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NUCLEAR REGULATORY COMMISSION

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D.C. COOK NUCLEAR POWER PLANT
PUBLIC MEETING

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1 UNITED STATES OF AMERICA

2 NUCLEAR REGULATORY COMMISSION

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4 BRIEFING ON

5 D.C. COOK NUCLEAR POWER PLANT

6 ***

7 PUBLIC MEETING

8

9 Nuclear Regulatory Commission

10 Commission Hearing Room

11 11555 Rockville Pike

12 Rockville, Maryland

13 Monday, November 30, 1998

14

15 The Commission met in open session, pursuant to

16 notice, at 2:06 p.m., the Honorable SHIRLEY A. JACKSON,

17 Chairman of the Commission, presiding.

18

19 COMMISSIONERS PRESENT:

20 SHIRLEY A. JACKSON, Chairman of the Commission

21 EDWARD McGAFFIGAN, JR., Member of the Commission

22 GRETA J. DICUS, Member of the Commission

23 JEFFREY S. MERRIFIELD, Member of the Commission

24

25

1 STAFF AND PRESENTER SEATED AT COMMISSION TABLE:
2 KAREN D. CYR, General Counsel
3 ANNETTE L. VIETTI-COOK, Assistant Secretary
4 WILLIAM D. TRAVERS, NRC
5 FRANK J. MIRAGLIA, NRC
6 JAMES L. CALDWELL, NRC
7 JOHN A. GROBE, NRC
8 CYNTHIA A. CARPENTER, NRC
9 E. LINN DRAPER, Chairman, President, and CEO,
10 American Electric Power
11 ROBERT P. POWERS, Senior Vice President, Nuclear
12 Generation
13 JOHN R. SAMPSON, Site Vice President
14 SUSAN TOMASKY, AEP General Counsel
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1 P R O C E E D I N G S

2 [2:06 p.m.]

3 CHAIRMAN JACKSON: Good afternoon. Today we're
4 meeting to discuss issues relating to the D.C. Cook Nuclear
5 Power Plant. Both units of the facility have been shut down
6 since September 1997, when as a result of NRC inspections in
7 the engineering area it became unclear whether emergency
8 core cooling systems could perform their intended functions
9 in the event of a design basis accident.

10 Since that time additional findings by both the
11 NRC and the licensee have made it clear that deficiencies
12 extended to a broader scope of safety-related systems,
13 structures, and components. Individual items of concern
14 included foreign material in the containment which could
15 have adversely impacted the ability of the unit's emergency
16 core cooling system sumps to operate properly, problems in
17 the unit's ice condensers which called into question the
18 ability to maintain postaccident pressures below design
19 values, and design and maintenance failures that affected
20 the unit's hydrogen mitigation and ignition, residual heat
21 removal, containment spray, containment spray additive, and
22 auxiliary feedwater systems.

23 The combined effect of these problems led the NRC
24 staff to state that the conditions -- and I'm quoting --
25 resulted in a lack of reasonable assurance that following a

1 design basis LOCA, that is, a large-break LOCA, the ECCS and
2 containment would have functioned.
3 It is rare that NRC makes such a -- the staff
4 makes such a sweeping statement about both the mitigation
5 systems and a barrier to fission product release at an
6 individual facility for a common period of time, and so the
7 conditions uncovered at D.C. Cook underscore the importance
8 of of course implementing, maintaining, and understanding
9 the design bases of the facility. But the real thing is
10 that they illustrate the silent nature, and I think that's
11 what probably surprised all of us, of certain design basis
12 inadequacies.
13 Now these problems did not affect the facility's
14 ability to produce electricity. In fact, the licensee has
15 been considered a relatively good performer, and they didn't
16 make themselves known through deteriorating performance
17 indicators. In fact, left uncorrected, the impact of the
18 existence of these problems probably would not have been
19 affected unless the facility experienced an accident, and it
20 was performing well, so one has to assume that it would not
21 have experienced an accident. Nonetheless, they're meant to
22 be designed to withstand such a potential situation.
23 So we're going to hear today from the licensee and
24 the staff on the design basis issues that have been
25 identified thus far, of any additional issues of concern,

1 but particularly the licensee's corrective action plans and
2 the NRC plans for restart oversight. And I know that there
3 was some feeling that perhaps this may not have been the
4 most opportune time for you to come in, but I am interested
5 in the thoughts of you, the licensee, our staff, as well as
6 my Commission colleagues from the different points of view
7 what might have been done to identify the conditions sooner
8 so they wouldn't have been the surprises they were to
9 everyone.
10 Certainly we had some opportunity from planned
11 inspections relative to NRC's 50.54(f) letter that were
12 focused on the areas under consideration before the extent
13 of the conditions at Cook were fully known, so we look
14 forward to hearing the presentations of the American
15 Electric Power executives and the NRC staff, and copies of
16 the presentation are available at the entrances to the
17 meeting.
18 And let me just repeat, we're here to try to
19 understand how we got to where we are. There is a restart
20 plan. The staff is working through that. You're working
21 through your own restart issues both relative to that plan,
22 but your own. And so this is not here having to do with
23 voting on or determining when D.C. Cook would restart or
24 not, but understand things within the design basis context.
25 So unless my Commission colleagues have any

1 opening comments, Dr. Draper, please proceed.

2 DR. DRAPER: Thank you, Chairman Jackson, and

3 thank you, Commissioners, for taking time with us today.

4 I'm Linn Draper, chairman of American Electric

5 Power, and with me today are Bob Powers, our chief nuclear

6 officer, John Sampson, our site vice president, Susan

7 Tomasky, our general counsel.

8 As chairman of AEP and as a nuclear engineer with

9 some three decades of experience in the nuclear industry, I

10 want to emphasize that AEP understands the seriousness of

11 the issues that resulted in our making the difficult

12 decision to shut down the D.C. Cook units last September.

13 Corporately and personally we're pained by the necessity of

14 an extended outage. It was necessary to make major

15 improvements to our systems, components, material condition,

16 processes, personnel training, and organizational behaviors.

17 Upon completion, we'll be ready for restart and for

18 demonstrably safe, reliable, and efficient operation.

19 D.C. Cook Unit 1 has been operating since 1975,

20 but 1998 was the first time that the plant was the subject

21 of discussion at an NRC senior managers meeting. So as you

22 suggest, it was something of a surprise. Nevertheless the

23 NRC and our own staff assessments have identified

24 deficiencies not only in the material condition of the ice

25 condenser, but also in engineering programs, surveillance

1 programs, corrective action programs, and design basis
2 control. All of these need to be corrected to ensure a
3 level of management effectiveness that satisfies our own
4 very high standards, as well as those of the Nuclear
5 Regulatory Commission.
6 It's clear to me that one of the factors that led
7 to our present situation was our many years of successful
8 operation that led us to be insular and somewhat
9 overconfident. The Cook plant had generally received good
10 SALP ratings from the NRC, strong ratings from INPO. With
11 the harsh glare of hindsight we now understand that we did
12 not seek to apply the lessons learned from other industry
13 experiences at D.C. Cook as aggressively as we could have.
14 In retrospect we understand that we did not identify our own
15 problems and were not as aggressive in correcting the
16 problems we did identify as we should have been.
17 Once we confronted the magnitude and nature of the
18 ice condenser issues we had only one choice. That was to
19 melt the ice, repair the ice condenser to return it to its
20 original design. This became the critical-path item. In
21 parallel, we are revamping surveillance programs, corrective
22 action programs, and other areas in need of improvement.
23 In particular we are working hard to improve
24 engineering performance, and Bob Powers will describe that
25 effort.

