggregate effect point of view.

Only those items that management believes can be safely deferred to online maintenance or the next outage will be moved past restart.

Obviously there is still work ahead of us, and as we proceed, there will be emerging issues that the organization must address. However, we are ready for them.

As the site Vice President, I'm committed to stopping and assessing when necessary, and proceeding only when we have the confidence that we can do so safely.

We will use our new skills effectively, exhibit a questioning attitude, and demand quality from ourselves and others to assure safe and reliable operations.

This concludes my part of the presentation. Bob?

MR. POWERS: Thanks, Chris. I'll take just a few minutes to wrap up what we presented today, and give you a

brief sense of where I see us heading for the future.

Could I have the next slide, please? This slide captures the key points that we'd like to leave you with today.

During the restart process, we have learned some key lessons: First, we understand the aspects of our past performance that contributed to the shutdown of the Units.

The discovery process and the associated results have caused all of us at Cook to reflect on where we were two years ago, and we've made a commitment not to repeat the past.

We've learned how to find and how to fix our problems. We now have the disciplined processes and the questioning attitude to assure that root causes are effectively identified, and that corrective actions are effectively implemented.

We've learned that it takes a sound plan to achieve our goals. Our restart plan has provided the necessary guidance and flexibility to both address our initial problems and to make the necessary adjustments as emerging issues reveal themselves.

As most of you recall, I spoke to the Commission in November of 1998. I described my vision for world class performance and how we would go about achieving it.

We developed a comprehensive restart plan, and we

are doing what we said we would do; we are nearing completion. We believe the restart of Unit II is in sight, and should occur in the Spring of this year.

Unit I should follow in the Fall, with its steam generators replaced as well.

We have learned that even with good planning, we'll have challenges ahead. Not everything is going to go smoothly, but we have developed the skills to effectively address emergent problems.

Thee is more work to be done with our people and processes to reach our goals. However, we do know how to evaluate these challenges and plan for their resolution.

Most of all, we've learned not to rush the work of restart. We have and will stop work when necessary to reinforce our higher expectations and achieve the results of doing the job right the first time.

Our efforts in terms of time and resources, especially over the past 12 months, have been both difficult and enlightening, but there are definite rewards.

They are manifested in a more robust plant that will respond properly when called upon by our operators. They also show up in changes to our culture and processes which are grounded in our higher management expectations.

Through our restart efforts, we've built a foundation based on four fundamentals: A safety-first

culture, capable leadership, self-critical organizations supported by an effective corrective action program, and trained, well-prepared people.

These foundational elements are allowing us to build the infrastructure that will support world class performance. They are also helping us as an organization to modify behaviors and make a fundamental change in our culture.

Those changes include improvement in our questioning attitude, accountability, teamwork, and ownership.

As I mentioned, we are seeing signs of changes in these areas, but we still have a ways to go. With continued attention to our management expectations, we will achieve our goal of safe, reliable, and event-free operation and ultimately world class performance.

On behalf of all of us at Cook, I want to thank you for the opportunity to address the Commission today, and this concludes our formal presentation.

CHAIRMAN MESERVE: Good. Thank you very much. I'd like to express my appreciation to all of you for what was really a remarkably candid appraisal of the situation that you have confronted. It's clear that you made very aggressive efforts to deal with the situation.

Could you say something about the work that

remains to be completed? You indicated that the ice condenser was about half filled, and so what other things of major significance are before you, before you're ready to commence the restart?

MR. POWERS: There are about 200,000 hours of physical work remaining in the outage. Half the ice condenser remains to be filled.

That work involves refurbishment of approximately 80 or 90 of our motor-operated valves. It includes the physical work to implement the 190 some odd design changes, although some are complete and underway.

There are some of the design changes that remain to be resolved. And it involves the work associated with our system turnover windows, where we've gone through and taken a comprehensive scrub of the corrective action documents that have been identified on each system, and any physical work that needs to be done in terms of maintenance, repair, it includes that as well.

There is attendant work that is not showing up in that 200,00 man-hours, and that would be some paperwork issues, analytical work, closure work that's associated principally in the engineering and supporting organization.

I think that gives you a pretty good assessment on what remains to be done.

COMMISSIONER MERRIFIELD: Mr. Chairman, I have

just a clarifying question, if I can?

What's the split between Unit II and Unit I in that 200,000 hours?

MR. BAKKEN: That doesn't account for Unit I.

COMMISSIONER MERRIFIELD: That's only for Unit II?

MR. BAKKEN: Yes, we're treating Unit I as a separate entity, and really the only substantive work that's going on now in Unit I is steam generator placement, because we don't want to distract the organization on Unit II.

That project will go through the end of March, and that point then we'll make an assessment, depending on the condition of Unit II, on what work we then pick up and do on Unit I. And we'll look at that very carefully to make sure they don't adversely impact each other. Clearly, Unit II will take precedence.

MR. POWERS: The 200 man-hours of work represents about eight weeks worth of work at the rate we are working it down. I think this outage is going to be time-dependent, both on our continued ability to work that 200,000 man-hours down, but it's also become like a refueling outage, a process of appropriately managing the critical path activities where certain key lead items, whether it be associated with the design or the procurement of parts, really will determine the ultimate length of the outage.

COMMISSIONER DICUS: Okay, I have a couple of

quick questions, if I could. One of them is on what you just said, the critical path issues.

To what extent is the NRC -- I mean, where are we in the critical path? Is there something that you need from us?

MR. POWERS: No, Commissioner. The support from the staff has included critical questioning; it's included a thorough review. But the from the standpoint of support of the project, that questioning and review has been timely. It's been scheduled to support our restart activities.

The licensing support, again, has involved critical questioning, tough standards, high standards, but the license products for the Cook Unit II restart are coming at a pace that will support the schedule, and I don't -- in any of my internal documents, I don't see the words, NRC in terms of critical path between us and getting the Units restarted.

COMMISSIONER DICUS: And then my second question is going to go to the issue of the new reactor oversight program that we're going to implement later on this year.

The first part of this question is probably somewhat philosophical, and you can get into it if you like, or if you want to defer, that's okay, too.

But if we had had the new oversight process in place a year or two or three or four ago, would it have

given you a greater signal early on that you had problems at D.C. Cook, and that those problems needed to be addressed? Would it have given you a heads-up on that? That's the philosophical part of that question.

But the second part of it, in light of the fact that we are going to a new oversight process program, in the activities that you have ongoing, which you have so carefully and thoroughly reviewed for us, have you incorporated this new oversight process in your thinking, in your going forward, as you said on some of your slides, to look at and to operate the plant under a new oversight process, such as it is.

And I guess the third part of the question is, are you ready to go under a new oversight process?

MR. POWERS: Okay, there are three parts to the question.

COMMISSIONER DICUS: Yes. It's a three-part question.

MR. POWERS: Let me philosophize first. Going forward, I think the NRC has developed a good oversight process for the nuclear industry. I do believe, if I can answer the question by way of looking forward first, then I'll go back in time, we will have a sound corrective action program.

In the conduct of that corrective action program,

we will identify issues, and they will be scrubbed for their safety significance. This will be a key element and a key input into the oversight process, and you will have a dataset that indicates what types of issues are being identified at the Cook plant.

In addition, you have engineered as part of your oversight process, some cross-cutting inspection activities that will take a look at the corrective action program for its health, and continue to take a look at the engineering organization in terms of doing some cross -- some vertical reviews to take a look at the health of the engineering organization.

With all of those elements in place, I think the new assessment program will find problems like we've talked about, earlier.

Now, looking back in retrospect, the Cook plant did not have a healthy corrective action program, nor was it doing a particularly in-depth review and look at its engineering activities.

So I'm not sure the feeding, the initial process of getting issues out on the table would have fed the oversight process. So, from my own personal philosophical standpoint, looking at it now as a senior member of industry management, a healthy corrective action process is very, very critical to ensuring that the oversight process will

work.

And second question, related to whether our thoughts about the new oversight process and staring up, with Unit II having been shut down now for getting close to two and a half years, a lot of critical data that goes into the performance metrics is either old or not available.

Several of the performance indicators require 7,000 critical hours of the reactor to effectively establish the denominator on some of the indicators.

As a result, we have talked with your staff and suggested that a transition program from the old oversight effort would be most appropriate for the startup of Cook.

So we have a meeting scheduled in February to talk to the staff about what that transitional plan would look like. It certainly would include the continued utilization of the restart metrics that we have established, and they are numerous ones, and they cover a broad gambit of safety-related issues at the plant.

The 03.50 panel, in some form or fashion, will probably stay in place to oversee this transition, and we would move aggressively to move and transition to the new oversight program within about a year of restarting the first unit.

COMMISSIONER DICUS: All right, thank you.

MR. POWERS: Did I answer the third part?

COMMISSIONER DICUS: You just answered the third one, yes. You just go into the third one. You're not quite ready to do it yet, the transition?

MR. POWERS: Yes, that's our perspective.

COMMISSIONER DICUS: Right.

CHAIRMAN MESERVE: Commissioner Diaz?

COMMISSIONER DIAZ: Yes, I want to echo the Chairman's comments regarding the ability to self-criticize yourselves and go forward. There obviously has been a major effort, and your discovery efforts, I guess, have all been major steps.

I've got a couple of questions, both of them really related, and I will state them first.

When you looked through your present to the supporting material, there's some programmatic items, you know, in the case of the specific list that have high priority, which I will tend to qualify them, but you can see them safety-significant or risk-significant.

And then when you get to the restart issues or probability questions, those same items take place with low priority. A case in question is the ice condenser which most -- leads me to my second part of the question.

There is some discrepancy, at least to me, at first sight, in the way you prioritize these issues for whether they are case-specific or whether they are

operational issues.

And the second part of the question is, as you know, we went through -- I wouldn't call it traumatic, but a very, very stressful period with Millstone in trying to determine what were the Millstone issues. You know, Millstones has had thousands of issues, and we keep being hammered with how you're going to resolve thousands of issues.

And it happens that really practically any power plant or any industry has thousands of issues to resolve. However, the Commission is always concerned with those issues that are safety issues, or lately, we might be even calling them risk-significant, ambivalent, or use them both ways. We don't ever know which way to use them. But we use them in a way that confuses everybody, including ourselves.

[Laughter.]

COMMISSIONER DIAZ: So, you mentioned, when you -- and Mike Rencheck was the only one to talk about specifically what were some of the safety issues. You talk about the ice condenser and the high-energy lines and the motor-operated valves.

Are those the only real safety and risk-significant issues that your discovery showed up, or are those are the only ones you highlighted?

If so, okay; if not, what other safety and risk-

significant issues had to be not only analyzed, but resolved? And what is the status of both?

So, first, the discrepancy, and second, what are they?

MR. RENCHECK: Let me back up. I think I might provide you with some insight on how we went about establishing the items we have been paying increased attention to, to give you some background, and then I'll answer the question specifically.

We used an industry-proven process that we had used at Salem for screening issues as they came up and we entered them into our Corrective Action Program, so we would call restart issues issues that were safety issues, operability issues, design and licensing basis issues, configuration management issues, a gamut of regulatory compliance as well.

When we took a look at those issues that we were calling "restart required" we had a very experienced management team and we went through all of those items, identifying what issues and general issues could result in something that was safety significant. That is the list of 40 that I had talked about.

After we scrubbed through all of the issues we found, we had about 40 on our list that we knew that we had to pay increased attention to because they could have some

safety significance to them.

Now as we have been resolving them to date we have only identified those three that truly had safety significance to them, although we are continuing to work through the issues and we continue to look through the issues --

COMMISSIONER DIAZ: Excuse me -- have high safety significance? Obviously the other 40 have some safety significance. You want to prioritize them in a level of requiring major attention from you and also have regulatory significance. Is that --

MR. RENCHECK: That is correct.

COMMISSIONER DIAZ: That is correct, okay.

MR. RENCHECK: That is how we came up with the list. We are still working on them. We have three to date: the ice condenser, motor-operated valves, and high energy line break.

Now I believe you asked about the inconsistency. I believe if you look at those issues they are each in themselves have -- play a different role in the plant, so we do not intend to communicate an inconsistency with the priority on them. They all are being looked at at the same level.

COMMISSIONER DIAZ: Okay, but it clearly says it is high priority in here, it's low priority in there, and,

you know, if I am a layman, which I, you know, tend to be, some of the time I look at it and say wait a minute, you know, you are placing different priorities at different times.

On issues of safety significance, I just really focusing on safety significant issue, shouldn't the clear priority on safety significant issues be maintained throughout or is the process you are establishing, you know, culls them some time and say they are no longer high priority? I don't understand.

MR. RENCHECK: I guess to answer that question we have placed again increased management attention on those 40 issues, placing them in a higher realm of management attention and a higher priority than the other issues that we have had for restart. We have periodically reviewed them internally as well as with the Staff.

COMMISSIONER DIAZ: The question is should some of those that are very important like the ice containment or the high energy lines or the motor operated valves, should they carry that same priority into the operation?

MR. RENCHECK: We are correcting those issues for restart so as we restart our facility, we will be restoring our plant back to its design licensing basis or having new licensing actions that we have already worked with your Staff on.

CHAIRMAN MESERVE: Commissioner McGaffigan?

COMMISSIONER McGAFFIGAN: Thank you. I want to join the Chairman in commending this group of folks for their straightforwardness, not only today but over the last year or so in tackling the problems of restart.

One issue that comes to mind, since the plant has been down for so long, how are you stocked for licenced reactor operators, senior reactor operators and I assume you probably have some classes ready to do their manipulations and whatever once you have a plant to manipulate -- where do you stand in trained people?

MR. POLLOCK: We are in a little different position with the restart at Cook than some of the other plants. We are actually going to be restarting Cook primarily with operators that had operated the plant prior to the shutdown.

In fact, it is pretty well -- I believe it's actually 95 percent SROs and 80 percent ROs and of that 95 percent SROs some of those are ROs who have been upgraded through the licensing process to SROs, so basically we are restarting Cook plant with operators who had operated Cook prior to the shutdown.

COMMISSIONER McGAFFIGAN: You didn't lose people?

MR. POLLOCK: We didn't lose people from that standpoint, although there's some changes, some people who

were in different positions and were relicensed. We haven't lost people.

Additionally, we have 24 SROs slated for training classes that we have brought in that were previously licensed from other plants to augment this and go into a training program starting this spring -- actually, two training programs we will have going this spring.

That is on the licensed side, and then we have brought in nearly 40 equipment operators to augment our staff also going through the training program.

COMMISSIONER McGAFFIGAN: This is a philosophical question that Commissioner Dicus asked. You have one set of standards for restart, and we have heard that from other plants that some of these folks have worked at, and I know they are going forward to achieve excellence, first quartile, whatever. How do you see -- how long do you see that period taking to achieve the higher standards that you hope to achieve?

MR. POWERS: Well, we would love to be able to tell you that it could happen over a short period of time, but realistically the cultural change and making sure that it is embedded in the fabric of our culture in our estimation will take from three to five years to see its full fruition demonstrate itself.

In the short-term, let's say over the first year

or so following restart we still see us in a mode of providing a lot of directive top-down management as the cultural attributes get further and further developed throughout the organization.

We have a business plan that is being put together to carry our efforts of continuing that change past restart. There will be 10 strategic initiatives that we'll go to work on some of the human performance issues that Chris alluded to, some of the strategic performance initiative that we need to tackle in terms of enhanced reliability for the units, improved refueling outage performance and the like, and we have included resources to support that business plan as part of our going forward effort but overall I would say you are looking at a couple refueling cycles to really see the results of that cultural change.

COMMISSIONER McGAFFIGAN: And then one final question. This may be for Dr. Draper. The Corbin MacNeills of the world and Don Hinzes say you are either a shark or you are going to be eaten.

[Laughter.]

COMMISSIONER McGAFFIGAN: And one of the issues is insularity. I mean the reason I bring it up -- there is a safety nexus. You know, some of the plants -- once Mike worked at Crystal River and it's now been purchased by Carolina Power & Light, I believe, or merged -- there is a

trend in the industry towards in that case it was a single unit. You have a two-unit plant so you have more personnel, but the notion that, the philosophical notion that some people in the industry put forward is that you need a group of plants to help provide people with career path opportunities to retain them and that sort of thing, so do you see -- how will you deal with the insularity issue on a more global scale?

DR. DRAPER: Well, we think restarting the units gives us a variety of options. The options are relatively obvious, I suppose.

One has been suggested -- that you could either sell or buy and become either larger or nonexistent. There are intermediate possibilities, we think. The fact that we will have the relationship with the South Texas Project means that there are really four units that have some relationship one to another.

There is also the possibility that we would form some sort of an operational alliance of the type that has been formed by the Wisconsin companies. Those companies are nearby. Some of the units at least have similarities to our own plant, so it is a bridge we have not yet crossed. We recognize that it is something that is certainly worthy of attention, but I wouldn't say it is as obvious as perhaps Corbin thinks it is, that a two-unit, substantial sized

plant couldn't be successful. I think it probably could be, but that is not necessarily the optimum situation.

We will just as we go forward evaluate what those options are.

COMMISSIONER McGAFFIGAN: Thank you.

CHAIRMAN MESERVE: Commissioner Merrifield.

COMMISSIONER MERRIFIELD: Obviously, you know, a lot of the success here is due to the fact that you brought in the strong management team. In fact, you have so many of them here it makes me wonder who is left at the plant today but --

[Laughter.]

COMMISSIONER MERRIFIELD: I guess my question is institutionalization of changes so that when this group of folks leaves down the line you will still have the right kind of results, that this is not a person-driven process, that it has become institutionalized within the system, and I wonder if you could just touch a little bit on how you are going about doing that.

DR. DRAPER: Let me make a comment and then ask Bob to comment as well. I think you are absolutely right.

One of the things that we believe we had done is to put together an absolutely top notch team of people who have had experiences at a variety of successful operating plants as well as the restart plants, and so we think we

have a top layer organization that is second to none.

The trick is to, as you suggest, institutionalize that, be sure that the people who are in the succession plan have equally good skills and we'll be working very hard to be sure that we don't have a team that is the All Star team leading off, with nobody else sitting on the bench, and that is a challenge for us. We believe that we have capabilities within our own organization for developing people who have been there, and we will doubtless continue to look around as needed to fill in behind these guys.

MR. POWERS: Let me answer the question on a personal level. I came to help this plant achieve world class performance and my job is not done, so I plan to stick it out and make sure that happens.

Now having said that, the plan that I am implementing is twofold for about the next year or so. It will be a top-down effort to ensure that the cultural attributes that I mentioned are in fact demonstrated on a day to day basis, and I plan to make sure that the management team that is in place is motivated and appropriately compensated to stick it through as well.

In the longer term, the pre-eminent, the first strategic initiative in our business plan will be the human performance initiative. It includes a vision that says to achieve the operating focus that Chris Bakken described we

will license people throughout the facility to get an operational perspective or certify them. Those will be engineers and maintenance people and radiation protection and chemistry people who will get a sense of what it is like to operate the facility so that they can carry that spirit of what it takes to truly have operational focus forward.

Those will be the types of actionable items we will have to accomplish over the next three, four, five years to really make sure that this is self-sustaining, and be less susceptible to the senior management team deciding to go off and pursue other adventures, and that is what we are committed to do.

CHAIRMAN MESERVE: Thank you very much.

COMMISSIONER MERRIFIELD: Mr. Chairman -- I'm sorry, that wasn't my only question.

CHAIRMAN MESERVE: Could you make it brief now, Jeff?

COMMISSIONER MERRIFIELD: Can you estimate the size of the backlogs you expect at restart and how you are going to deal with that given the fact that you may have emerging issues under power?

MR. BAKKEN: Yes. The specific size of the backlog, Commissioner, is a little bit too early to tell. We do have a meeting planned with the Staff to discuss the backlogs in detail and our plans for addressing them in

March. In general, the backlog are scrubbed carefully using the restart criteria that we have with the same process that has been used elsewhere.

We will be very careful going through it to look to make sure that the individual component as well as potentially aggregate impact is adequately reviewed to make sure that there is no safety issue and that we don't miss a design or license basis issue or a reliability issue.

All of that review is being done by the system manager as well as the senior reactor operator and ultimately comes to our plant operating review committee for review and approval. It is a pretty rigorous review process to make sure it is okay.

COMMISSIONER MERRIFIELD: One final brief question. Commissioner Dicus asked about readiness renewal oversight process, but I am interested in whether you have any insights at this point on how we might integrate the 03.50 process into that new program as well?

MR. POWERS: The 03.50 process, Commissioner?

I think that deserves some thought. There is a big difference -- the 03.50 process is really a process to drive discovery. The oversight process is one that really needs to have programs in a healthy status to work as I mentioned. Beyond that, we really haven't thought through any --

COMMISSIONER MERRIFIELD: Okay, perhaps it's for another day. You brought us some insight on that. Thank you.

CHAIRMAN MESERVE: Good. I would like to thank you all very much. It's been a very helpful presentation.

I would like to turn now to Mr. David Lochbaum, who, as most of you know, is a Nuclear Safety Engineer with the Union of Concerned Scientists. He has been following the situation at this plant carefully over the years. Welcome.

MR. LOCHBAUM: Good morning. Thank you for soliciting our views on this matter.

Nineteen months ago I sat at this table to discuss the proposed restart of Millstone Unit 3. My presentation at that time ended with these two conclusions, quote, "NU's future performance cannot be predicted, but it is known that the NRC Staff lacks the ability to reliably shut down plants with regulatory performance problems. Millstone Unit 3 should not start without that adequate protection standard being met."

There are many similarities between D.C. Cook Unit 2 today and the Millstone Unit 3 facility in June of 1998. Both had been closed for more than two years while their owners made numerous corrections to both the physical plant and to its procedures.

We believe that the extent of these changes strongly suggests failure by the plant owners and also by the NRC to have properly focused on safety. D.C. Cook's owners have provided today a lengthy listing of plant modifications, equipment upgrades, and procedure changes that they have made to support their assertion that the facility is preparing to restart.

Millstone's owners provided a comparable listing in June of 1998 and similar time and effort has gone into examining these lists in an attempt to ensure that the necessary safety margins have been restored.

The compilation and scrutiny of D.C. Cook's list is as important now as it was for Millstone in 1998. The long length of these lists demonstrates that substantial erosion of safety margins occurred. I will try to avoid my usual exchange with Commissioner Diaz over this subject by not stating that this meant that the plants crossed the line between safe and unsafe. Instead, I will say that this meant the plants crossed the line from acceptable performance into unacceptable performance.

The key difference between Millstone in 1998 and D.C. Cook today has nothing to do with their respective laundry lists. The key difference is that the NRC Staff now has a list of what it has corrected. At the top of that list is the revised reactor oversight process. In 1998 the

NRC Staff did not have such a list. At best it had an IOU slip.

In effectively implemented reactor oversight process is vital for D.C. Cook, for Millstone, and for all operating nuclear plants. If performance declines an effectively implemented oversight program wills step in and prevent safety margins from being eroded to the point where the line between acceptable and unacceptable performance is crossed.

In 1998 we lacked confidence that the NRC Staff had the means to detect and correct declining performance at Millstone should that occur following restart. After all, the Staff was using the same policies and procedures that had been used unsuccessfully prior to Millstone's extended outage.

Today we have confidence that the revised reactor oversight process, if implemented effectively, can provide the Staff with the means to detect unacceptable operation at D.C. Cook if its performance declines following restart.

The qualifier in that statement, "if implemented effectively," should not be discounted. The old reactor oversight process could have been successful if it had been implemented effectively.

We are encouraged that the Staff's plans for implementing the new process include monitoring and follow-

up checks to increase the chances of successful implementation.

We recommend that the revised reactor oversight process be applied to all operating nuclear plants as soon as practical. It is the adequate protection standard that we felt was lacking in June of 1998.

Thank you for listening to our views.

CHAIRMAN MESERVE: Thank you very much, Mr. Lochbaum.

You would agree, would you not, that there has to be some sort of a transition in the case of D.C. Cook because they don't have the critical data available to go full-fledged into the new oversight program.

MR. LOCHBAUM: Right. An earlier draft of my written statement suggested that we apply it to D.C. Cook at restart, after discussions with Mr. Grobe and others that, your point is well taken, the plant is not ready to allow that to happen. It is going to take some time for something to happen, so that I agree that that needs to happen.

CHAIRMAN MESERVE: Thank you. Any questions from my colleagues?

COMMISSIONER MERRIFIELD: Yes.

COMMISSIONER McGAFFIGAN: Yes.

CHAIRMAN MESERVE: Others?

COMMISSIONER DICUS: Go ahead.

COMMISSIONER McGAFFIGAN: On the oversight process, you heard earlier that -- what was broken at D.C. Cook.

Are you confident -- I mean you have sat on this Board -- that if implemented effectively that we would have found the corrective action program problems and the design problems at D.C. Cook with the revised inspection program?

COMMISSIONER DICUS: And if I could, also the people problems as well, if I could tag that on.

MR. LOCHBAUM: I think it would have been, and the evidence that I used to base that guess is the -- and I don't have it today, I wish I did -- we plotted the NRC inspection findings for a two year period before September of 1997 and a nine-month period afterwards, and they averaged roughly eight or nine findings, which included Level 1, 2, 3 and 4 noncited violations.

They averaged eight or nine of those before September, 1997, and they jumped to like 75 in a peak month afterwards. They went up. There was a dramatic sea change.

We felt that D.C. Cook's performance didn't change overnight. The perception changed overnight.

I don't know that the director of the oversight process would have found it at the exact earliest opportunity but I think it would have found it earlier than September of '97.

COMMISSIONER McGAFFIGAN: Would the PIs have found it or would it have been in inspection findings?

MR. LOCHBAUM: I think it was a race, because most of the data comes through the PI format. My guess would be PIs would have found it first. I think some of the back-testing that is done in SECY 99.07 or 7(a), I forget which one, indicates that some of the findings PIs did go other than green at D.C. Cook so I think that would have been an indication. Whether the NRC's supplemental inspections then fully explain what the problems were and pointed out the people problems Commissioner Dicus pointed out, I suspect that would have happened or that there was an opportunity for that to have happened.

COMMISSIONER McGAFFIGAN: I would like to continue. I don't want to turn this into a new inspection program. We will have another opportunity on that, but the significance determination process for inspection findings, do you think some of the inspection findings that were there to be found would have triggered a white or yellow, they wouldn't have all been green inspection findings if you had a properly implemented new oversight process?

I mean these are all theoretical questions.

MR. LOCHBAUM: Right. I hope they would have. If not, at least it would have prompted a debate, which would have given groups like ours an opportunity to have a voice

in the debate, but I think it would have -- absent -- absent -- I really do --

COMMISSIONER McGAFFIGAN: Okay.

MR. LOCHBAUM: I have no data to prove that, but I do believe it would have.

COMMISSIONER McGAFFIGAN: Thank you.

COMMISSIONER DIAZ: Well, I'm sorry we are not disagreeing a lot today. That makes me wonder whether I am getting old.

[Laughter.]

COMMISSIONER DIAZ: David, but I just wanted to say that I personally, I believe the Commission appreciates, you know, your comments early in the process with this, how you brought things out, and I am glad we pay attention, and you have been very valuable to us in this process, and we -- I just want to say thank you.

MR. LOCHBAUM: I appreciate that. Thank you.

COMMISSIONER MERRIFIELD: Commissioner Diaz, beating me to the punch, I agree. I think your assistance in the D.C. Cook oversight, the new oversight process and the 2.06 process have all been valuable and I hope our positive comments don't take away from your constituency's respect for what you do, because certainly I have respect for it.

COMMISSIONER DIAZ: He will disagree soon. Don't

worry about it.

[Laughter.]

MR. LOCHBAUM: Not yet though.

COMMISSIONER MERRIFIELD: I want to say we have been dealing with the issues relative to Millstone and D.C. Cook within the time that I have been a Commissioner, and even dissatisfaction with the way in which we were doing some things at D.C. Cook and at Millstone and have not had quite the same level of concern about what we have been doing at D.C. Cook.

At both we used the 03.50 process, and so my question for you is do we have an issue here in terms of a different way of implementing the 03.50 process? Is it a different way that the regions have acted in their oversight efforts? Is there some inconsistency within how we were acting here at Headquarters? Do we have some other programmatic weaknesses?

Where is it that is the source of a difference, in your opinion, in terms of how we acted relative to Millstone and how we have been acting relative to D.C. Cook?

MR. LOCHBAUM: Well, I think the 03.50 process is intentionally broad-based and they can cover a number of applications. Therefore, that allows a lot of flexibility on level of detail, what is within the scope, what is out of the scope.

Even with that issue, I think it was more in how it was implemented at Millstone versus how it was implemented at D.C. Cook, so I don't think it is a specific problem with the procedure. It seemed to me to be the way it was implemented.

When I attended or monitored Millstone meetings, there were -- the Staff asked questions, but there was no follow-up. There were no strings pulled. It seemed to be accepted on faith what Millstone was doing. I am not saying Millstone was doing a bad job, just when I look at how Region III has handled D.C. Cook, there have been probing questions. It is not adversarial so it is not a different approach, but there is a greater public confidence. At Millstone it didn't look like -- when I came away from a Millstone meeting I usually had questions that I would have asked had I been allowed to speak.

At the D.C. Cook meetings it was very seldom that the region didn't ask the questions first. That led me to greater confidence that they were doing a thorough job asking the questions that I would ask if I could speak, so I think that is the difference that I observed.

COMMISSIONER MERRIFIELD: Thank you.

CHAIRMAN MESERVE: Thank you. We very much appreciate --

MR. LOCHBAUM: Thank you.

CHAIRMAN MESERVE: -- your participation this morning.

Our final panel will consist of various members of the Staff. Good morning.

DR. TRAVERS: Well, I think we're settled, Mr. Chairman.

CHAIRMAN MESERVE: Why don't you proceed?

DR. TRAVERS: Thank you very much. Good morning. As you pointed out earlier, Chairman, in your comments, the Agency has certainly been significantly involved in evaluating the corrective actions at D.C. Cook.