1 We also made significant changes to the D.C. Cook
2 management team. I promoted John Sampson to site vice
3 president and identified him as a major part of the solution
4 to our problems. I also undertook an extensive search for a
5 chief nuclear officer who could lead us through the restart
6 effort and ensure in the future the highest standards of
7 performance are met. I'm confident that Bob Powers has the
8 right stuff to provide the leadership needed to accomplish
9 our ultimate objective of turning D.C. Cook into a
10 world-class-performing nuclear plant.
11 We've also made many changes in line managers at
12 Cook. We've retained the very talented Cook managers and
13 employees who display the right performance to be an
14 integral part of the improvement program, and who retain our
15 institutional memory. I believe that our management team
16 provides the appropriate mix of talent, safety
17 consciousness, and leadership. They have AEP's full
18 corporate support and commitment of the resources necessary
19 to do the job right. Last year we established an
20 independent safety review group at Cook to provide a
21 third-party assessment of site activities to the chief
22 nuclear officer. We are broadening the charter of that
23 group and directing that the chair of the group periodically
24 provide me an independent assessment as well.
25 The last year has been very expensive for AEP, and

1 we have lost the entire output of the Cook plant. We have
2 spent considerable additional resources to rebuild the ice
3 condensers and make other material and process changes.
4 We're confident, however, that the investment in D.C. Cook
5 over the lengthy outage will result in a safer, more
6 reliable, and efficient operating plant.
7 We understand that excellence in nuclear plant
8 performance will return economic dividends to AEP in
9 achieving a higher capacity factor, lower operating and
10 maintenance costs, and shorter refueling and maintenance
11 outages. We look forward to D.C. Cook's resumption of its
12 critical role in meeting the electric supply demand in the
13 Midwest.
14 AEP is committed to nuclear power, as indicated by
15 the continued investment in D.C. Cook and the acquisition of
16 a 25-percent interest in the South Texas Project with the
17 pending merger with Central and Southwest. After the
18 merger, I look forward to establishing a close, cooperative
19 arrangement with STP for cross-fertilization of ideas,
20 processes, people, and experiences with D.C. Cook. Nuclear
21 power will be a long-term significant component of the AEP
22 generating mix.
23 If there are not questions, I will ask Bob Powers
24 to discuss his assessment of the problems and progress being
25 made at the Cook plant and his vision for the future. Bob

1 knows from firsthand experience what it's like to operate a
2 superior-performing nuclear plant, and he's charged with
3 accomplishing superior performance at Cook. I then ask John
4 Sampson to describe the restart plan and the strategies and
5 schedule for resolving all of the 0350 checklist items, ice
6 condenser repair and upgrades, and other restart items. And
7 I've also asked him to share his own perspective on the
8 changes in the Cook organization in behavior over the last
9 14 months.
10 But before I turn it to Bob, I'd be certainly
11 happy to respond to questions.
12 COMMISSIONER McGAFFIGAN: You mentioned getting
13 good SALP scores, good INPO scores, et cetera, but with the
14 benefit of hindsight as opposed to foresight, is there any
15 way that these issues could have been foreseen and dealt
16 with in a less drastic fashion if they had been foreseen or
17 was it inevitable that you were going to have to rebuild the
18 ice condensers once this was discovered and you were
19 inevitably going to have a long outage at that point in any
20 case and it was just a matter of discovering it?
21 Do you have any thoughts as to what assessment
22 system or inspection system, either yours or ours or INPO's
23 or whatever, might have allowed this to be less of a crisis?
24 DR. DRAPER: Well, there was certainly ample
25 opportunity for us at the plant and for NRC and INPO to

1 address these issues if they had come to the fore. I think
2 the fact is that performance standards are rising, both our
3 own and yours.
4 We are trying to do things better. It is clear
5 that had these deficiencies in the ice condenser been caught
6 very early one that it could have been repaired on a
7 piecemeal basis, but the fact is that much of the ice
8 condenser had not been examined in detail since the plant
9 started some 20 years ago.
10 It is clear that some of the deficiencies that
11 were present were present from the construction period, so
12 it certainly was not impossible if people had been smarter
13 and looking more carefully as we now are at all the
14 engineered systems. Things could have been unearthed, but I
15 believe that given where we are in time, there would not
16 have been an opportunity in recent history to do much other
17 than a complete repair of the ice condenser.
18 CHAIRMAN JACKSON: Dr. Draper, did the NRC's 10
19 CFR 50.54(f) letter play any role at all in helping you or
20 us to uncover or just begin to think about any of these
21 issues?
22 DR. DRAPER: If I may, let me ask John to respond
23 to that question.
24 MR. SAMPSON: There were some items -- when we
25 responded to 50.54(f) --

1 CHAIRMAN JACKSON: -- 54(f) --

2 MR. SAMPSON: I can say it -- 54(f).

3 CHAIRMAN JACKSON: I know it takes practice.

4 MR. SAMPSON: Especially if you try to say it too
5 fast, but there were some things that we found in response
6 to actions that we were taking in response to the 50.54(f)
7 letter and clearly from an operating experience standpoint
8 and looking with some of the other utilities were doing, we
9 could have, you know, followed up on some of those more
10 aggressively, but, you know, where we are now and looking at
11 our understanding of the design and licensing basis, we have
12 a great opportunity to thoroughly look through the plant and
13 make sure that there aren't deviations from the design basis
14 that lead to operability or functionality concerns.

15 CHAIRMAN JACKSON: Right -- it's that connection,
16 actually --

17 MR. SAMPSON: That's correct.

18 CHAIRMAN JACKSON: -- that is the important one.
19 Right. Okay.

20 MR. POWERS: Good afternoon.

21 CHAIRMAN JACKSON: Good afternoon.

22 MR. POWERS: Let me start with a few personal
23 notes that I think will be helpful in providing some context
24 from my other comments this afternoon.

25 First of all, I am a relatively new member of the

1 AEP team. I joined D.C. Cook in August of this past year
2 and prior to that have spent the last 16 or 17 years with
3 Pacific Gas & Electric Company's Diablo Canyon plant, so
4 it's with that perspective that I offer my comments this
5 afternoon.
6 I have organized my thoughts this afternoon to
7 four topics. Since I do have a new and relatively fresh
8 perspective, I thought it would be useful to provide my
9 initial assessment of Cook on coming to the site this past
10 August. I will follow that discussion with a more detailed
11 description of what we are going to do to address our need
12 to improve management effectiveness and resolve engineering
13 issues.
14 These are two key topics that have stood out --
15 stand out from my assessment of the D.C. Cook plant. These
16 issues, resolving these issues, will be key to our restart
17 and beyond, and then finally I would like to share my vision
18 for operating excellence at D.C. Cook in the years to come.
19 Following my presentation, I will ask John Sampson
20 to brief you on our restart plan and the progress we have
21 made to date. Let me begin with my assessment of the Cook
22 organization.
23 This slide provides a snapshot of the Cook
24 organization as I found it when I joined the team in August.
25 The units had been shut down since September of 1997, 11

1 months. This was having an impact on our people. They were
2 tired. They were frustrated.
3 I found a plant with a historic cyclic
4 performance. Some cycles went fine, good operating capacity
5 factor. I found other cycles that were not quite so good.
6 There was cyclical performance in the duration of outages.
7 There was cyclical performance in the area of INPO ratings.
8 There was cyclical performance in the area of SALP
9 performance as well -- and there was some cyclical
10 performance in the area of human performance.
11 I found an organization that had an insular
12 perspective -- either benchmarking that was performed was
13 not applied well, and in some cases I found situations where
14 benchmarking was not looked at as a tool to improve
15 performance.
16 I found an organization that had a struggling
17 engineering department, particularly with regard to the
18 understanding and maintenance of the design basis.
19 I found a plant that had a large backlog of
20 drawings, condition reports, and a moderate backlog of
21 maintenance activities.
22 CHAIRMAN JACKSON: Let me ask you two questions.
23 The backlog of drawings and condition reports, was
24 that a result of resource limitations or was it an issue
25 related to prioritization?

1 MR. POWERS: More the latter than the former.
2 What I found was an organization that was very good at doing
3 an initial assessment of impact of an issue and then binning
4 it and then not having the infrastructure in place to make
5 sure that once it was placed in a backlog that there would
6 be results effected to actually work the item off once it
7 was initially assessed.
8 Initially my concern was had even an initial
9 assessment of potential impact been performed on these
10 backlog items, and I was pleasantly surprised that there was
11 an initial assessment, but the rigor and the discipline to
12 go to work on that backlog and methodically work it down was
13 not in place.
14 CHAIRMAN JACKSON: So the issue had to do with the
15 follow-through?
16 MR. POWERS: Follow-up, follow-through, the
17 scheduling, the disciplines in making sure that -- in fact,
18 putting things in a backlog is fine if it is simply a
19 prioritization effort, but it departs from being fine if it
20 stays there and continues to grow and grow and grow, because
21 then all you are doing is simply not working on the problem.
22 CHAIRMAN JACKSON: Yes -- Part B -- or is that on
23 Part A?
24 COMMISSIONER DICUS: No, it's on Part A.
25 Was that a resource problem then or was it just

1 not done, the backlogs?

2 MR. POWERS: What I would say is principally it is

3 not a resource problem and Cook is staffed, putting aside

4 the restart effort, at about 1100 permanent employees, which

5 is a good staffing level for a two-unit PWR, so staffing

6 isn't really the issue here.

7 It's an issue of discipline and rigor to realize

8 that the job is not complete until the item is taken off the

9 books and that the physical work or the paperwork or the

10 procedure, whatever needs to be done, is complete.

11 CHAIRMAN JACKSON: Let me defer to my Commission

12 colleague.

13 COMMISSIONER MERRIFIELD: Thank you.

14 How much of that was a structural problem? One of

15 the things that the NRC found was obviously the engineering

16 problems which you have pointed out in the last slide.

17 AEP is its own architect engineer for the

18 facility. Does that structure -- that is somewhat unusual I

19 am told in that many other facilities utilize an outside

20 engineer for many of those activities -- did that play into

21 it at all in terms of your analysis?

22 MR. POWERS: Well, I can speak with some

23 experience since Pacific Gas & Electric was its own A&E as

24 well, and I would have to tell you that there are both

25 strengths and challenges to being in that position.

1 I think one of the strengths is that you can have
2 the best understanding of your design basis possible if your
3 architect-engineer activities were in-house. I think the
4 challenge, however, goes back to what Dr. Draper talked
5 about in that I have found that at both PG&E and to some
6 extent at AEP that there can be some insularity that results
7 from being your own AE and you tend to -- you have designed
8 it, you have constructed it, and you get comfortable with
9 that perspective and I think you have got to continue to
10 work at breaking down that potential parochialism that comes
11 in --
12 COMMISSIONER MERRIFIELD: I guess my thought then
13 is, and you will probably go into this a little later on,
14 but I am particularly curious as to how you have gone about
15 changing your structure in order to avoid that in the
16 future?
17 MR. POWERS: I will go into it in some more
18 detail, but let me answer your question directly at this
19 point by saying in the short term it's by providing a third
20 party perspective to help teach the organization and take
21 advantage of a perspective that comes from outside the
22 organization.
23 Over time we'll learn discipline, we'll learn the
24 skill set that is required to do that on our own, but in the
25 short term it requires an infusion of outside perspective.

1 CHAIRMAN JACKSON: How did Cook respond to the NRC
2 50.54(f) letter on design basis issues?
3 MR. POWERS: I am probably not in the best
4 position since I have been here -- I would prefer to
5 describe it generally.
6 CHAIRMAN JACKSON: Okay. You want to describe it
7 generally now?
8 MR. SAMPSON: In general, we describe the process
9 as programs required to know what the design and licensing
10 basis were -- was -- and what was done to protect them, and
11 our efforts now are focused on making sure that those
12 processes and programs do in fact reflect the actual design
13 and licensing basis and that the processes and programs that
14 we described in that 50.54(f) letter in fact are healthy for
15 us to go forward from where we are today.
16 CHAIRMAN JACKSON: Okay. Did you feel that it
17 gave you or suggested enough focus on operability issues?
18 Design basis is design basis, but the issue has to do with
19 systems being able to perform their intended functions, et
20 cetera, et cetera.
21 MR. SAMPSON: That is correct.
22 We tried to put a lot of effort into looking for
23 specific operability concerns today, and our lessons learned
24 from this AE shutdown period was a lack of understanding of
25 what the complete design and licensing basis was and the

1 rigor to which we were implementing it in the plant, and
2 that is the great lesson learned for us.
3 MR. POWERS: I have described some of the items
4 that were in need of repair and improvement at Cook. I also
5 should point out, on the other hand, there were some very
6 good things that I found. I found a core group of capable
7 and dedicated managers and employees who have an obvious
8 pride in their facility and demonstrate that.
9 I found a comprehensive restart plant that, if
10 executed and implemented appropriately, would allow for the
11 identification of issues and problems and their quick and
12 proper response.
13 I found a good overall material condition at the
14 plant. Now, this is somewhat enigmatic, and it was
15 enigmatic to me, given the conditions in the ice condenser
16 that have been found, but I would be pleased and proud to
17 have any of the members of the Commission come and tour the
18 Cook facility. It is in good material shape.
19 And I found a corporate organization in AEP that
20 was very supportive and provided me the commitment, and the
21 employees at the plant the commitment, to do this restart
22 and do it correctly. So, those were some of the good items
23 I found.
24 CHAIRMAN JACKSON: Did you have to infuse a lot of
25 additional resources, either in terms of bodies -- I won't

1 even deal with the money -- just in terms of bodies?

2 MR. POWERS: Yes. The physical work that we are

3 doing in the ice condenser, on its own, represents a need to

4 employ about 500 people.

5 CHAIRMAN JACKSON: Beyond your normal complement?

6 MR. POWERS: Above the normal complement. And

7 then, in addition to that, about another 500 people in

8 supporting engineering staff, quality assurance and the

9 like. So there's about a thousand -- an increment of a

10 thousand additional people on site right now.

11 COMMISSIONER MERRIFIELD: You mentioned you felt

12 that it was a good overall material condition of the plant.

13 How does that -- doesn't that come into conflict to a

14 certain extent with the debris that was found inside

15 containment? That was a significant problem that it would

16 seem to me would indicate some material problems.

17 MR. POWERS: As I said, it was enigmatic, from my

18 perspective, as well. But I think there's answers to your

19 question to help explain a sort of differentiated

20 performance. I think -- and the ice condenser is an example

21 -- one of the lessons we have learned is that a lot of work

22 that was done to weigh the ice baskets and repair the ice

23 baskets in the past were done by contract labor.