Today we plan to provide you with our perspective on a number of issues, including the status of the licensee's corrective actions, and our own Manual Chapter 0350 restart assessment process.

Joining me at the table this morning are Jim Dyer, the Regional Administrator, Region III, Jack Grobe, who is Jim's Director of the Division of Reactor Safety; Sam Collins, the Director of the Office of Nuclear Reactor Regulation; John Zwolinski, who is Sam's Director of the Division of Licensing and Project Management.

Other members of the NRC staff who have been key to our activities at D.C. Cook will be identified in a few moments by both Jim Dyer and John Zwolinski.

This is the fourth time in the past two years that

we've had the opportunity to discuss the performance at D.C. Cook with the Commission. In July of 1998, we discussed D.C. Cook performance at the annual briefing on operating reactors.

As a result of that meeting, we concluded that the performance at D.C. Cook was declining. In November of 1998, we met with the Commission to discuss D.C. Cook performance in detail, with the particular focus on engineering performance issues.

In May of 199, we discussed D.C. Cook performance again at the annual briefing, and we informed the Commission that D.C. Cook had been categorized as an Agency-focus plant. This was done in recognition that the issues at D.C. Cook had for some time been the focus of senior NRC management attention.

D.C. Cook remains an Agency-focus plant, and the staff intends to utilize the senior management meeting schedule for this Spring as the vehicle for making the determination of whether the Agency-focus classification should be retained or changed.

This determination would include our assessment of the power operations subsequent to any restart authorization. Restart authorization will occur after the Manual Chapter 0350 restart panel has determined that actions have been satisfactorily completed for safe restart

at Unit II.

Jim Dyer, in coordination with Sam Collins and myself, will make a final determination regarding the restart of the D.C. Cook plant.

Importantly, the 035 panel will continue to evaluate Unit II performance following restart to ensure that American Electric Power actions to improve performance are sustained.

I would like to now to turn it over to Jim Dyer who is going to begin our formal presentation.

MR. DYER: Thank you, Bill. May I have Slide 1, please.

Mr. Chairman, Commissioners, here with me today is Jack Grobe, who in addition to being the Director of the Division of Reactor Safety in Region III, is also the 0350 panel chairman. John Zwolinski is the Vice Chairman for the 0350 panel for D.C. Cook restart.

Additionally, Region III staff who are also here involved with the D.C. Cook project are Tony Vagel, the DRP Branch Chief, Bruce Bartlett, his Senior Resident Inspector for D.C. Cook, Gary Shear, the DRS Branch Chief, lead Branch Chief for D.C. Cook, and Mel Holmberg, the lead engineer for the D.C. Cook restart activities.

Can I have the second slide, please? For today's presentation, our plan is that I will first summarize NRC

oversight activities since the shutdown of the D.C. Cook Units, and focusing on those activities since our last briefing in May, 1999.

And then John Zwolinski will present the status of licensing activities that are in progress or have been completed to support the D.C. Cook restart. And then, finally, we will address the staff oversight activities planned for the restart and the operation.

Overall, the NRC has expended approximately 20,000 hours of direct inspection effort at the D.C. Cook plant since 1997, in the past three years.

COMMISSIONER DIAZ: Excuse me, how many?

MR. DYER: About 20,000 hours since 1997, 1998 and 1999. And of those, about half of them, or 10,000 hours of direct inspection effort, have been focused on what I will call the recovery and discovery efforts of the licensee.

Slide 3, please. For a little history, in September, 1997, in followup to the architect engineering inspections and subsequent plant shutdown, dual-unit shutdown of both D.C. Cook Units, Region III issued a confirmatory action letter documenting the actions that American Electric Power would take prior to their restart.

Those actions included resolution of nine specific issues identified during the NRC inspection, as well as our understanding that American Electric Power would determine

whether similar engineering problems existed in other safety systems.

Subsequently, additional problems were discovered, and as a result, the NRC issued a Severity Level II problem violation -- issued violations that constituted a Severity Level II problem, and issued a $500,000 civil penalty in the latter part of 1998.

And in March, 1998, American Electric Power developed a restart plan that expanded and included system readiness reviews of those risk-significant systems to bound the problems found by the inspection.

At that same time, the NRC commenced its 0350 restart panel, formed its 0350 restart panel, and issued its initial case-specific checklist for D.C. Cook restart.

Later in 1998, American Electric Power completed their plant system readiness reviews that were intended to bound the significant issues, and in September, the NRC observed American Electric Power's contracted safety system functional inspection of the auxiliary feedwater system.

That inspection identified significant operability issues that had been missed by these system readiness reviews. Also in September, NRC inspectors identified operability concerns with motor-operated valves that further questioned the effectiveness of their system readiness reviews.

At the November 30th, 1998 Commission meeting, briefing on D.C. Cook, American Electric Power was bringing in their outside engineering and management talent, performing self-assessments, and revising their approach to restart, and in March, 1999, they revised their restart plan to include the expanded system readiness reviews and assessment of programs and functional areas.

Overall, up until March of 1999, from the September 1997 date until March 1999, the NRC expended approximately 4,000 hours of direct inspection effort to identify the scope of their problems to the licensee, and have them initiate their expanded system readiness reviews.

Next Slide 4, please. The expanded system readiness reviews, programmatic assessments, and the functional reviews conducted by American Electric Power staff, augmented by experienced contractors, the process identified numerous deficiencies, some of which required repair, system modifications, and license amendments, as we heard earlier from the licensee.

This was the status of the activities at the time we last briefed the Commission in May of 1999. This past Summer, the Manual Chapter 0350 restart panel focused several inspections on the American Electric Power problem discovery efforts, using our own experienced inspectors and contractor personnel.

Our inspections evaluated the conduct of licensee's problem discovery efforts, reviewed the resultant input to their corrective action process, and assessed the adequacy of the licensee's oversight of this discovery process.

We also conducted a safety system functional inspection of two safety systems as an independent validation of their efforts. We found the expanded system readiness reviews to be effective in identifying the deficiencies impacting safety system functions that confirmed that American Electric Power had conducted sufficiently self-critical reviews of their programs and functional areas, and that the performance assessment organization of D.C. Cook provided critical oversight of plant activities.

This effort ended up and was completed in September of 1999, and the NRC expended approximately 3,000 hours of direct inspection effort to review their discovery efforts.

Following this validation of the discovery efforts, the case-specific checklist was expanded to capture the necessary licensee corrective actions to support the safe restart.

Slide 5, please. This past Fall, inspections have been conducted to review the effectiveness of American

Electric Power's efforts to correct the deficiencies identified during their discovery efforts.

To date, we have spent approximately 2500 hours of direct inspection effort, reviewing such areas as operator training, corrective actions program, safety evaluations, preventive maintenance, operability determinations, ice condenser corrections, and incorporating instrument uncertainties into equipment design testing and plant procedures, as well as some of the engineering corrective actions activities that were discussed earlier by Mr. Rencheck.

The inspections confirm progress in resolving many of the restart issues. Our inspections and NRR staff reviews have confirmed adequate resolutions of the issues identified in the confirmatory action letter and the nine issues in the bounding concern.

We are currently considering the staff's recommendation to close out this confirmatory action letter. The remaining restart activities would then be managed through a case-specific checklist in the 0350 process.

Slide 6, please. At this point, I'd like to turn the discussion of the licensing activities over to John Zwolinski.

MR. ZWOLINSKI: Good morning. I would like to recognize members of the NRR staff, our Project Manager,

sitting behind me, is John Stang, who has had the responsibility for Cook for the last couple of years. His Section Chief is Claudia Craig, who has also been deeply involved with the facility.

I'd also like to note that there are others on the NRR staff that have been deeply involved with technical reviews under the Division of Engineering and Division of System Safety and who supported the work.

As compared to other extended shutdown plants, D.C. Cook did not require the processing of a large number of license amendments as Cook has undertaken an effort to restore the original design basis of the plant.

The licensee chose to make modifications at the plant, in lieu of trying to use analysis to justify the conditions found during the enhanced system readiness review.

Examples include the repair and restoration of the ice condenser to its original design and licensing basis, removal of foreign material, and repair of ice baskets, for example; removal of fibrous material.

They also cut holes in the containment crane wall to allow reactor coolant to flow back to the recirculation sump to maintain levels in the sump.

Thus, our technical staff focused on questions and concerns raised regarding licensing basis of the plant, and

trying to maintain a schedule to support licensee submittals.

This has been especially true over the past year. Two major issues resolved by the technical staff were unreviewed safety questions concerning sump pump performance, ice rates, also credit for control rod insertion following a large break loca.

We have monitored licensee design and licensee initiatives that were identified as a result of the licensee's enhanced system readiness review process and our own inspection process.

In order to facilitate the licensing process, we not only interact with the licensee on a daily basis; we conduct a senior management-level phone call on a weekly basis. Typically, NRR, the Region, residents, and the licensee, participate on this important call.

We've taken steps to ensure surprises have been minimized, and use the concept of over-communication to ensure any and all issues are raised promptly, thus trying to attain or maintain our ability to stay out in front of any critical licensing issues.

Remaining issues before the staff that require our approval prior to restart: Changes to containment spray pump surveillance, deletion of a reference to reactor coolant pump volume as referenced in the technical

specification, and issuance of an order against NUREG 0737 to modify hydrogen monitoring. These are all scheduled to be completed before the end of January.

To put in context, the staff's efforts, we've compared our efforts to a few plants that have been in extended outages, specifically Salem and Crystal River. For Cook, in 1999, our staff has spent approximately 1600 hours resolving 13 issues. For Salem, the staff spent considerable time in the early stages of that plant shutdown, but in the following year, resources spent were considerably less than Cook.

Whereas, with Crystal River in the last year, we spent about 3500 hours on 34 issues, so Crystal River was very heavily into the licensing side of the house, Cook being far less.

That concludes my remarks.

MR. DYER: Slide 7, please. As we heard earlier, American Electric Power plans to restart D.C. Cook Unit II in March of this year, and Unit I later this Summer, after steam generator replacement.

The NRC Manual Chapter 0350 restart panel has effectively focused NRC activities to accomplish the necessary regulatory actions to meet this schedule. As John said, licensing activities have been well coordinated, as well as the inspection activities in working with the AEP

staff.

We've held frequent meetings onsite, in the Region, and here at headquarters to solicit stakeholder input, and to give them the opportunity to observe the regulatory process.

The restart panel continues to review plant issues, emerging issues within the station, and to coordinate our inspection schedules, and review and assess the overall work environment for individuals to raise safety concerns.

Currently, we have some remaining inspections to complete prior to restart. As part of our continued validation of the corrective action program, we will inspect the motor-operated valve program, electrical protection coordination, return to service of safety systems, and the surveillance testing program.

Just prior to restart, we will also conduct an operational readiness inspection with continuous control room observation, and our senior reactor analysts will also assess the risk impact of any deferred work after restart.

Overall, we expect to expend approximately 1200 hours of direct inspection effort in this restart effort, going forward from today.

Restart approval will follow the existing 0350 manual process. The 0350 panel will continue to evaluate

the Unit II performance, following restart, to ensure that improved performance is sustained.

We'll also provide oversight for the Unit I restart, after steam generator replacement, and we'll support transition of D.C. Cook to the new oversight panel.

The implementation of the risk-informed baseline inspection program and the revised assessment process will be delayed beyond April 1st. To minimize the impact during the restart of the units and until D.C. Cook has been operated in sufficient time to develop the valid performance indicators, the NRC, as we heard earlier, the NRC and D.C. Cook will meet in February to discuss the transition plan. We'll have a plan put together before April 1st to handle the transition.

That concludes my prepared remarks.

CHAIRMAN MESERVE: Thank you very much. I think the staff should be commended for their efforts, and we appear to be headed towards a successful conclusion with what is a very obviously major effort. That reflects very well on all of you.

I don't really have any questions for you about the specifics of the restart process, but I wonder if having been in the middle of this, there are some observations you make or lessons we should learn about when we confront this situation again.

Hopefully we won't, but the possibility exists. Are there things that we should learn from this whole process that you've been under that have to do with our own way of dealing with these situations, things we should undertake that would improve the way we approach the kinds of problems that you've been dealing with for the last few years?

MR. DYER: Mr. Chairman, I think that the biggest lesson that I have learned -- and we talked about this, and I think Commissioner Dicus and the other Commissioners have raised the issue -- about looking with 20/20 hindsight, what would we have done with the new assessment process and Cook?

Sam Collins and I have had several discussions about this. It's the importance of, we have to make the new process discover the D.C. Cook's before they get this bad. And I don't know whether the performance indicators would have discovered it, but focusing on the inspection program, it is -- we need to make sure that the tools are there.

I look at it now -- I believe that the new assessment program with the inspection that's currently provided, could find, can find. The challenge that is on me as a Regional Administrator, and Jack as the DRS Director and our team, is to make sure that we put the right kinds of people and have the right kind of inspection effort and talent to identify some of the design basis issues that

wouldn't lend themselves to performance indicators.

And that we ensure that the performance indicators that do come forward are properly categorized so that we get the true picture of performance at the site.

CHAIRMAN MESERVE: Thank you. Commissioner Dicus, do you have any questions?

COMMISSIONER DICUS: Just a quick one. I'll ask Commissioner Merrifield's question for him.

On the 350 process, he's brought this up with the other presenters, and to what extent the 350 process might have to change under the new oversight -- new reactor oversight program that we're going to. I'm just asking it to you, what you think, because it is going to require some modification, but it has also been a very successful program, particularly with D.C. Cook.

Do you want to jump on that one?

MR. DYER: I'm not sure how the new -- what we're looking at to go -- to tie it to the 350 process to go forward. I anticipate that it will be somewhat like we have right now.

There are some critical parts of the 0350 process that I think have to be there. I think the communications channels that it opens up at the point where we make the decision to dedicate the resources, and to manage and to a structured approach, to manage the resources that we're

focusing on a problem plant, are critical. That still has to be there.

Jack is much more familiar with it, so I'll let him talk, if he has anything he wants to add.

MR. GROBE: I've studied the new draft procedure for the new 0350 process, and Sam Collins's staff and I considered whether we should implement the new process, once April 1 comes around. We concluded that we should not, because it is predicated upon valid performance indicators and other things that we didn't do under the old process.

But there are a couple of things that I have learned through this process. I believe this outage could have been shorter, had we been more intrusive earlier in the 0350 process.

Behaviors that we've learned in the Regions over the years have shown we have to provide findings. If a licensee doesn't listen to those findings, we make new inspections and provide more findings.

But we weren't very -- I don't want to say directive, but severely intrusive early in the discovery efforts that occurred in 1998. Consequently, it wasn't until later in '98 when we were going to do an aux feedwater SSFI and the licensee requested that they be permitted to do that with our oversight, that it truly came to the surface, that the early system reviews were not being effective.

We had indications of that earlier, and I believe we should have become more intrusive earlier, and done a more thorough engineering inspection earlier in that process.