24 Now, these folks are very capable of performing

25 good quality work if provided the right training and the

1 right supervision and the right guidance. And one of the
2 things we learned is that, quite frankly, there was an
3 opportunity to improve that area of oversight of the work
4 force in the ice condenser.
5 Other portions of the plant have been maintained
6 by the maintenance organization with an attendant increased
7 or higher level of oversight by management. So I think that
8 helps explain some of the enigma.
9 COMMISSIONER MERRIFIELD: But the debris problem
10 inside containment, was that resulting from outside
11 contractors or from individuals employed by AES?
12 MR. POWERS: Well, the debris in the ice
13 condenser, again, has accumulated over the years of
14 operation and maintenance of the ice condenser, and, in
15 large measure, the maintenance of the ice condenser was
16 performed by contract workers. So, again, I think the
17 lesson learned for us is the oversight and management of our
18 work regardless of what specific discipline is doing it. It
19 is our plant, it has to be maintained and operated to our
20 standards, and we need to make sure that the management
21 structure is in place to assure that our standards are
22 achieved.
23 CHAIRMAN JACKSON: Okay.
24 MR. POWERS: Well, this is a certainly a mixed
25 assessment that I have presented to you, both things that

1 are in need of improvement and things that I can build on
2 and are working well. But what was important to me,
3 personally, was to use the information from this assessment
4 that I have described to focus my own activities to help
5 improve D.C. Cook, and I have done that.
6 And, as a result, I have established three key
7 focus areas. First, I am working very hard to change and
8 improve station standards for accountability and the quality
9 of work.
10 Secondly, I am working very hard to have every
11 Cook employee embrace self-assessment and continuous
12 improvement as part of our work culture. Now, these two
13 items combine to what I call issues needing to improve the
14 area of management effectiveness.
15 The third area of focus I have established for
16 myself is to apply a specific, concerted effort in
17 reinvigorating and revamping our engineering department.
18 Now, my basic strategy to enhance management
19 effectiveness to date has included staffing changes in key
20 positions and the establishment of new expectations for the
21 Cook staff, training the staff on those expectations, and
22 reinforcing the expectations.
23 As I mentioned, there have been staffing changes
24 at Cook. I would like to talk a little bit about two
25 specifically. I am pleased to report that in the last two

1 weeks, we have hired Mr. Michael Rencheck as a new VP of
2 nuclear engineering at the Cook plant. Now, Mike not only
3 brings significant engineering experience to Cook, but he
4 also has substantial experience in the restart of the units
5 at both Salem and Crystal River. I look forward to Mike's
6 expertise being applied to the project at Cook as well.
7 I also had the opportunity to bring in --
8 CHAIRMAN JACKSON: He left them in bad shape.
9 MR. POWERS: Excuse me.
10 CHAIRMAN JACKSON: He left them in bad shape.
11 MR. POWERS: No, absolutely not.
12 [Laughter.]
13 MR. POWERS: And, if I recall, Mr. Rencheck came
14 from other locations before he went to Crystal River.
15 I have also had the pleasure of bringing in Mr.
16 Rick Eckstein on a reverse loanee assignment from INPO as
17 the acting chief nuclear engineer until I permanently fill
18 the position. Now, Rick brings with him a wealth of
19 information and knowledge on best engineering practices from
20 his experience at INPO. I am also pleased to report that
21 Rick will be able to be with us another year in a key role
22 in the engineering organization to help in our restart and
23 our efforts beyond restart. And there have been other
24 changes in the organization, as well.
25 Now, with these personnel changes, I have tried to

1 keep things in balance and not throw the baby out with the
2 bath water. We are retraining and retooling the management
3 talent that I indicated I found to be present at Cook. To
4 help in that retraining and retooling, we have conducted a
5 series of three crossroad workshops to date, and we have
6 exposed the staff to the behaviors needed to achieve
7 superior performance and sustain that. Now, these are skill
8 sets like planning, monitoring and holding themselves and
9 their staffs accountable for results.
10 We have been successful in passing the message on
11 down to the troops, and I am pleased to say I am seeing some
12 improvement. I can report some improvement in the area of
13 work control, schedule adherence, backlog reduction, and the
14 ability to apply critical self-assessment to improvement in
15 the organization.
16 Now, I am encouraged by these results, but I am
17 not ready to declare victory yet. I still see, in many
18 cases, more good intention than results, and that needs to
19 change.
20 Now, the same wisdom of focusing on results holds
21 for me as well. And before I present the plant as being
22 ready for restart to Dr. Draper or to the NRC, I will have
23 made sure that we have completed the activities in our
24 restart plan. I will make sure that the plant is ready to
25 operate safely, reliably and efficiently. I will ensure

1 that we have the right people, the right processes, and the
2 right procedures. And I will ensure that we will be able to
3 identify our own problems and resolve them quickly.
4 As John Sampson will describe, we are using our
5 restart plan to do this. We are measuring our results, we
6 are calibrating and checking as we go. In many areas, we
7 are making good progress, and John will speak to that. But
8 I do want to discuss an area of major challenge, and that is
9 in bounding the engineering issues at Cook and strengthening
10 our engineering organization.
11 Now, this slide visually depicts some of the key
12 engineering issues that have been or will be addressed as
13 part of the Cook shutdown. I won't go over each and every
14 item, but, leave it to say, our 50.59 program is being
15 reviewed. We are looking at our calculation basis for
16 operation of the plant. Plant procedures are being revised
17 and reinvigorated. Our design and licensing basis is being
18 scrubbed. Our FSAR is being updated. We are looking at
19 Generic Letter 89-10 on our motor operated valves, and a
20 variety of other engineering programs are being reviewed and
21 improved.
22 CHAIRMAN JACKSON: Were there no performance
23 indicators that would have shown up in these -- shown some
24 weaknesses in these areas?
25 MR. POWERS: That is a good question, and I would

1 say one of the lessons that we have learned out of the
2 shutdown is that there was not the diversity or breadth of
3 performance indicators at Cook prior to this shutdown to
4 help indicate where there might have been some early
5 detectable signs of performance problems in these areas.
6 I think, coupled with the observation I made about
7 benchmarking and the organization's need to improve the
8 utilization of benchmarking to improve, I think those two
9 issues were contributors to not detecting things earlier.
10 Any other questions, Chairman?
11 CHAIRMAN JACKSON: No.
12 MR. POWERS: I have no doubt that, in the end,
13 review and scrubbing of these engineering programs will
14 cause the programs to improve. But the key is really to
15 understand the impacts of any weaknesses in the engineering
16 department and programs, and understand how they might apply
17 to operability issues in the plant itself.
18 Now, from a historical perspective, this is how
19 Cook was going to bound the engineering issues. The program
20 reviews, the work that was done by the engineers prior to
21 plant walkdowns to look at calculations and look at
22 procedures, set the stage for physical walkdowns at 21 risk
23 significant systems in the plant. And the combination of
24 the procedure, calculational design basis review, along with
25 the system walkdowns, was believed would be appropriate to

1 identify any other operability issues in the plant. These
2 walkdowns, I can report to you, are complete. They were
3 completed, in fact, this past spring.
4 Now, the question has remained, both in the NRC
5 staff mind, and in our mind, how well were these reviews
6 done? And did they, indeed, find all the pertinent issues
7 of operability in the safety significant systems in the
8 plant?
9 Well, prudence dictated that we conduct another --
10 an additional vertical review, SSFI, of another safety
11 system in the plant, and we chose to do that on the
12 auxiliary feedwater system to validate the effectiveness of
13 our review process. This aux feedwater SSFI is completed,
14 it was completed in mid-October by the staff, and it did
15 validate that the implementation of our design control
16 program, the process for controlling modification, was, in
17 fact, well controlled. It did also verify that the material
18 condition of the aux feedwater system proper was in good
19 shape, consistent with my assessment that the plant is in
20 generally good material condition.
21 However, in some interfacing systems, I can't
22 report the same results, and we did find some issues that
23 challenged operability of the aux feedwater system, so there
24 is more work to do to bound the engineering issues at the
25 Cook plant.

1 To methodically and thoroughly assess our next
2 efforts in this area, I have chartered an independent team
3 with substantial engineering experience to evaluate the
4 results of our aux feedwater SSFI, to look at the results of
5 our architect-engineer inspection from the NRC, to look at
6 our containment spray SSFI, and to look at other assessments
7 that we have conducted prior to the shutdown and during the
8 shutdown.
9 Now, this engineering review group will advise me
10 of what additional actions and investigation are required to
11 ensure that we have reasonable assurance that the issues
12 that could potentially affect operability in other systems
13 have been discovered and resolved prior to restart. Now,
14 this team is reporting out to me in the week of December the
15 14th. I will be discussing the results with Mr. Rencheck,
16 and the results and the efforts of this group will certainly
17 benefit from his experience and knowledge, and we will be
18 establishing a course of action. And without prejudicing
19 the results of the team, I am personally certain that
20 addition system review will be necessary to bound the
21 engineering issues at Cook.
22 Now, while we have been working on restart, we
23 have been setting the stage for the future as well. The
24 vision that has been presented to the Cook team is that we
25 are going to be a world class, accountability-based

1 organization. Now, this motto is underpinned by two key
2 behaviors, have a strong sense of accountability where,
3 euphemistically, we do what we say we are going to do, and
4 we have a passion for self-improvement. A sense of
5 accountability preserves what we have in place already. The
6 passion for self-improvement makes sure that we are as
7 efficient and effective as possible in improving our people,
8 our processes and our plant.
9 I think my definition of world class includes
10 attributes that have become norm for the top-performing
11 plants in the country. For our people, it is clear vision
12 and alignment from top to bottom. For our processes, it is
13 effective and efficient processes and procedures. For our
14 plant, it is low, well-managed backlogs, particularly in the
15 area of maintenance and corrective action. For management,
16 it is conservative decision making with a view to long-term
17 operation of the facility.
18 Coming back to our plant again, this will result
19 in reliable, safe operation, with well-managed outages and a
20 high capacity factor, providing the right performance needed
21 for a competitive electric market. We will also have a
22 plant with superior material condition. For our people,
23 this will result in higher job satisfaction, improved safety
24 consciousness, because it is an environment and a culture
25 that is based on results and not promises.

1 I would be pleased to answer any questions you
2 have anybody my presentation. If not, I will ask John to
3 talk about our restart plan.
4 MR. SAMPSON: Good afternoon. By way of
5 introduction, I have worked at the Cook plant twice now for
6 a total of 11 years, previously holding the position of
7 Operations Manager. I returned to Cook in 1995 to assume
8 the role of the Plant Manager in 1996 and began the Site
9 Vice President in 1998.
10 I previously worked as a Maintenance Production
11 Manager at the Washington Nuclear Project and licensed at
12 the Senior Operator level at both stations. I began my
13 nuclear experience in the Navy's program.
14 For my presentation today, I am going to spend
15 time on our restart plan and supporting strategies, restart
16 schedule and the ice condenser project and I am covering a
17 number of topics here and so I certainly welcome any
18 interruption along the way to ask questions pertinent to the
19 area that we are on at the time.
20 We have implemented a formal and comprehensive
21 restart plan and this is a visual depiction with a chart of
22 a number of diamonds and each specific diamond is a written
23 documented strategy for covering an issue or a wide range of
24 issues, for example, programs.
25 Now the plan describes the controls and the

1 processes and the management oversight required for us to do
2 a thorough assessment of our people, the plant and the
3 programs, but beyond being this documented process, it is a
4 way for us to practice new organizational behaviors. We are
5 looking for problems, we are documenting them, we are
6 prioritizing them, and then we are finding ways to promptly
7 correct those most significant.
8 CHAIRMAN JACKSON: What do you mean when you say
9 Level 1, Level 2, and Level 3 systems?
10 MR. SAMPSON: We divided our systems in terms of
11 risk significance. Level 1 is the highest, Level 2 is the
12 next, and Level 3 is least risk significant.
13 CHAIRMAN JACKSON: Okay.
14 MR. SAMPSON: You will see the diamonds are
15 divided into major groupings of strategies, covering each of
16 the major areas for programs, systems, functional areas and
17 the containment and if you will look carefully at your
18 chart, you will note that there's a number of these that are
19 starred and those are the items that came from our 0350
20 checklist as provided by the 0350 panel.
21 You will note there's a number of items not
22 starred on the chart and that goes to indicate that we are
23 clearly looking for problems broader than what the 0350
24 checklist requires us to do and we felt that was significant
25 and important to do to make sure that we find all the

1 potential areas where issues in the AE shutdown could be
2 found.
3 The other thing we have done with these -- there's
4 a number of issues here and you have got to ask what's the
5 common cause or the common factors between those diamonds,
6 so we have done common cause or common factor analysis on
7 the factor that contributed to those issues and pull them
8 together in what we are calling top level strategy
9 documents, and those top level strategies are really the
10 basis for how we are going to go beyond restart.
11 We have the restart plan to get us ready for
12 restart and the top level strategies to take us beyond
13 restart in terms of continuous improvement.
14 Now before I leave the restart plan and the
15 strategies, I want to talk to two issues, specifically our
16 corrective action program improvements and the use of
17 performance indicators to measure our progress towards
18 restart.
19 COMMISSIONER MERRIFIELD: Before you do that, I
20 have a question about the 0350 process.
21 We have had some management changes in Region III
22 in the last year. Have you felt that NRC's 0350 process has
23 been a consistent, predictable measure of the progress you
24 have been making?
25 MR. SAMPSON: The 0350 process has been working

1 well for us. It provides a great forum for communication
2 between the NRC and the licensee. It gives us an
3 opportunity to talk about what differences there are between
4 understanding of issues and it's not been, the process
5 itself has not been the target of our focus. We have been
6 focusing on fixing the plant and bounding our engineering
7 issues -- that is what our real obstacles have been, not the
8 process.
9 So you should be looking at the chart that shows
10 the number of condition reports per month, and this is a
11 reflection of our corrective action program, and it is an
12 indicator that we are using to tell us something about the
13 health of our corrective action program, which we see as a
14 building block for continuous improvement.
15 Prior to the shutdown, it's our assessment the
16 corrective action program was not fully effective in timely
17 identification or resolution of problems, but you can see
18 here over the years of 1996, 1997, and then a detailed
19 breakdown by month over 1998 that we have had steady and
20 dramatic increase in use of the condition report system for
21 identifying problems and getting them recorded and
22 documented.
23 Now certainly this one indicator doesn't tell the
24 whole story with respect to the corrective action program,
25 but it does give us an early indication that our workers,