With respect to the new, risk-informed baseline inspection program, for that program to be effective, the licensee has to have a robust corrective action program. So it's somewhat of a guess, whether or not the new program could have been effective with Cook in its, as Bob Powers described, insular, nonfunctional from the standpoint of corrective action, mode that it was in.

The new inspection program has corrective action program inspection modules; the old program had those. As Jim indicated, our challenge is to be more effective in implementing those new inspection modules.

In addition, the new program includes a much more intense design focus, once every other year, which was not included in the old program.

So, from that standpoint, those are the lessons learned from Cook and Millstone.

COMMISSIONER DICUS: Okay, thank you.

MR. COLLINS: I think we're going to go forward since -- speaking for the Program Office -- we track the oversight process improvements through the tasking memorandum, and as you know, they go to level of detail.

We have moved improvement initiatives in both the old 350 process, the oversight process, obviously, and also the confirmatory action letter process, into our operating plan as an organization for NRR.

Our regulatory effectiveness matrix includes an initiatives area that includes all of these areas.

The application of the program, specifically the CAL and the 0350 process at Cook was more of a hybrid than we might have seen at a Salem or a South Texas, for that matter.

The hybrid aspect of it was that we had a tendency to be more in-process than confirmatory, once a licensee has come to a conclusion or has completed a program.

That's a credit to Jim and Jack and the resources in Region III, in that in the area of changed management, the staff was able to move for a back-end review, once all the answers were there, to an in-process review wherein they look at the process by which the licensee comes to conclusions, take a sample of the application of those processes, and then move on and only sample the subsequent applications.

The 0350 process is the same way. The discipline having to do with the restart items is very focused towards those specific regulatory risk-significant issues which need to be confirmed by the Region, rather than go back and

recouping all of the items on the outstanding list and ensuring that they're complete before plant restart.

So these initiatives are in process as a result of lessons learned, not only from Cook, but as a learning organization from the past three cases. We have already revised the confirmatory action letter procedure; that's been done.

The 0350 process procedure is in draft, so we're moving down the road as a result of these.

CHAIRMAN MESERVE: Commissioner Diaz?

COMMISSIONER DIAZ: Yes, obviously practice makes perfect, and you guys have so much practice in Millstone and Crystal River and so forth, that, you know, you were able to use better processing.

I have a two-part question, one directed to John and one to Jim. It's the same question.

We all realize, you know, what happened when you got into the discovery of the auxiliary feedwater and the MOVs and the significance of those issues, and how, you know, you it was -- by the licensee, and you -- and now almost at the end of the process, John, what is the confidence level that you have that all major safety-significant issues have been discovered or have been discovered and already remedied?

MR. ZWOLINSKI: I'll go ahead and start.

COMMISSIONER DIAZ: I'm talking about your part, the licensee design, and then I'm going to turn to Jim and ask him the same question on the rest of the issues.

MR. ZWOLINSKI: The licensee did the expanded system readiness reviews and identified a myriad of issues. It was then incumbent on us to run it through a process in which the staff was satisfied that the licensee had identified significant issues, risk-significant issues, unresolved safety questions, or were they issues that were less significant that could be deferred?

So there restart checklist became a very important vehicle for the licensee to use and for us to look at also. So that went in parallel.

The licensee -- and, by the way, this was all done through our 0350 panel. The licensee presented the results of many of these reviews. We independently checked that, verified the licensee was making proper use of 91.18, the degraded nonconforming conditions, and ultimately was satisfied that the restart checklist that they were using was defensible and critical safety concerns had been resolved.

The licensee did mention that they are still addressing high-energy line break issues, and they have a process in place that we have been looking at. And they're also looking at their motor-operated valve program, and

making changes there.

Should a USQ arise, then perhaps there would be the need for an amendment, but we are monitoring those two areas very closely. And right now, we don't see the need to perform an independent technical review.

COMMISSIONER DIAZ: Okay, so you're pretty confident that process worked sufficiently, so that there will be no surprise. You know we got a surprise with Millstone at almost the very end.

MR. ZWOLINSKI: Commissioner, I had the opportunity to work on Salem, to work on Crystal River.

COMMISSIONER DIAZ: That's right.

MR. ZWOLINSKI: And now Cook, and I see the same process being implemented three times, so I'm becoming fairly familiar with it.

I want to retain that arm's-length, and questioning the attitude, but it appears that this facility has quite a bit of design margin. They share this with ius, and we verify that.

Our analysis during licensing reviews shows margin. So, yes, I feel that we're certainly on the right track and have handled the licensing amendments appropriately.

As far as the licensee's activities, their discovery programs seem to be very extensive, and our

inspectors were ultimately able to conclude that the program was, indeed, aggressive.

So the summary of the headquarters look, as well as the inspection look, appears to have given this licensee the marks that they've requested as far as mimicking the other licensees.

COMMISSIONER DIAZ: Okay, and now the same question on the rest of the issues, Jim?

MR. DYER: Well, from the inspection standpoint, Commissioner, I think --

COMMISSIONER DIAZ: Including human performance, if you please.

MR. DYER: I think from the inspection standpoint certainly in the discovery phase when we invested 3000 hours of direct inspection, that is five FTE that we delivered when observing their inspection -- excuse me, observing their discovery phase, independently validating it, and then watching their process for making sure that those actions got into the corrective action process.

That is a phenomenal amount of inspection and we used again, and I'll echo the presentation, we used our very best inspectors. We went through and identified ahead of time our best senior resident inspectors. I worked with the other regions to get talent from the other regions as well as from Headquarters. We paid top dollar to get the top

contractors to come out and support our inspection effort, and so that 3000 hours of inspection effort really wrung out their overall processes and did our own independent validation to identify it.

Jack can correct me if I'm wrong, but there was essentially no surprises during our inspections. There was a couple of more minor issues and that, but there was nothing that was a show-stopper or anything that would jump up on our radar screen through the discovery phase.

The human performance was part of that. We had done an operator training inspection. Earlier some of the EOPs and the procedure issues or concerns we found that the licensee has essentially set standards higher than ours and is out trying to implement them, and we haven't -- we have gone in in very much a confirmatory role.

MR. GROBE: Just to echo and expand on a couple things that Sam and Jim have said, we took a different approach at Cook, and that was to be more in process to avoid, as Jim said, shooting any air balls at the last minute. We didn't want to have a repeat where they finish their discovery phase and we came in and did some inspections and concluded it was inadequate. That would have been a failure obviously on Cook's part but also on our part, so we performed oversight in process, first as they developed their programs, as soon as they had a program

developed we provided immediate comment on that, and we did provide comments that enhanced the quality of the program.

It was a good program. The program included as a starting point identifying the key functions that each safety system served, so it started from that as a foundation, then going to identify what design documents existed, and in approximately 40 percent of the cases they couldn't find the documents, and then they had to reconstitute those.

I had three Staff that were onsite supplementing the resident team essentially full time for about three months. As each step was taken by the licensee, we would provide critical oversight and feedback.

As Jim indicated there were no show-stoppers in our inspection findings. We made findings, had good folks out there looking, and then at the end confirmed with two independent SSFIs of two safety systems to ensure that we had thorough oversight.

COMMISSIONER DIAZ: Okay, Mr. Chairman, one tiny question with a very short answer, and it is directed to the licensee.

We sometimes, you know, the Staff gets between a rock and a hard place. They are too intrusive or they are not intrusive enough and it appears by getting in process that some improvements were made to the process.

Do you agree or disagree with the Staff assessment that being in process was helpful?

DR. DRAPER: Oh, we absolutely agree that that was a helpful move.

COMMISSIONER DIAZ: Thank you.

CHAIRMAN MESERVE: Commissioner McGaffigan.

COMMISSIONER McGAFFIGAN: One quick question, and then perhaps one slightly longer.

Mr. Dyer, you said that you have a Staff recommendation to lift the CAL under consideration. How long is that review going to take, or is that imminent, your decision on that?

MR. DYER: I believe it will happen -- we get back this week --

[Laughter.]

COMMISSIONER McGAFFIGAN: If we let you guys do your work --

MR. DYER: Well, yes. The Staff's recommendation is the inspectors that were inspecting all the individual items have agreed that the nine items and we closed out the bounding issue as part of the discovery inspections, then we had the nine specific issues.

There was one for NRR evaluation, which I believe was the last one in NRR inspections that exited last week, closed out all the issues.

COMMISSIONER McGAFFIGAN: The more philosophical issue, just to go back to this oversight issue, all the hypotheticals we are asking about oversight which may be more appropriate to our March Commission meeting than today, but since D.C. Cook is in front of us, the new oversight process, would the PIs have caught D.C. Cook?

If you have a broken Corrective Action Program, will our Corrective Action Program inspections catch D.C. Cook, would they have, or is it the design inspections?

By having the PIs, we are freeing up resources to do modules that we didn't do before. Is it the design inspection that would have caught D.C. Cook? Just hypothetically, you know, David says, Mr. Lochbaum says if properly implemented we will catch the D.C. Cooks next time. I am not as sure, because I am not sure how the significance determination process gets you white and yellow findings on things like broken Corrective Action Programs and broken design bases, and so that is my question.

MR. DYER: From my perspective, it can, and we need to make it. That's my mindset.

COMMISSIONER McGAFFIGAN: My mindset too, but you have to be able to analytically be able to show that at some point.

MR. DYER: And I think the question we are still wrestling with too, and Sam probably could speak to this, is

the cross-cutting issues, and how we find those things.

I don't know whether or not the PIs would have led the Corrective Action Program or the design inspection. We have all three of those tools. When we get to our PPR process, we need to be able to put it together and come up with the conclusions much sooner.

MR. GROBE: If I could just correct some information that was alluded to earlier.

The benchmarking that was done earlier this year -- excuse me, last year -- of the new safety determination process, significance determination process, utilized the findings that came from Cook following shutdown, looked at all of those findings and concluded there would have been actually several red findings had those issues been identified.

Cook was a well operating plant prior to the shutdown. It operated reliably and they were a middle-of-the-road performer as far as our inspection findings were concerned.

DR. TRAVERS: But I think the sorts of findings you are talking about are not performance indicators as much as they are design basis issues that have subsequently --

COMMISSIONER McGAFFIGAN: So it's really design basis --

DR. TRAVERS: So I think corrective actions and

design basis issues are the ones that I think of the Cook experience as the ones embodied in the oversight program in addition to the PIs.

COMMISSIONER McGAFFIGAN: And the SDP did pump out even red findings?

DR. TRAVERS: Yes.

COMMISSIONER McGAFFIGAN: Once you got them? Okay.

MR. COLLINS: I am very careful with absolutes, and I am perhaps not quite as optimistic as maybe some of our other stakeholders who have been at the table, because I think some of this has yet to play out, as well as the licensee's involvement.

We have to realize that the licensee plays a major role it --

COMMISSIONER DICUS: It's critical.

MR. COLLINS: -- in ensuring that their internal Corrective Action Program, which I believe NEI would acknowledge has to be sharpened up in order for the oversight process to work appropriately, the self-assessments, the peer reviews, there is a dual burden here.

Our process needs to drive it. We need to understand licensees' capability and their processes, but there are also obligations on the licensees' end.

The same for those remaining issues before plant

restart. This is a status briefing. The plant is not ready to restart. The process has to play out. We do have an ASP finding, high energy line break, that the Office of Research is providing support as they have throughout the restart process, and discovery will continue in some important areas by licensees -- not in new areas, but as far as the extent of condition.

What we have to be comfortable with is that the NRC processes in place, 03.50 oversight process and inspection and licensing, will be able to respond to those licensees' findings through the remainder of the restart process and come to appropriate regulatory decision. I am confident in that.

CHAIRMAN MESERVE: Commissioner Merrifield.

COMMISSIONER MERRIFIELD: Yes, I have three quick questions, I think. They probably all can be answered with a yes or no.

During your presentation you discussed a variety of the problems that were identified at D.C. Cook and the efforts underway by the licensee to resolve those as part of its corrective action.

Are you confident the licensee has taken the steps necessary to address the root causes of the problems identified in the plant so that they do not, these problems of this nature don't reoccur in the future?

MR. DYER: Yes, sir.

COMMISSIONER MERRIFIELD: We at this point have had a lot of focus on Unit 1. My sense is at least from what I have heard so far is many of the performance and programmatic problems at the plant were common to both units.

Are we taking steps necessary to review our inspection efforts relative to Unit 2 so we can reduce our inspection efforts as it results to Unit 1 going forward?

MR. DYER: Jack, I'll let you --

MR. GROBE: Yes. The first unit is actually Unit 2. It is backwards this time, but the programmatic issues that are corrected for Unit 2 restart are also going to be valid for Unit 1 restart.

We have already started mapping out the inspection that we believe is necessary for Unit 1 restart. It will be substantially less than what we have done in Unit 2 and we will primarily focus on the more significant engineering modifications and verification that those were performed correctly and then the similar inspections to what we are doing now going forward on system return to service and preparation of the operators for operating two units simultaneously safely.

COMMISSIONER MERRIFIELD: My final one is do we have any NRR or Region III resources dedicated to restart or

on the licensing efforts so that these efforts can be carried out in a timely manner?

MR. DYER: The answer to that is no, but we do have sufficient resources within the agency, and that is the way -- I view as the agency focus effort for D.C. Cook to get resources from the other regions as well as NRR, so collectively as an agency we do have the resources for restart but we are beyond the regional level.

MR. COLLINS: I think this is a good example of the teaming aspect where Region II I think in particular, as a result of the performance of their plants in that region, has provided a significant amount of resources, the other regions also, but Region II particularly.

MR. DYER: Yes, sir.

COMMISSIONER MERRIFIELD: Thank you.

CHAIRMAN MESERVE: Thank you very much.

On behalf of the Commission, I would like to thank American Electric Power, Mr. Lochbaum, and the NRC Staff for providing a very thoughtful and helpful briefing.

It is clear that AEP faced a daunting challenge at D.C. Cook and hopefully they are well on their path to its resolution. It is also clear that the NRC Staff, and I am referring here to resident, regional and Headquarters staff, have played an integral part in reaching a solution here, and I would like to thank you all.

[Whereupon, at 12:33 p.m., the briefing was concluded.]

CERTIFICATE

This is to certify that the attached description of a meeting of the U.S. Nuclear Regulatory Commission entitled:

TITLE OF MEETING: BRIEFING ON THE D.C. COOK PLANT
PUBLIC MEETING

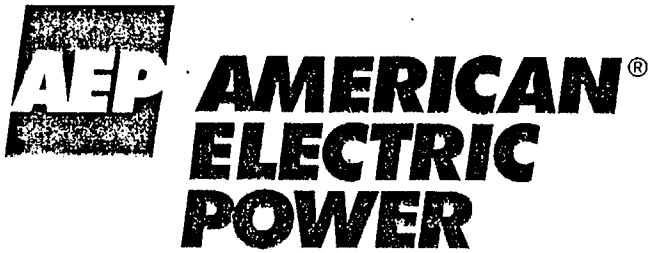
PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: Monday, January 10, 2000

was held as herein appears, is a true and accurate record of the meeting, and that this is the original transcript thereof taken stenographically by me, thereafter reduced to typewriting by me or under the direction of the court reporting company

Transcriber: Rose Gershon

Reporter: Doug Swift



Presentation to the Nuclear Regulatory Commission

January 10, 2000

Dr. E. Linn Draper, Jr.

Chairman, CEO, &
President - AEP

Agenda

Introduction	**Linn Draper**
Overview	**Bob Powers**
Discovery, Results & Corrective Actions	**Mike Rencheck & Chris Bakken**
Closing Remarks	**Bob Powers**

Bob Powers

Senior Vice President &
Chief Nuclear Officer

Gap Analysis

Desired Attributes

- Safety First Culture
- Capable Leadership
- Self-Critical / Effective Corrective Actions
- Trained & Prepared People

Symptoms at Cook

- Insular People
- Ineffective Change Management
- Deficient Processes
- Missing Documentation
- Eroded Safety Margins
- Inoperable Equipment

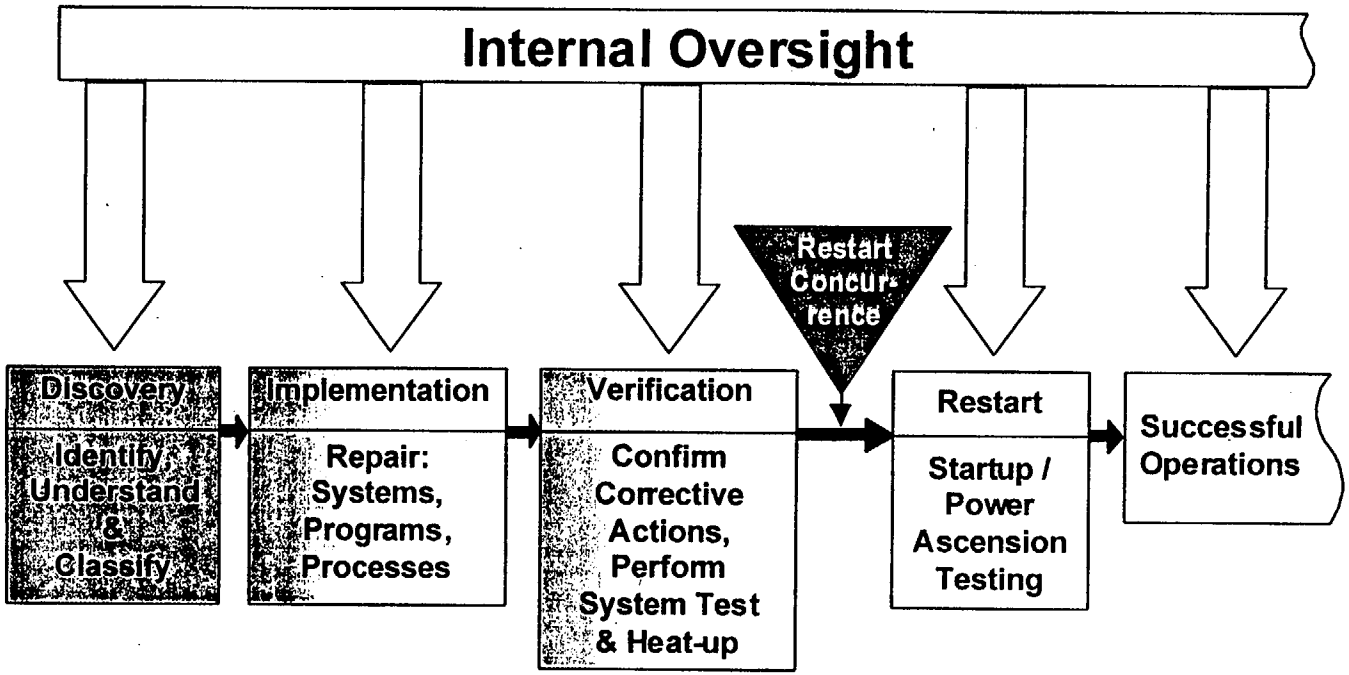
The Fundamentals Were Missing

Key Management Expectations

- *Remove them and they ... replace with us and we*
- *Communicate effectively*
- *Promptly identify and correct problems*
- *Plan Plan Plan - then execute, check, adjust*
- *Do what we say we will do*
- *Have "mutual" accountability*
- *Line management owns quality*
- *Have passion!*
- *Pass it on*

Rebuilding The Fundamentals Through Behavior Change

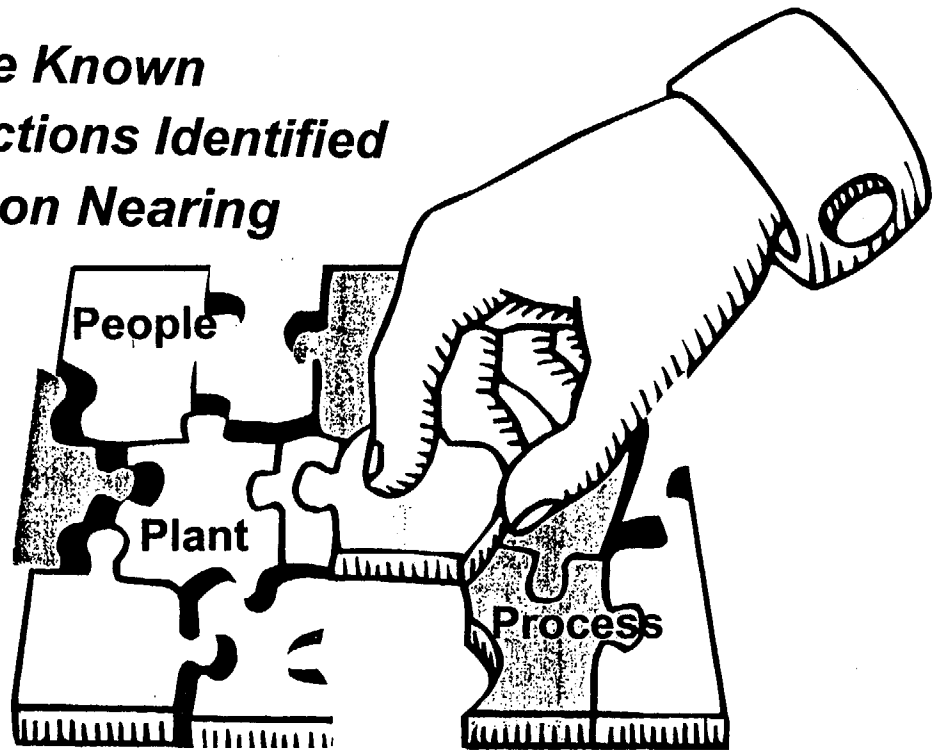
Restart Process



We Know How to Find and Fix Our Problems

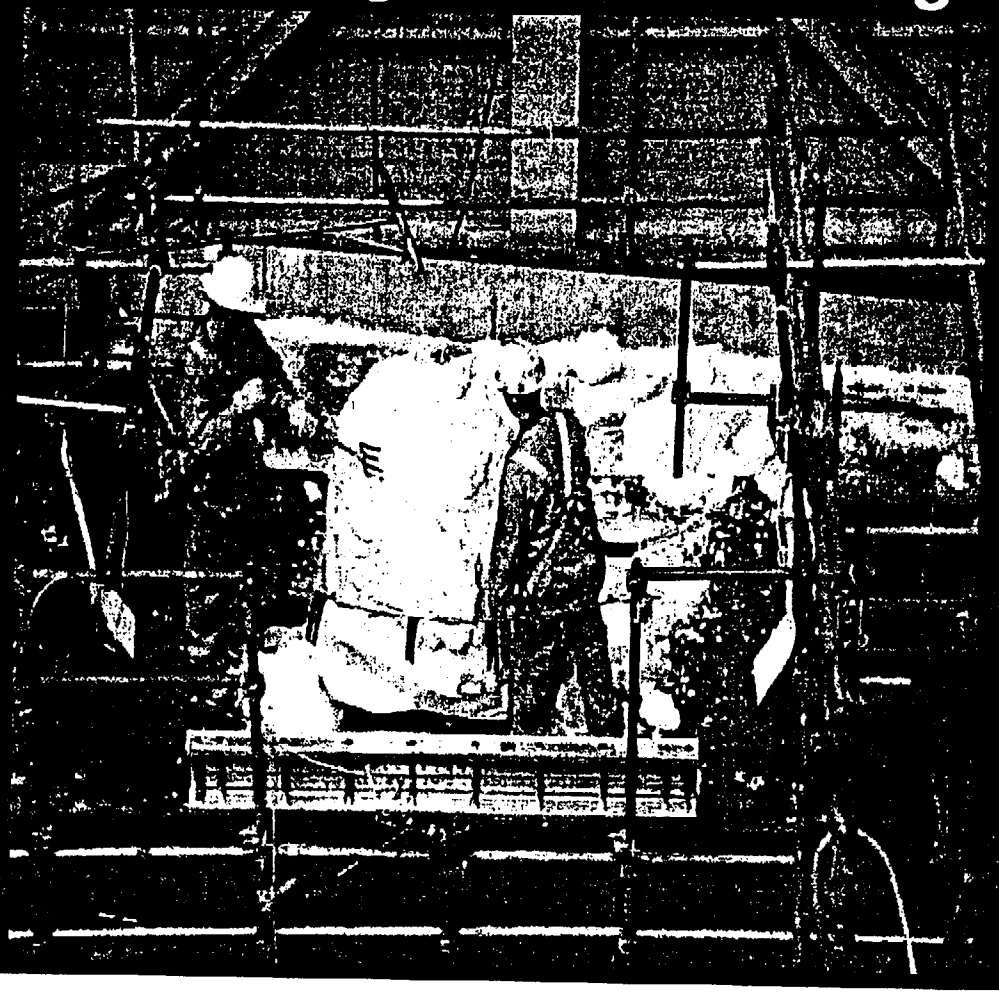
Present State

- *Problems Are Known*
- *Corrective Actions Identified*
- *Implementation Nearing Completion*

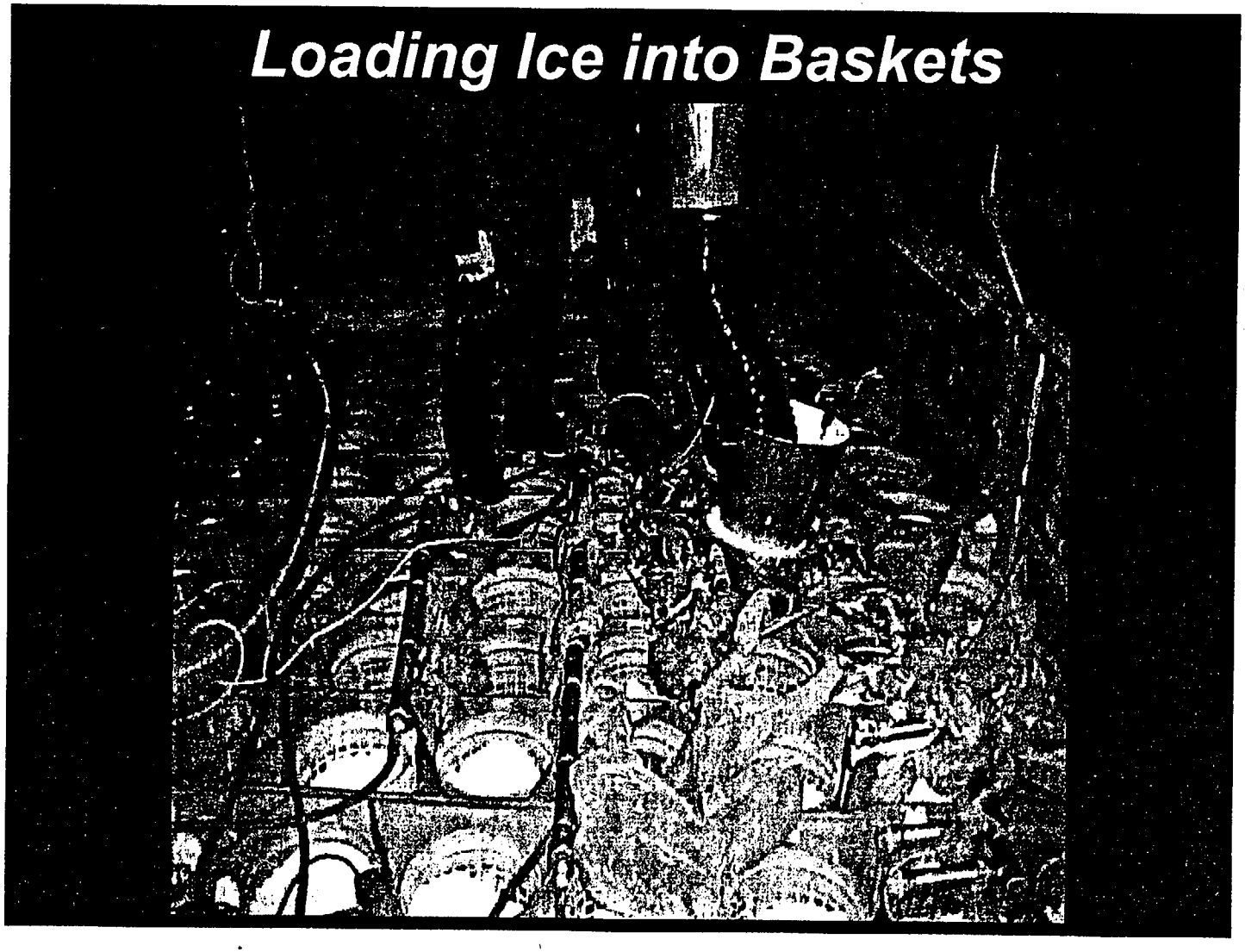


Ice Being Delivered

Preparing Ice for Loading



Loading Ice into Baskets



Present State

- *Problems Are Known*
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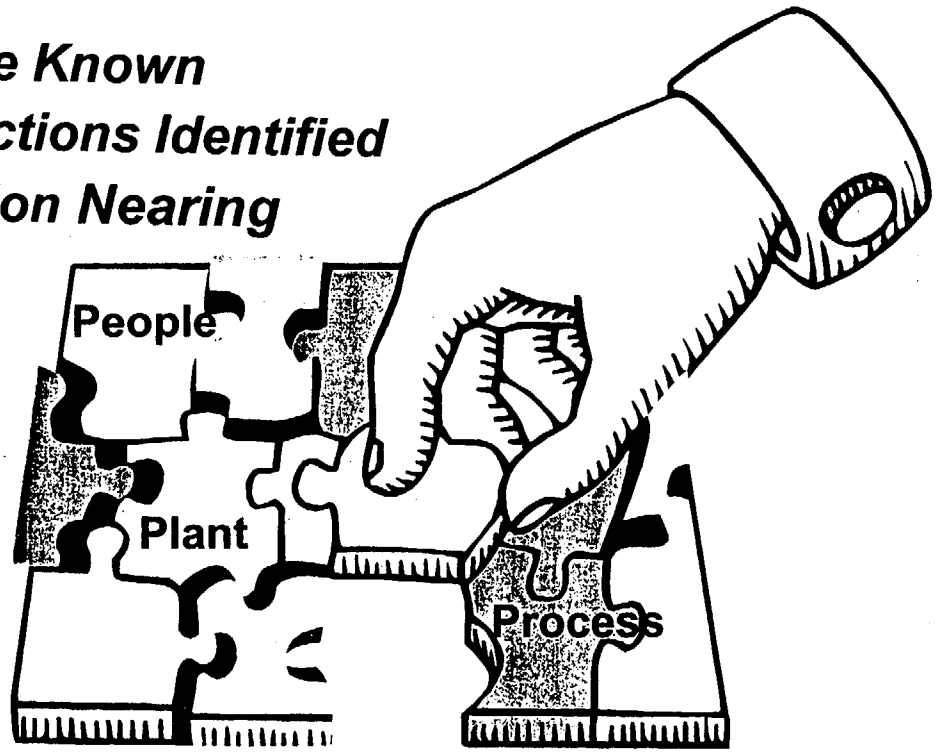
- *Implementation Nearing Completion*