1 our team members are using the corrective action program.
2 They have confidence that they can raise problems and
3 document those in a meaningful and a productive way.
4 CHAIRMAN JACKSON: What would a condition report
5 document? Can you give us a --
6 MR. SAMPSON: A condition report can be as
7 straightforward as for example we're having some problems
8 over lower ice condenser doors right now. That condition,
9 that physical hardware problem, would be documented on a
10 condition report, because it's a piece of safety-related
11 equipment.
12 A condition report can be a process where we break
13 it down. I wrote a condition report and for some reason
14 that didn't get into the system. It can be a wide range of
15 items and we don't try to restrict in any way what the
16 condition report system is used for, other than we don't
17 want to get the system clogged up with unnecessary issues,
18 but right now that is not the problem.
19 We want the workers and the team to use the
20 condition report system to identify and document problems.
21 CHAIRMAN JACKSON: How do you ascribe a level of
22 significance to a condition report, and how many of these
23 are important from a safety --
24 MR. SAMPSON: That is a great question because one
25 of the lead-ins to our condition report process was not

1 effective before was because too many problems were
2 classified at too high of a level.
3 We were trying to do detailed root causes on too
4 many problems and it was prohibiting us from being effective
5 in resolving the most important problems, so 1997 we had
6 somewhere between 500 and 700 that we called most
7 significant that got detailed root causes.
8 This year our target is between 100 and 200 of
9 those condition reports, and we are monitoring, as it turns
10 out -- later on I'll speak to root cause quality -- but we
11 are monitoring the effectiveness of root causes now to make
12 sure the problems we do look at we are looking at them
13 right, that we are doing an effective cause analysis on
14 those problems.
15 CHAIRMAN JACKSON: Okay.
16 MR. SAMPSON: So we use a standard breakdown
17 though -- significant condition adverse to quality,
18 condition adverse to quality, and not a condition adverse to
19 quality -- to prioritize those thousand condition reports
20 per month or whatever the number might be.
21 CHAIRMAN JACKSON: Please.
22 COMMISSIONER DICUS: Looking down the road in the
23 long term, you show this as continuing to trend up, and as
24 an indicator of a corrective action program working, but
25 isn't there a point in time where that needs to start going

1 down and do you have a target? Do you have a number where
2 over the long-range you can say, okay, we are down at this
3 level -- this shows this corrective action program is still
4 effective, because it's a program that has to continue.
5 MR. SAMPSON: Right.
6 COMMISSIONER DICUS: Obviously it has to continue.
7 MR. SAMPSON: Right.
8 COMMISSIONER DICUS: You are not there --
9 MR. SAMPSON: We are not focusing on the numbers
10 now. We are focusing on the behaviors of being --
11 COMMISSIONER DICUS: The trend.
12 MR. SAMPSON: Right. We also know that we are in
13 a period of heavy self-assessment. We are in discovery
14 phase while we have been looking for these problems, so that
15 we would expect a large number of condition reports to be
16 written on a long-term basis, but we know that other plants
17 in similar conditions are writing in 5000 to 7000 conditions
18 a year and we are running about that or a little bit more,
19 and so we have a sense that we are in the right ballpark.
20 CHAIRMAN JACKSON: I guess a kind of background
21 question to the extent the systems in question are covered.
22 I am always intrigued by data of course and how it
23 is presented, but you know, we have the maintenance rule out
24 there and there have been various questions about it, but
25 that has various SSCs classified in a certain way. The

1 intent of the program is to have performance monitoring,
2 having feedback, et cetera.
3 Can you help me there in terms of how this kind of
4 a snapshot or any other plays into that or does that help
5 you at all in terms of what you are trying to accomplish
6 here at the plant?
7 MR. SAMPSON: We use our corrective action program
8 to document problems important to the maintenance rule, so
9 there is a tie, there is integration between the corrective
10 action process and the maintenance rule.
11 We have had recent examples where the maintenance
12 rule is identifying and properly categorizing systems or
13 components as needing further attention, so we know that the
14 maintenance rule process and the corrective action program
15 are working hand-in-hand.
16 CHAIRMAN JACKSON: Is that helpful to you?
17 MR. SAMPSON: It's helpful to me. The thought I
18 have here though with respect to the corrective action
19 program is that it is a large number of problems, and that
20 requires process changes to make sure that you can trend or
21 look for common problems between what are otherwise analyzed
22 on an individual basis.
23 We have to look for how these fit together in
24 terms of a trend or common cause standpoint.
25 CHAIRMAN JACKSON: So you could view this in terms

1 of condition reports initiated as relating to the robustness
2 of your discovery?
3 MR. SAMPSON: That's correct.
4 CHAIRMAN JACKSON: So to speak.
5 MR. SAMPSON: That's correct.
6 CHAIRMAN JACKSON: But there is a work off rate as
7 well as a categorization in terms of risk and safety
8 significance that would have to underlie this to completely
9 understand how you have gotten --
10 MR. SAMPSON: Exactly, and in fact, if you were to
11 go to the next page, we have got a family of about 16
12 different performance indicators that we are looking at on
13 the overall corrective action program, so you looked at one.
14 This is another example.
15 We are looking at things like the ratio of
16 self-identification for each department. There are some
17 industry statistics that tell us what percentage we should
18 expect on a department basis that people are identifying
19 their own problems as opposed to those identified outside.
20 This trend graph tells us the rate of overdues in
21 terms of investigations or commitments, so you can see that
22 even in a period of high identification of problems we are
23 trying to manage the overdues.
24 We haven't demonstrated sustained performance in
25 this area so consistent management oversight is going to be

1 required to achieve the desired long-term result, but we
2 think that we should be less than 1 percent of overdues in
3 terms of investigations and commitments on a long-term
4 basis, and we are not there yet.
5 CHAIRMAN JACKSON: What is your definition of
6 overdue?
7 MR. SAMPSON: Well, we assign due dates consistent
8 with the significance, but if it is not done on the due
9 date, it's overdue.
10 Now we also have to monitor extensions, right? --
11 and so we monitor the rate of conditions or commitments that
12 are being extended to make sure we are not just managing the
13 backlog for the backlog's sake.
14 CHAIRMAN JACKSON: And these are person-hour
15 loaded? Because in principle a given corrective action can
16 be trivial to fix.
17 MR. SAMPSON: That's correct.
18 CHAIRMAN JACKSON: And some of them can be quite
19 complex.
20 MR. SAMPSON: That's correct, and that is one of
21 the things that we are working on in terms of planning and
22 scheduling our work. I would say we are making progress in
23 both areas, but we have made more progress in terms of
24 scheduling physical work and having resource loading be
25 meaningful.

1 It is more difficult for us now because we are
2 trying to up the standard with respect to quality so there
3 is a high rejection rate in terms of quality results now
4 while the organization is trying to learn the higher
5 standard.
6 CHAIRMAN JACKSON: Okay.
7 MR. SAMPSON: Let's see. Before I leave -- again,
8 we talked a little bit about the corrective action program.
9 I wanted to point out the use of restart metrics
10 or performance indicators to measure or progress towards
11 restart. This indicator -- well, let me say in general with
12 respect to these restart metrics, we selected them based on
13 problems that are applicable to Cook specifically, but we
14 have also looked at other plants and their experience and
15 selected a family of a number of indicators to monitor.
16 This work-down curve is for the corrective
17 maintenance backlog that we are working on, and you can see
18 the green line is the target performance. It shows a
19 schedule for completing and working down the backlog. The
20 red is the actual achieved and again the great thing about
21 this is that you can focus on the delta between the planned
22 and the actual results achieved, and then we can work with
23 the line managers to hold them accountable for understanding
24 the cause or the difference between the two and what they
25 are doing to correct them.