We are Working Our Plan & Schedule

Mike Rencheck

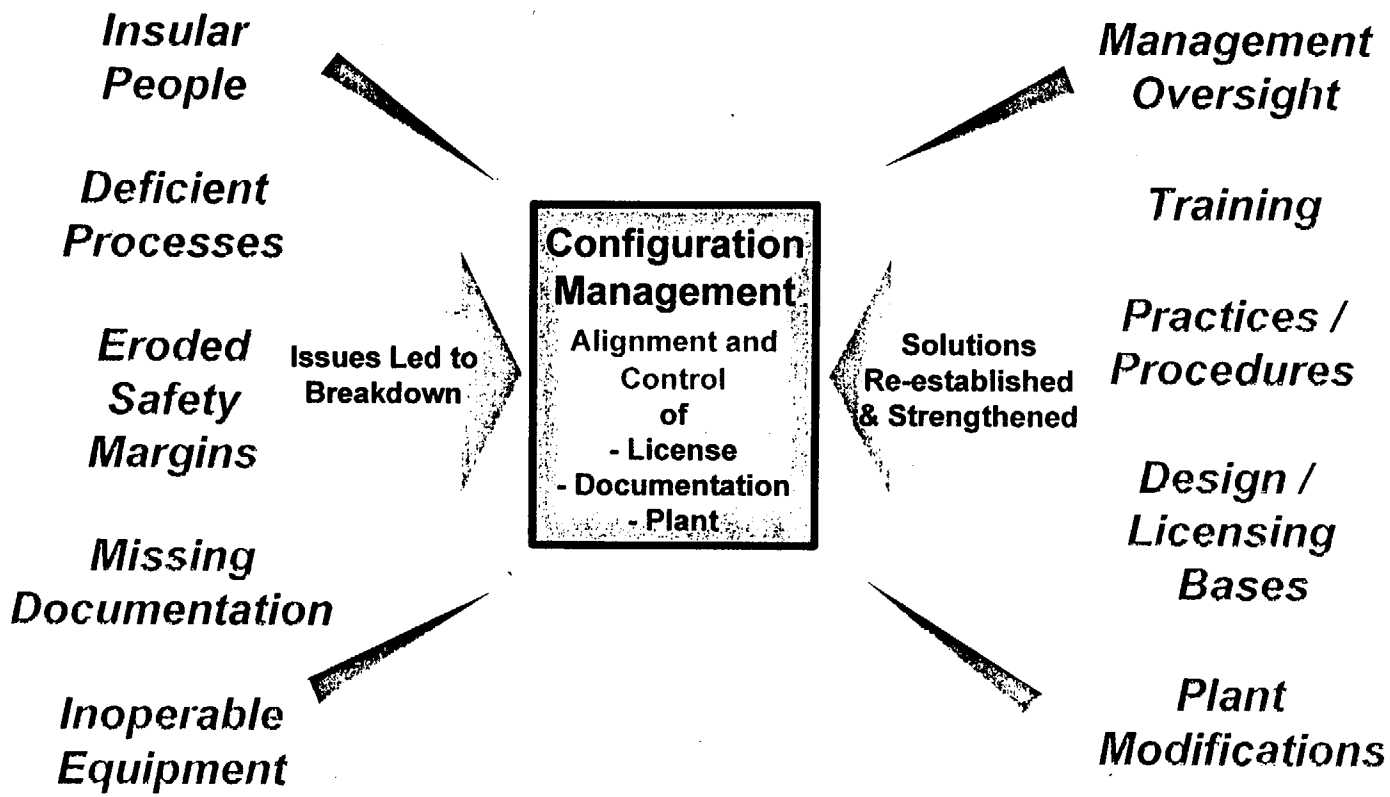
Vice President
Nuclear Engineering

Key Elements of Discovery

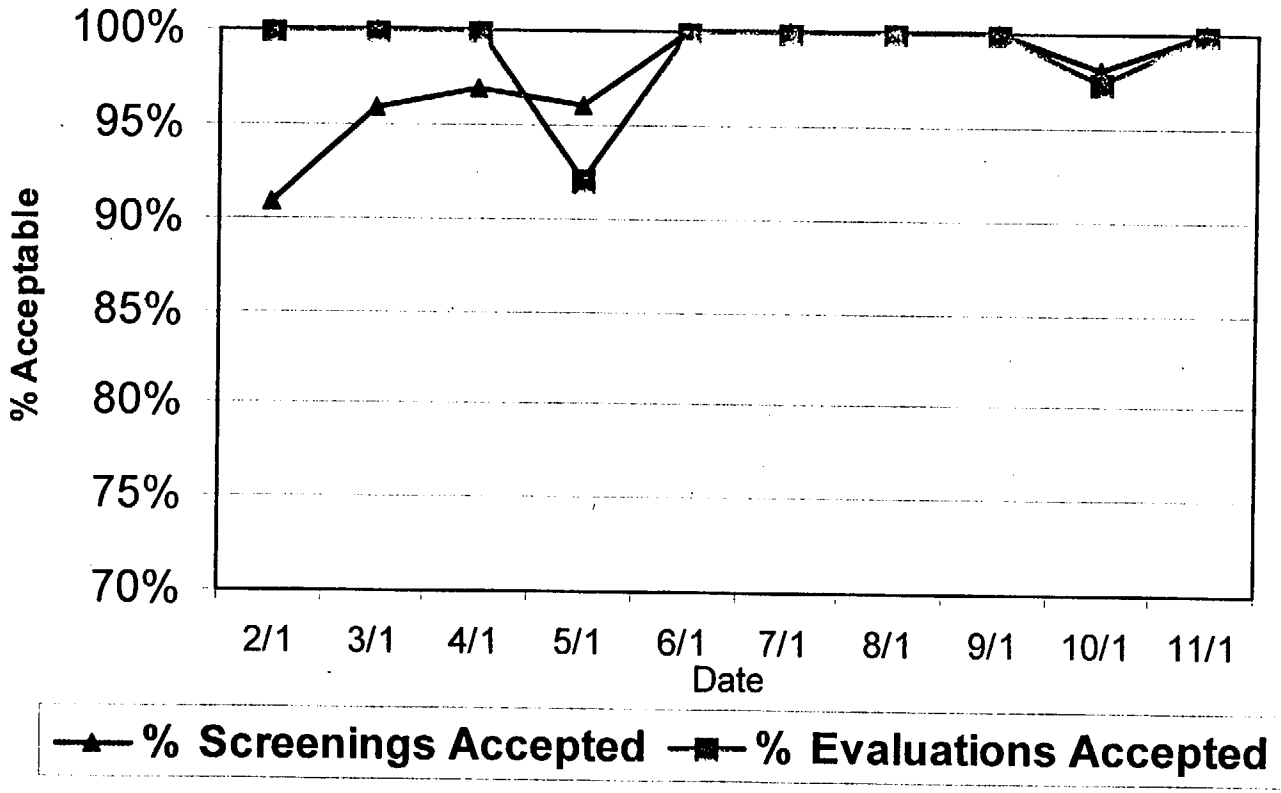
- Industry Proven Process
- Experienced People
- Comprehensive / Intrusive Methods
- Use of Corrective Action Program
- Rigorous Review

Discovery Process was Rigorous and Comprehensive

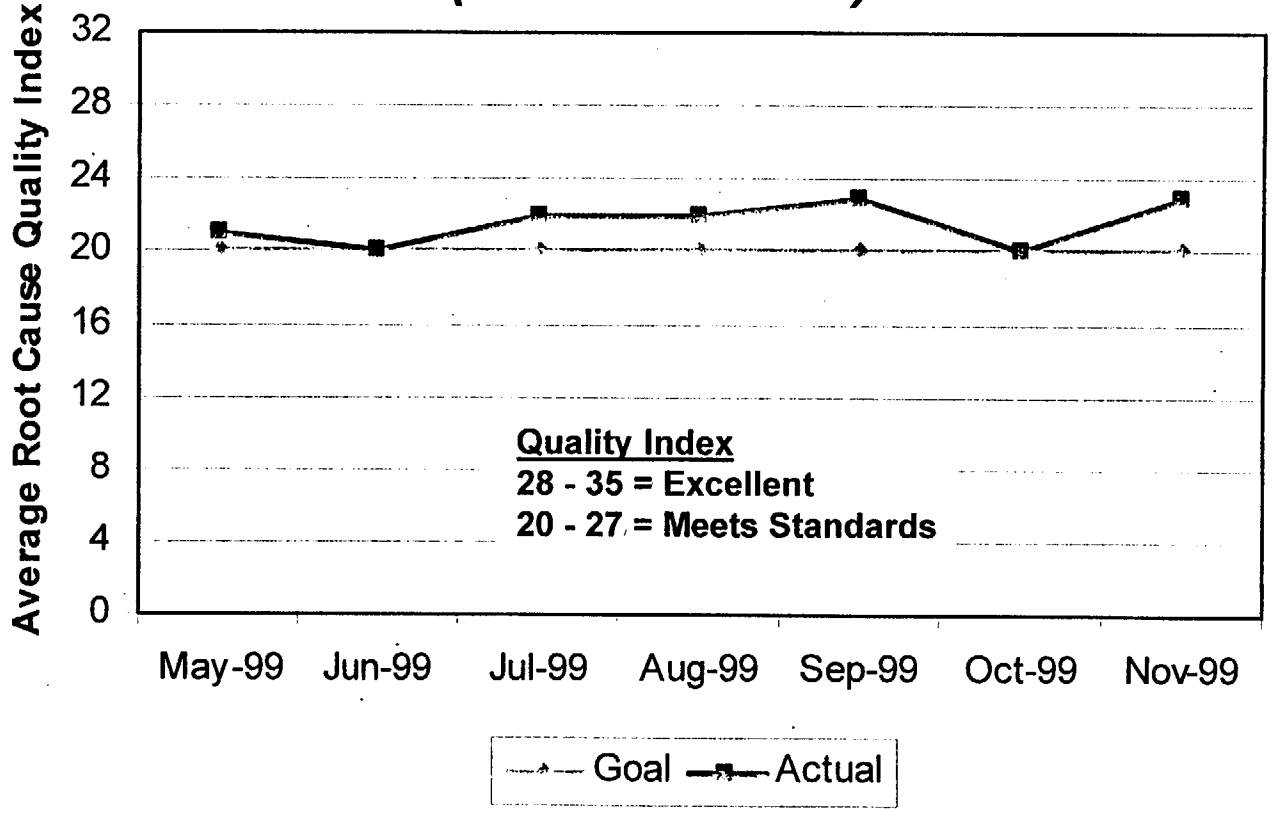
What We Found



Safety Screenings & Evaluations: Quality Improving



Root Cause Quality (Units 1 & 2)



Focus Going Forward

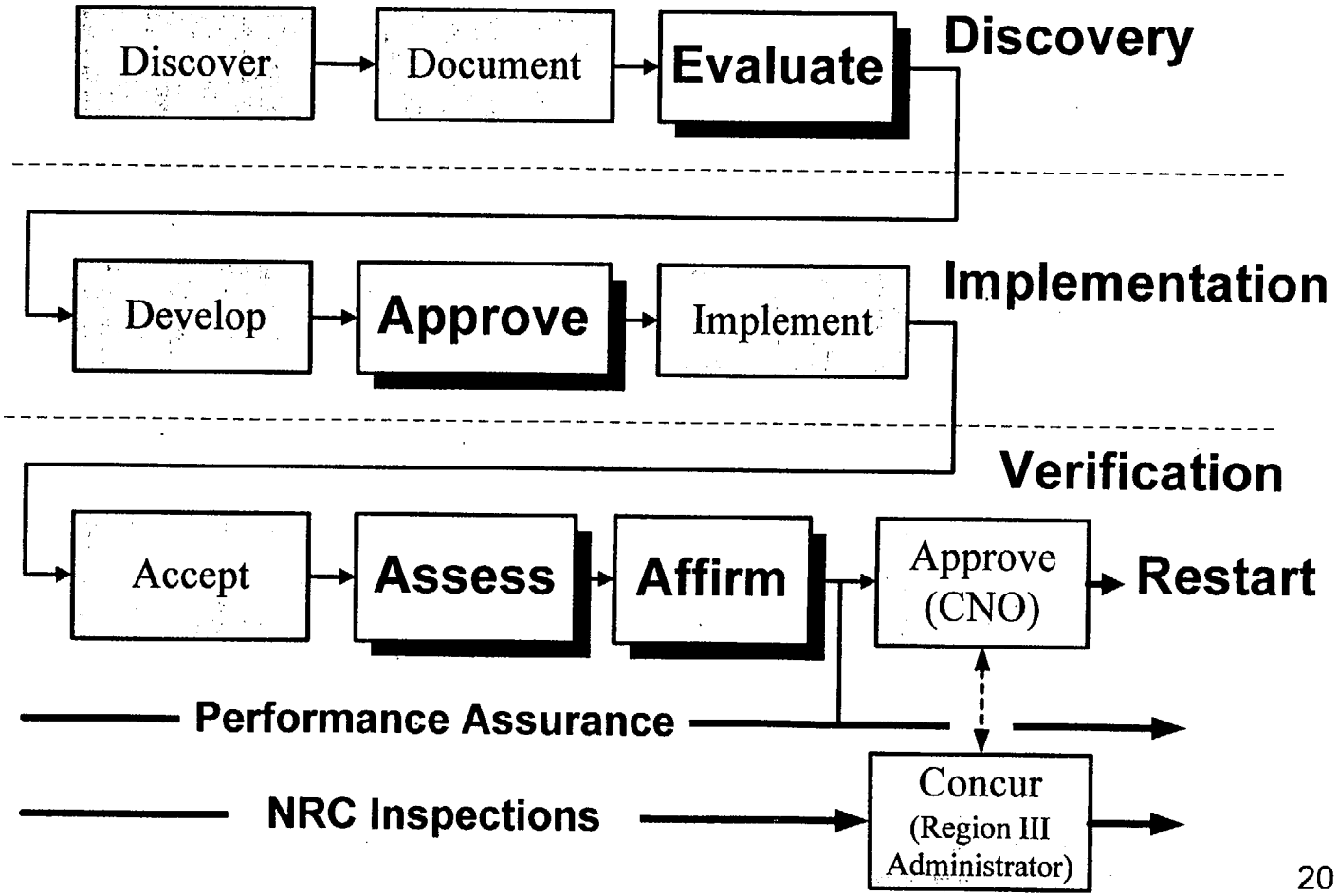
- ***Further Improve Product Quality***
- ***Enhance Organizational Capabilities***
- ***Decrease Reliance on Contractors***
- ***Transition to Plant Operations***