1 CHAIRMAN JACKSON: How do you set your goals,
2 through benchmarking or in terms of some metric in terms of
3 how much work you think is prudent to have?
4 MR. SAMPSON: We did benchmarking with other
5 plants to get ourself in the range. Now we are openly
6 committing not to be world class at startup but we clearly
7 want to be good enough for startup and go to world class
8 later, but we are looking at other plants and how they did
9 their goals.
10 CHAIRMAN JACKSON: Okay.
11 MR. POWERS: I'd take world class at startup, by
12 the way.
13 [Laughter.]
14 CHAIRMAN JACKSON: So you'll take that?
15 MR. POWERS: I'll take world class.
16 CHAIRMAN JACKSON: Actually, that is an
17 interesting statement, and I appreciate your saying it. You
18 want me to tell you why?
19 MR. POWERS: Yes, ma'am.
20 CHAIRMAN JACKSON: Because so many people come in
21 and tell us how they are aiming to be world class, and the
22 real issue is, you know, just get the plant where it needs
23 to be, and so that is an interesting statement.
24 MR. POWERS: Thank you.
25 CHAIRMAN JACKSON: Thank you.

1 MR. SAMPSON: The next page, another indicator, we
2 are looking at the quality of root causes performed each
3 month.
4 What we are doing in this area, we are using
5 industry experience. We've got some selected criteria
6 that's being used at other plants and grading all the root
7 causes done, assigning a numerical grade, and then trending
8 them, and then of course this is -- we are a work in
9 progress on this effort of using indicator and quality
10 areas, so we are using outsiders to objectively critique how
11 we are doing this measuring process.
12 CHAIRMAN JACKSON: So it is higher better or lower
13 better?
14 MR. SAMPSON: The trend is conveniently indicating
15 in the right direction now, but we know we are going to have
16 to make some adjustments to this indicator because we are --
17 CHAIRMAN JACKSON: So higher is better?
18 MR. SAMPSON: Higher is better.
19 Okay, if we could turn our attention now quickly
20 to the restart schedule on the next page, you will see in
21 this curve we are tracking the work-down. This is what we
22 call a work-down curve for all of the restart issues that
23 have been identified to date out of our discovery effort and
24 it clearly shows both a plan to work down the curve, but it
25 also shows the impact of our discovery phases, and again the

1 same principle involved here with your green curve is the
2 plan, the red curve is the actual, and we hold line managers
3 for accounting for the difference between the plan and the
4 actual results achieved.
5 Now our shutdown period has been largely defined
6 by the ice condenser and it has been the controlling
7 critical path to date, and is still so today. We -- on the
8 next slide you will see a schedule that shows a critical
9 path laid out for the ice condenser. The first major
10 milestone shown there was November 15th for completion of
11 all of our ice basket work, and that was done on schedule
12 with the requisite attention to quality.
13 Last week we started chilling down the ice
14 condenser and we will probably delay that briefly for some
15 work on the lower ice condenser doors and we would expect
16 some emergent issues along the way, and we are fully
17 planning to respond to those appropriately.
18 We understand that there may be some schedule
19 impact based on our effort to bound engineering issues, but
20 it is simply the right thing to do.
21 Now I would like to spend a little more time --
22 CHAIRMAN JACKSON: Let me just ask, the mode
23 ascension that you are showing in the February-March
24 timeframe, is that for heatup and surveillance?
25 MR. SAMPSON: That's correct.

1 CHAIRMAN JACKSON: Okay.

2 MR. SAMPSON: I would like to spend now some more
3 time on the ice condenser project. That was obviously a
4 major decision for us and we have devoted a lot of time and
5 attention to correcting those conditions.

6 To date we have inspected all of the 1944 ice
7 baskets on Unit 1 and the results that we have achieved so
8 far is that we have repaired or replaced about 85 percent of
9 the ice basket components. That amounts to about 20,000
10 basket sections and a replacement of approximately 490,000
11 screws.

12 We have made and stored in a local facility 4.8
13 million pounds of pristine ice. It's ready for ice load.
14 We installed brand new top deck doors, refurbished our lower
15 inlet doors and adopted a new design for the shock
16 absorbers, which is consistent with other industry
17 practices, and we have accomplished a number of material
18 condition upgrades to the air handling units and the glycol
19 refrigeration systems.

20 CHAIRMAN JACKSON: Can you give us a succinct
21 statement -- you know, not being techies here?

22 MR. POWERS: Be careful --

23 [Laughter.]

24 CHAIRMAN JACKSON: What major condition or
25 conditions led to the conclusion that the ice condenser

1 performance would be severely degraded?

2 MR. SAMPSON: That the conditions that we were

3 looking at were the foreign material that we had identified

4 and also there's some damage to ice baskets previously

5 identified in our corrective maintenance and our condition

6 reporting system that there was not a very clear design

7 basis when we started this project, and so there was some

8 thorough and thoughtful questions about whether the

9 conditions of the baskets were within the design basis, and

10 after doing a thorough inspection we determined the right

11 thing to do is to melt it out and we can do a complete --

12 the biggest thing was to be able to do a complete

13 inspection, look for how extensive the problem was with the

14 foreign material and get right to the bottom of that.

15 CHAIRMAN JACKSON: How long does it take to melt

16 that?

17 MR. SAMPSON: We took -- I am going to look

18 backwards here for the number of days to melt. It was about

19 two weeks, if I recall correctly, and that is on one ice

20 condenser.

21 The harder part though is the plant was not really

22 designed to do a thorough meltout so we had to do some

23 modifications under our 50.59 process to make the plant able

24 to handle the ice melt, and so the prep work actually took

25 longer than the actual melt itself.

1 Let's take a closer look at ice baskets, and you
2 can see the picture in your handout shows a slight dent in
3 this basket, and that basket if inspected during our
4 inspection activities would have either been repaired or
5 replaced prior to installation. We have established a
6 formal detrimental damage criteria, and we have done
7 thorough inspections to make sure that anything that was put
8 back in the ice condenser does not encroach on that
9 detrimental damage criteria.
10 CHAIRMAN JACKSON: And so is there any implication
11 in this case of having a dented basket?
12 MR. SAMPSON: Well, the implications in a dented
13 basket is that our criteria is less than one-eighth of an
14 inch damage, and if it encroaches on the one-eighth of an
15 inch, then we analyze it and make sure that there aren't any
16 torn ligaments in the area.
17 CHAIRMAN JACKSON: I see.
18 MR. SAMPSON: And because we remove so many of the
19 basket components, our craft worker determined that it was
20 far better to correct any dents identified so that we
21 minimized any baskets we put back that were in any kind of a
22 degraded condition. It's always better firsthand to look --
23 this is the real thing. This is an actual ice condenser
24 basket section. They come in two-foot, three-foot six, and
25 twelve-foot sections.

1 CHAIRMAN JACKSON: 1,944.

2 MR. SAMPSON: 1,944 baskets. When a basket is
3 fully assembled, it's 48 feet long, and all, you know,
4 there's a lot of discussion about things on ice baskets.
5 The important things that you could look at here are these
6 screws. A lot of discussion on screws. These are the
7 actual screws. There's a top ring insulation here. It's
8 important that we modify to allow us to do better
9 maintenance and surveillance activities in the future. We
10 have a bottom coupling ring. And also you can see where we
11 have done some lift tests here, and you can see some damaged
12 ligaments that we, because of our changed maintenance
13 practices, we will not allow that to happen in the future.

14 You're welcome to look at this when we get done.

15 Questions or comments?

16 On the next page is a takeaway picture of a torn
17 ligament, and you'll see that the rounded nature here goes
18 to the lifting device used to actually lift and weigh the
19 baskets, and it's an intrusive process where you have to
20 apply a great deal of force to lift the basket.