We Are Prepared
for the Challenges Ahead

Chris Bakken

Site Vice President

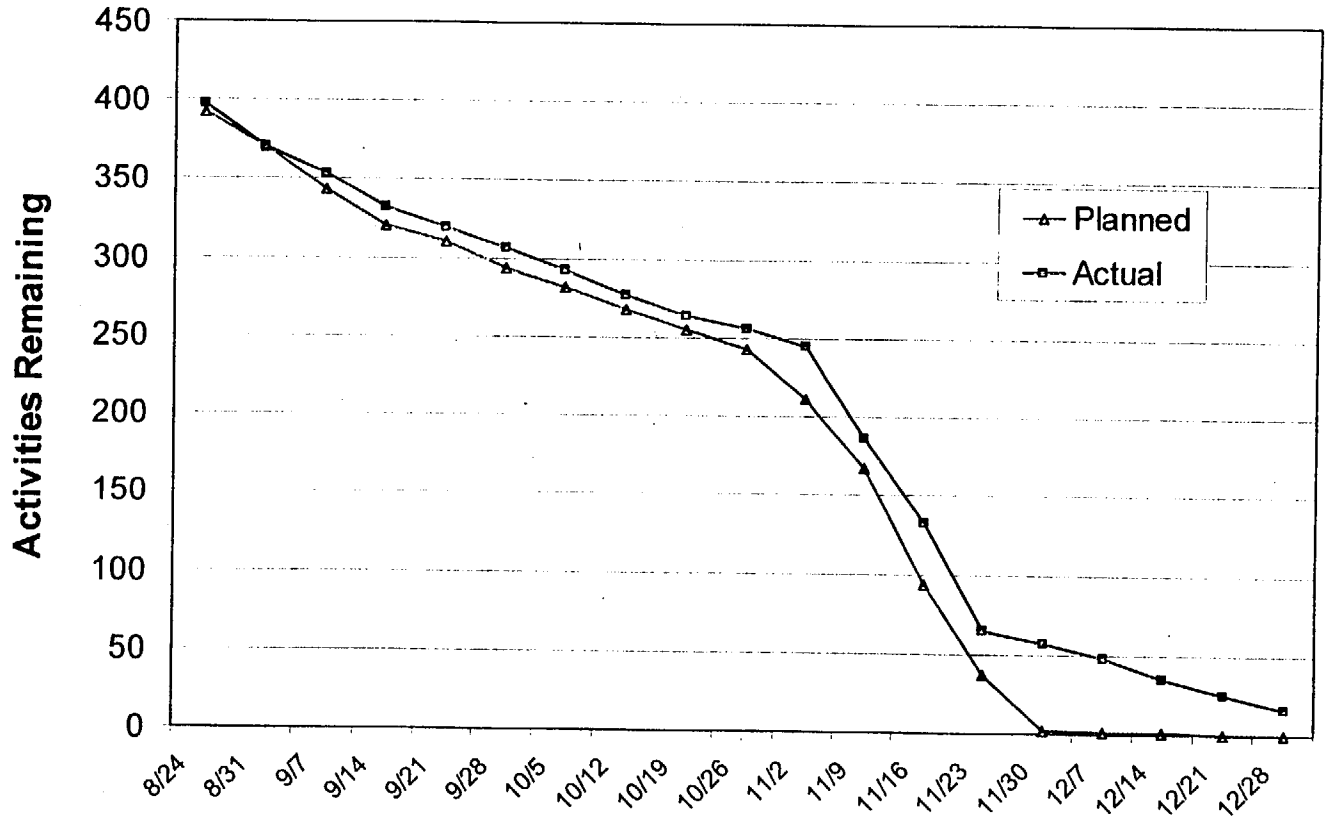
Oversight Integrated Into Process



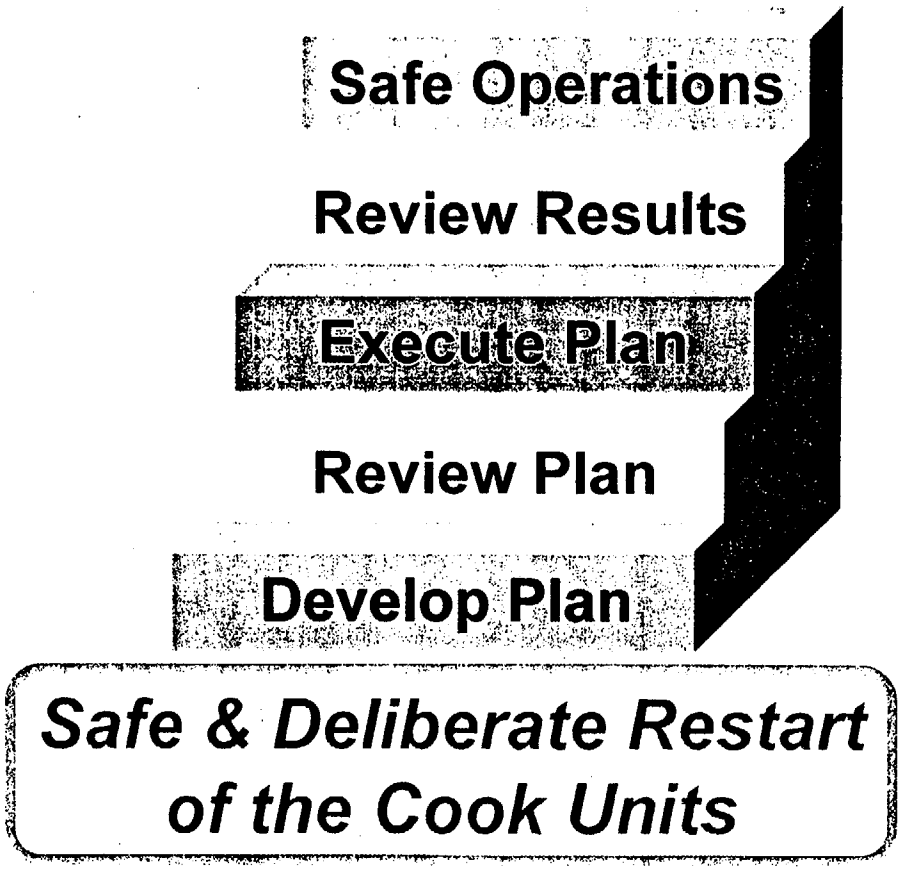
Transitioning From Restart to Operation

Engineering-Led		***Operations-Led***
Discover Problems		**Operate the Plant**
Develop Solutions	***Return to Power Operations***	**Maintain the Equipment**
Re-establish Margins & Bases		**Assess & Improve Safety & Reliability**
Promote Culture Change		**Enhance Teamwork**

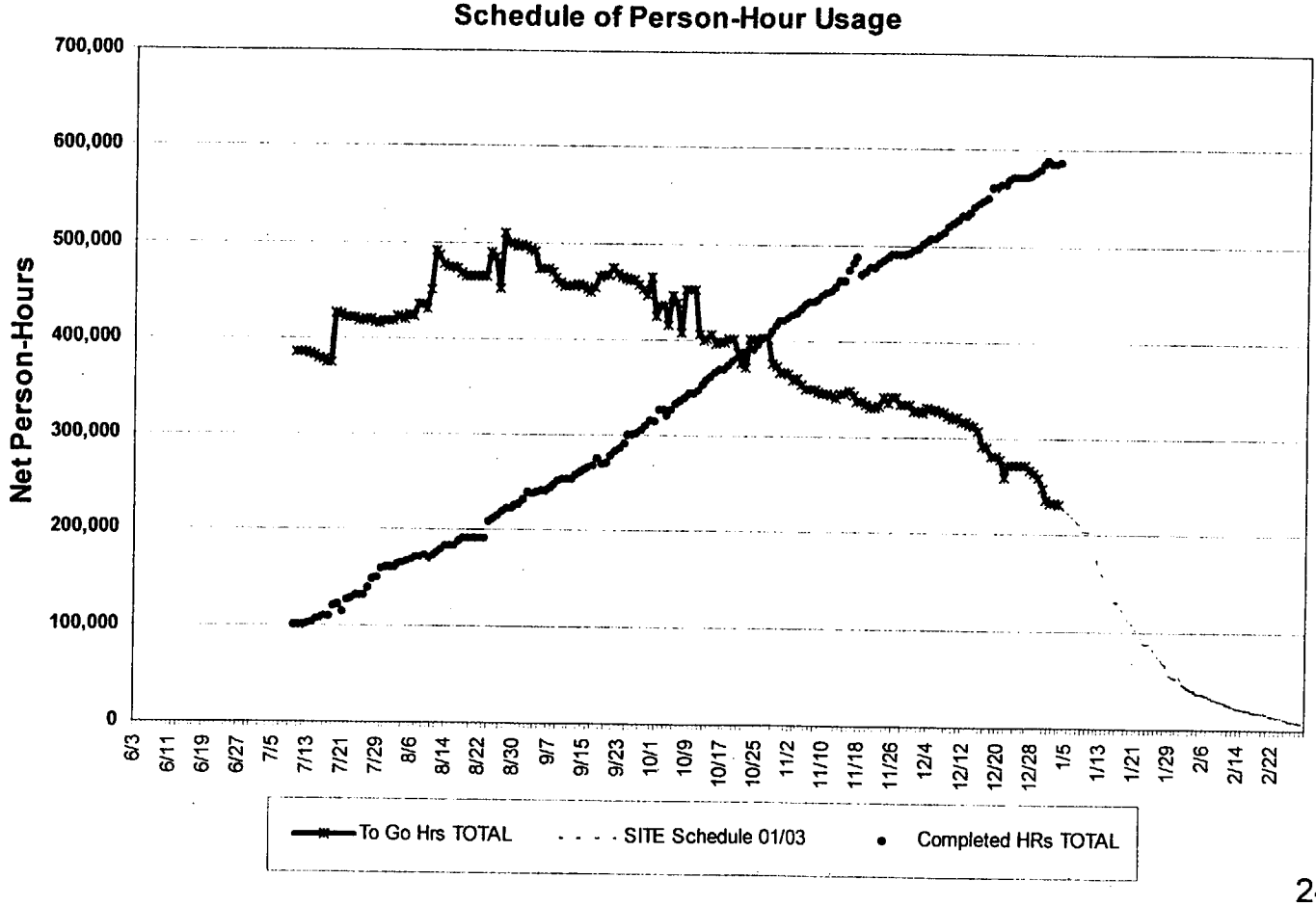
Emergency Procedure Upgrade Project (Unit 2 & Common)



Startup & Power Ascension Testing Program



Schedule Progress



Focus Going Forward

- ***Unit 2 / Unit 1***
- ***Human Performance***
- ***Control of Work***
- ***Backlogs***

We Are Prepared
for the Challenges Ahead

Bob Powers

Senior Vice President &
Chief Nuclear Officer

Summary

- ***We Understand the Past***
- ***We Know How to Find and Fix Our Problems***
- ***We Are Working Our Plan & Schedule***
- ***We Are Prepared for the Challenges Ahead***

We Are Taking the Time to Do the Job Right

Doing it right ...
Every step of the way.

COOK NUCLEAR PLANT

UNION OF
CONCERNED
SCIENTISTS

January 10, 2000

Chairman Richard Meserve
Commissioner Nils J. Diaz
Commissioner Greta J. Dicus
Commissioner Edward McGaffigan, Jr.
Commissioner Jeffrey S. Merrifield
United States Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: RESTART OF DONALD C. COOK NUCLEAR PLANT

Dear Chairman and Commissioners:

On June 2, 1998, I participated in the Commission briefing on the proposed restart of Millstone Unit 3. My presentation ended with these two conclusions:

- NU's future performance cannot be predicted, but it is known that the NRC staff lacks the ability to reliably shut down plants with regulatory performance problems.
- Millstone Unit 3 should not restart without that adequate protection standard being met.

There are many similarities between D C Cook Unit 2 today and the Millstone Unit 3 facility in June 1998. Both had been closed for more than two years while their owner made numerous corrections to the physical plant and to procedures. To UCS, the extent of these changes strongly suggests failure by the plant owners – and by the NRC – to have properly focused on safety.

There are also key differences. Based on evidence such as the orifices installed in the recirculation spray system piping which caused the almost immediate common-mode failure of the expansion bellows in all lines and the unexpectedly large number of Level 4 discrepancy reports, we had zero confidence that the NRC's Special Projects Office was doing an adequate job of ensuring Millstone was ready to restart. Based on evidence such as the addition of the Generic Letter 89-10 MOV program to the Manual Chapter 0350 scope, we have sufficient confidence that the NRC's Region III staff is doing an adequate job of determining when D C Cook is ready for restart. UCS provided additional commentary on the differences between Millstone and D C Cook in our letter of December 4, 1998.

The most important difference between June 1998 and today is the change in the NRC's regulatory oversight process. We opposed the Millstone restart because we felt that the NRC staff lacked the ability to take appropriate, timely actions for operating nuclear plants with performance problems. The revised reactor oversight process is precisely the type of "adequate protection standard" that we felt needed to be in place before Millstone Unit 3 was restarted.

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Cambridge Headquarters: Two Brattle Square • Cambridge MA 02238-9105 • 617-547-5552 • FAX: 617-864-9405
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The extensive work by the D C Cook and NRC staffs since the reactors shut down in September 1997 may suggest that the facility is ready to resume operation. Effective oversight by the NRC is absolutely necessary to protect the public in case these efforts have missed something or if everything is okay but safety performance declines after restart. We feel it is imperative that the revised reactor oversight process be applied to all operating nuclear plants as expeditiously as possible. It is the best protection available against safety threats whether they are posed by plant aging, by overly aggressive cost-cutting measures, by plant ownership changes, or by other means.

Sincerely,

David A. Lochbaum
Nuclear Safety Engineer
Union of Concerned Scientists

UNION OF
CONCERNED
SCIENTISTS

December 4, 1998

Chairman Shirley A. Jackson
Commissioner Nils J. Diaz
Commissioner Greta J. Dicus
Commissioner Edward McGaffigan, Jr.
Commissioner Jeffrey S. Merrifield
United States Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: NRC Regulatory Performance in the D C Cook Matter

Dear Chairman and Commissioners:

Thank you for the opportunity to comment during the November 30th Commission briefing on D C Cook. At the time, we had not finalized our perspectives on D C Cook so I was unable to accept the invitation. I am providing our comments, which were updated to address issues raised during the briefing.

We divide our D C Cook experience into two portions. The NRC's regulatory performance prior to mid-January 1998 was mostly bad although there were some positives. Since mid-January 1998, the regulatory performance has been satisfactory with one notable exception.

Background

We had not been monitoring conditions at D C Cook prior to September 1997. But we had been closely monitoring the NRC's architect/engineer inspections because we were interested in the adequacy of design bases information. Millstone demonstrated that configuration management problems had the potential for adversely affecting safety margins. Through the issuance of Information Notice 96-17 in March 1996 and the 50.54(f) letters in October 1996, the NRC communicated Millstone's design bases/configuration management problems to the nuclear industry with its expectations in this area.

The NRC complemented the 50.54(f) effort with the architect/engineer inspections. These inspections verified the 50.54(f) responses. In addition, they assessed the original designs.

These NRC actions were the appropriate response to the Millstone findings. A problem was identified at Millstone, but it was only one data point. Rather than simply correcting the known problems at Millstone, the NRC's actions provided the means to understand the extent of the industry's design bases problems.

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Pre-January 1998 Experience

D C Cook's shutdown due to problems identified during the NRC's architect engineer inspection attracted our attention. The NRC's Confirmatory Action Letter along with information in the NRC's Daily Event Reports indicated that there were serious problems in both of the high-risk safety systems examined by the NRC team. Some of these problems dated back to the plant's construction while others had been recently introduced.

There was some discussion during the November 30th briefing about these findings in light of D C Cook's prior SALP history. We never considered looking at the SALP history when we sought to put the findings in context. Instead, we reviewed the licensee's February 1997 response to the 50.54(f) letter. We learned that the licensee was in the middle of a design bases document (DBD) development effort. The DBDs for some systems had already been issued while several others were to be developed. According to the licensee, DBDs were not issued until a verification/validation effort provided reasonable assurance that their information accurately represented the as-built plant configuration.

The DBDs for the systems examined during the NRC's A/E inspection had been issued before February 1997. In our view, that fact eliminated any excuse for these systems having so many serious, undetected problems. The development, verification, and validation efforts for the DBDs on these two systems should have identified these problems. Had the DBDs for these systems not been completed, we would have given the licensee benefit of the doubt and assumed that many, if not all, of the problems would have been self-identified by that effort.

In our view, the CAL did two important things. First, it ensured that the specific hardware problems identified by the NRC team were corrected prior to restart. And second, it ensured that the programmatic deficiencies that caused the hardware problems were corrected prior to restart. We fully agreed that these steps were necessary.

However, we felt that another step was also warranted. The licensee's programmatic deficiencies, which were responsible for many of the problems identified during the A/E inspection, could have caused hardware problems in systems other than the two examined by the NRC. There was no evidence or other reason to suspect, yet alone believe, that the problems were confined to just these two systems. Furthermore, there was ample reason to believe that any problems would remain undetected. After all, the licensee's best self-assessment efforts had been plainly demonstrated to be less than adequate. Yet the NRC was not taking any steps to verify that the sixty-plus other safety systems were reasonably problem-free prior to restart.

The purpose of our 2.206 petition was to fill the hole in the NRC's CAL. We asked that the plant not be permitted to restart until there was reasonable assurance that there were undetected problems in other systems. We submitted the petition on October 9, 1997, because I had been informed by Mr. Jan Strasma of Region III and Mr. John Hickman of NRR-HQ that the licensee expected to restart D C Cook by late October 1997. I had also been told by Mr. Hickman that the A/E inspection report might not be issued until after restart. We felt compelled to submit the petition based on the available information. We requested a public hearing to present our concerns to the NRC staff.

Throughout October and November, the restart date repeatedly slipped a couple weeks at a time. By letter dated December 2, 1997, the licensee informed the NRC that the CAL items had been resolved and the plant was ready to restart. By letter dated December 9, 1997, the NRC acknowledged receiving our petition submitted two months earlier and indicated that it was under consideration.

During the first week of January 1998, I called Mr. John Hickman, who had been assigned as Petition Manager. He informed me about a upcoming NRC meeting with the licensee to review the CAL items and indicated that the NRC might lift the CAL shortly thereafter. Having heard nothing from the NRC regarding our petition other than the December 9th receipt acknowledgement, I asked Mr. Hickman about its status. He told me that the NRC had decided not to grant our request for a public hearing and planned to issue a Director's Decision after the plant restarted. I asked why the NRC had denied our petition. Mr. Hickman explained that the NRC staff had not yet rendered a decision on the petition, but would do so after restart. To us, deferring the decision until after restart was essentially denying the petition since we sought actions which could only be performed before restart.

We responded to this totally absurd NRC position by going to battle stations. We immediately initiated a media campaign to alert every newspaper, TV station, and radio station near the plant to the cavalier attitude being taken by the NRC staff. We also contacted activists and UCS members living near the plant and encouraged them to contact their state and local government officials about the problems at D C Cook.

After a few headlines and Congressional inquiries, the NRC staff reversed its decision and decided it could spare a few minutes to listen to our concerns. On January 12, 1998, I read a prepared statement[1] listing our concerns during a public meeting. This meeting marked the end of the first portion of our D C Cook experience. For us, the worst was over.

UCS submitted our petition on October 9, 1997, based on a thorough evaluation of information available at that time. To our dismay, the issues raised in our petition were virtually ignored by the NRC staff in their haste to get the CAL items closed out so the plant could be restarted. We feel this reflects a pervasive attitude by the NRC staff that safety concerns raised by the public, whether via allegations, 2.206 petitions, or questions, are merely distractions to be handled as time allows rather than as input which might have any consequence.

Post-January 1998 Experience

The second phase began on a positive note. NRC inspectors arrived at the D C Cook site within the next day or so to look into the ice condenser concerns. We did not raise these ice condenser concerns – we merely reminded the NRC staff about them. Mr. Curtis Overall had expressed these same concerns to the NRC Region II staff during 1996 and to the NRC Inspector General's office during March 1997. Mr. Overall met with me the day before going to the IG. The NRC Region II staff handled Mr. Overall's concerns by merely calling the licensees for the Watts Bar, Sequoyah, Catawba, and McGuire nuclear plants and asking if they had any ice condenser problems. This 'tele-regulating' was the extent of Region II's efforts to examine Mr. Overall's concerns.

NRC Region III handled the concerns in an entirely different manner. They sent inspectors to look at the D C Cook ice condensers. These inspectors contacted me, and then Mr. Overall, to ensure that they had a thorough understanding of the concerns. They confirmed suspected problems with the metal screws and identified other problems. The NRC staff invoked its Manual Chapter 0350 process for D C Cook in April 1998 after the licensee opted to melt out both ice condensers for inspections and repairs.

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[1] The prepared statement had been toned down – twice – by UCS management in Cambridge.

I have attended all of the D C Cook public meetings held in Rockville during 1998 and reviewed all of the NRC correspondence to the licensee this year. Based on this information, it is apparent that our role is to stay out of the way and let the NRC staff do its job. It is doing a very fine job.

The NRC staff's actions since mid-January 1998 are even more impressive when contrasted with the Millstone Unit 3 restart process. At D C Cook, the NRC staff has expanded the scope when warranted as evidenced by adding the Generic Letter 89-10 MOV issues to the restart list and by following up on the AFW system SSFI findings. At Millstone, the NRC staff was unwilling to expand the scope for any reason. At D C Cook, the NRC staff backed probing questions with rigorous onsite inspections. At Millstone, the NRC staff essentially asked 'true/false' questions and performed cursory inspections. At D C Cook, the NRC staff gave careful consideration to public input. At Millstone, the NRC staff dressed well for public meetings.

The Millstone Unit 3 and D C Cook situations are very similar. Both plants remained shut down for an extended period while numerous hardware and programmatic problems were corrected. The NRC staff implemented Manual Chapter 0350 in both cases. The same process yielded exactly opposite results. I cannot suggest a single change to improve the 0350 process for D C Cook and have confidence that the plant will not be restarted until it has the necessary safety margins. If Millstone Unit 3 had adequate safety margins at restart, it was in spite of the NRC staff, not because of them. I halfway believe that the Millstone Special Projects Office would have dismissed a report that the reactor head was fastened with Velcro with some lame excuse like, "well, are you aware of any reactor accident that has been caused by Velcro?"

The only fault that we can find with the NRC's regulatory performance for D C Cook since mid-January 1998 involves the proposed $500,000 civil penalty. As we pointed out during the August 1998 informal hearing on our petition, the NRC could have imposed a civil penalty of at least $4.627 billion. We did not advocate such a severe fine, but thought that a Millstone-sized fine was warranted. That D C Cook received the 'volume discount' did not surprise us because the NRC's current enforcement policy is extremely subjective and inconsistent. We call it the "Wheel of Misfortune."

Noteworthy Performances

During the November 13 1998, stakeholder meeting, several people commented on the talent and dedication of the NRC staff. UCS shares these views and would like to take this opportunity to identify what we consider to be stellar performance by NRC staff related to the D C Cook issues:

- Mr. John Thompson led the NRC's A/E inspection team. While the team found numerous serious problems, it was not like shooting fish in a barrel. The dead-end portions of the containment had eluded detection for nearly thirty years. It was a subtle finding of high safety significance. The other findings, such as the containment sump cover problem, were also very commendable catches. Mr. Thompson deserves credit for leading this team to such important findings.

- Mr. Edward Schweibinz participated in the fibrous material inspection and follow-up activities. During a public meeting in Rockville, Mr. Schweibinz resisted several attempts by the licensee to dismiss the extent and severity of the fibrous material problems based on half-truths and false promises. Mr. Schweibinz deserves credit for having prepared so well for this encounter.

- Mr. Melvin Holmberg participated in the ice condenser inspection and follow-up activities. During a Manual Chapter 0350 meeting in Rockville, Mr. Holmberg displayed a thorough understanding of

the design and licensing bases for the D C Cook ice condensers. During that meeting, both NRC and licensee staff deferred to Mr. Holmberg's knowledge of the subject. Mr. Holmberg deserves credit for having mastered this complex information and applying it so effectively.

- Mr. John Grobe chaired the Manual Chapter 0350 panel for D C Cook. During two public meetings in Rockville and the pre-decisional enforcement conference, Mr. Grobe repeatedly asked probing questions with substantive follow-ups. He insisted that the licensee show the NRC staff that things were okay and did not rely solely on the licensee's unsubstantiated positive responses. Mr. Grobe deserves credit for conducting the Manual Chapter 0350 process in a fair and effective manner.

- Mr. John Stang was the Petition Manager for our petition beginning in February 1998. Mr. Stang ensured that he fully understood the issues raised in our petition, its supplement, and related allegations. Mr. Stang notified me promptly of any developments regarding our petition. Mr. Stang deserves credit for very capable administration of our petition.

UCS realizes that there are many other individuals as capable and dedicated as these five gentlemen. At the risk of slighting others, we felt their performance merited recognition.

Unresolved Issues

UCS feels confident that D C Cook will be restart until the necessary safety margins have been restored. The bad news is that the following issues remain unresolved:

1. We cannot understand why D C Cook was shut down in September 1997. The reason stated for the shut down, reiterated at least twice during the November 30, 1998, Commission briefing, was that the dead-end compartment issue raised doubt about the plant's ability to cope with a small-break loss of coolant accident (LOCA). For a large-break LOCA, sufficient water inventory would be available. The risk factor appears comparable to that from the BWR suction strainer issue. Yet, no BWR had to shut down. The NRC allowed these BWRs to operate until modifications could be made at the next refueling outage. It seems either unnecessary for D C Cook to shut down or improper for the BWRs to continue operating. We believe that the only reason that D C Cook was shut down was because the NRC identified its problems while the BWR suction strainer problems were identified by the licensees. The NRC's charter is to protect the public – not the feelings or finances of the licensees.

2. We cannot understand why the NRC staff's reaction to the D C Cook findings did not address possible undetected hardware problems in the other sixty-plus safety systems. Hindsight shows that our call for an examination into these other systems was warranted. However, we feel that such an examination was warranted even if no other problems had been identified. The problems identified by the NRC A/E team were serious. The plant should not have been restarted without a determination if these were its only problems.

3. We cannot understand how the NRC staff could even think about deferring its decision on our petition until after restart. There's something profoundly wrong with the 2.206 process because safety concerns are not being addressed in good faith by the NRC staff. We sincerely feel, but will never be able to prove, that D C Cook would have restarted in early 1998 with its ice condenser broken had we not launched a media campaign. We still believe that the NRC staff evaluates safety issues based on their Neilson ratings instead of on their safety merits.

4. We cannot understand why the NRC's Manual Chapter 0350 process allows such widespread results as experienced at D C Cook and Millstone Unit 3. The D C Cook experience suggests that the process, when implemented properly, is effective. The Millstone experience suggests that the NRC lacks the ability to ensure this process is properly implemented.

5. We cannot understand why the NRC staff 'buried' safety concerns that Mr. Overall raised during 1996 and 1997. There's something profoundly wrong in Region II. We feel, but fortunately will never be able to prove, that the ice condenser concerns would still be buried if D C Cook were in Region II. Had the NRC Region II staff done the right thing in 1996, then the D C Cook and Catawba problems would have been identified and corrected before 1998.

UCS is not seeking a direct response on these unresolved issues. Instead, we respectfully request that you kept these issues in mind as you review the NRC staff's proposed changes to the inspection, enforcement, and assessment processes. I agree with Commissioner Diaz's comment that the enemy of good is better, but many of these issues can and should be corrected by good processes.

Sincerely,

David A. Lochbaum
Nuclear Safety Engineer
Union of Concerned Scientists

cc: Mr. John Thompson
Mr. Edward Schweibinz
Mr. Melvin Holmberg
Mr. John Grobe
Mr. John Stang

D.C. COOK RESTART OVERSIGHT

January 10, 2000

D.C. COOK RESTART OVERSIGHT

A. BRIEF OUTAGE HISTORY

B. ASSESSMENT OF D.C. COOK PROBLEM DISCOVERY

C. ASSESSMENT OF D.C. COOK CORRECTIVE ACTIONS

D. STATUS OF LICENSING ACTIVITIES

E. NRC RESTART ACTIONS

A. BRIEF OUTAGE HISTORY

- PLANT SHUTDOWN IN SEPTEMBER 1997
- NRC IMPLEMENTS MC 0350 RESTART OVERSIGHT PROCESS
- 1998 DISCOVERY EFFORTS
- RESTART PLAN MODIFIED IN MARCH 1999

B. ASSESSMENT OF D.C. COOK PROBLEM DISCOVERY

- D.C. COOK REASSESSES SYSTEMS, PROGRAMS AND FUNCTIONS
- NRC CONDUCTS CONFIRMATORY INSPECTIONS

C. ASSESSMENT OF D.C. COOK CORRECTIVE ACTIONS

- CASE SPECIFIC CHECKLIST RESTART ISSUE RESOLUTION
- CONFIRMATORY ACTION LETTER STATUS

D. STATUS OF LICENSING ACTIVITIES

- LICENSING ISSUES RESOLUTION
- REMAINING LICENSING ACTIONS FOR RESTART

E. NRC RESTART ACTIONS

- REMAINING INSPECTIONS FOR RESTART
- RESTART APPROVAL PROCESS
- POST-RESTART OVERSIGHT
- TRANSITION TO REVISED INSPECTION AND ASSESSMENT PROCESS