21 Well, the previous lifting device was designed
22 with a rounder cylindrical lug, and that concentrated all
23 the weight, which causes the damage in the basket. We have
24 now redesigned our lifting devices, and a picture of that is
25 shown on the next page, to allow for a flat, even surface to

1 prevent future damage. We've done a number of things based
2 on experiences from other plants. There's a lot of great
3 experience in sharing going on between us and the other ice
4 condenser plants to make sure that we never allow this to
5 happen to our ice condenser again.
6 And in terms of concluding remarks, the ice
7 condenser itself, just doing the physical work has been an
8 impressive task and a testimony to our team, but more
9 importantly it's the organizational behaviors that have been
10 practiced through this.
11 I've been at the Cook plant long enough and have
12 come back recently after an experience at another plant
13 which -- the blessing in that is that you get coldly
14 objective of your performance when you go see another
15 plant's performance. So I come back being able to see that
16 the organization has grown and learned tremendously through
17 their shutdown period, and to see the team work together
18 now, their attention to detail, there's no question in my
19 mind that they are a markedly improved organization as we
20 get ourselves ready for restart.
21 Thank you.
22 CHAIRMAN JACKSON: Thank you very much.
23 Commissioner Dicus.
24 COMMISSIONER DICUS: Yes. Let me ask a couple or
25 bring up a couple of points maybe. And this feeds off a

1 little bit on the question that Commissioner McGaffigan
2 asked about the INPO and SALP reviews, plant evaluations,
3 and this didn't seem to surface as an issue. It wasn't
4 identified.
5 And also I think the Chairman asked Mr. Powers
6 about the kind of indicators you use in the plant, would
7 they not have shown this, and I think your response was
8 probably not a broad enough number of indicators. So
9 perhaps you could identify what indicator you really or
10 indicators you really thought were needed to identify this.
11 Because it kind of goes -- to carry this a little bit
12 farther, I think you know that we are in the process of
13 redoing how we do plant evaluations and looking at the kind
14 of indicators and how you evaluate them, so forth. So I'd
15 appreciate some feedback from you on where you think -- what
16 might have been done differently.
17 MR. POWERS: Well, you've asked a very good
18 question, and one we could spend a lot of time on. We all
19 are looking for I understand -- we're all looking for that
20 set of indicators that can give us a heads-up advance
21 warning of do we have a plant that's suffering some problems
22 that need to be remedied. I think that the movement that
23 the Commission is making towards a set of performance-based
24 indicators is good, and I encourage the pursuit of that
25 system as a replacement for SALP.

1 I do think specifically in the area of design that
2 doesn't perhaps lend itself as much as other areas of
3 operations and maintenance to some objective performance
4 indicators, and if I were looking, and I do have to look, as
5 the chief nuclear officer, I've been looking to see whether
6 or not my engineering department and my quality assurance
7 organization were performing some SSFI-like activities, and
8 continually going back and revisiting the design basis and
9 looking to see whether it departs as designs are implemented
10 and the like. So in the design area specifically I've been
11 looking for activity that would be SSFI-like, looking at
12 operations, maintenance, and design of the system.
13 COMMISSIONER DICUS: And another thing real quick,
14 and I may have to have help with my memory on this, but I
15 think you might have mentioned, one of you mentioned that
16 the ice condenser system was not a system that had been
17 given much attention over time, and that perhaps there -- I
18 guess my question is, and I think there was some discussion
19 of this, but I wasn't clear on it, are there other systems
20 that you've identified that maybe have not been given the
21 attention over time that need to be given attention, and how
22 are you -- well, not so much doing this, but how are you
23 communicating this to the industry? Because that was one of
24 your early comments, that perhaps you hadn't paid enough
25 attention to other issues even with ice condensers that had

1 happened in other plants.

2 MR. POWERS: I specifically talked about the need
3 to provide the right level of oversight for whatever work
4 force is employed at your facility, both the proprietary
5 work force, AEP personnel, or contractors. And we're taking
6 a real hard look at that.

7 Specifically in the ice condenser we're
8 establishing rigorous training programs that people are
9 going to have to have taken the class work before you even
10 enter the ice condenser, and understand the unique aspect of
11 its design and the unique aspect of the work. We're also
12 taking a look at the training provided for our contractors
13 that might perform other work in the plant and making sure
14 that it's consistent and the level of oversight provided is
15 appropriate there as well.

16 COMMISSIONER DICUS: But have you identified other
17 systems in the plant that maybe have not the attention over
18 time?

19 MR. POWERS: I think that really gets to the issue
20 that I spoke of, how to bound the engineering issues, and
21 one of the unique aspects of the ice condenser was the fact
22 that you can't test the system under design basis
23 conditions. We feel not entirely comfortable but somewhat
24 more comfortable with other systems in that there is a go
25 test so to speak where you can provide a flow test or you

1 can measure amps to a motor or stroke a valve. But I think
2 in those other systems that's where we're going to have to
3 go to take a look at our engineering programs, where there
4 are other issues like macrobiological fouling, or the 8910
5 program and see how the administration and implementation of
6 those programs may have affected themselves elsewhere in the
7 plant.
8 COMMISSIONER DICUS: Thank you.
9 CHAIRMAN JACKSON: Commissioner McGaffigan.
10 COMMISSIONER McGAFFIGAN: On your restart schedule
11 there is an awful lot of focus on the ice condensers, and
12 I'm just trying to figure out, have you worked out with the
13 staff when they're going to do whatever inspecting needs to
14 be done? The physical work is complete on the 15th of
15 January, you believe that it'll be operable on the 9th of
16 February, then you're looking for 11th of February a restart
17 authorization.
18 And I'm a little concerned, Mr. Powers talked
19 about that there may well be additional engineering issues
20 that come up and how things -- how all this fits together,
21 and with some of the other plants that have been down a long
22 time that we've dealt with, you know, they're getting the
23 operators back in an operating mode and all that, it is
24 nontrivial, and I'm sure that there is more -- you're
25 focused on the ice condensers here. I'm sure there's more

1 to your restart effort. But is this all going to come
2 together that rapidly, and are the inspections built in,
3 whatever they are?
4 MR. SAMPSON: Well, there's two aspects we've been
5 working very closely with the region and with NRR on, and
6 that's licensing actions required to support restart, and
7 then also the inspection activities, and the 0350 panel has
8 been very cooperative in terms of assigning resources as
9 necessary for the inspection activities.
10 The effort that we're working on right now,
11 perhaps more challenging than the physical work, is the
12 bounding of the engineering issues, and an important
13 inspection activity would be the engineering and corrective
14 action team inspection that will need to be done to affirm
15 our readiness from the NRC's view on restart, and we simply
16 have an agreement with the 0350 panel to provide them
17 notification when we have finally determined that we believe
18 we're ready for restart. Then the inspection at resources
19 will be assigned to support that, and the discussions have
20 been very productive and cooperative so far to accomplish
21 that.
22 COMMISSIONER McGAFFIGAN: But where would that
23 fit, that inspection? Would that be in the January time
24 frame?
25 MR. SAMPSON: Well, there are inspections laid out

1 for January and February. At our request the NRC deferred
2 the engineering and corrective action team inspection until
3 we can do our own third-party and self-verifications. We
4 previously had discussed having the NRC inspections
5 immediately following our own verifications, and felt that
6 allowed no ample opportunity for line managers to respond to
7 problems found during those verifications. So we've gotten
8 a revised notification or communication plan with the 0350
9 panel, and the 0350 panel chairman, that when we're ready,
10 we'll notify them, and then they will schedule the resources
11 required to do that.
12 There are some inspections ongoing right now.
13 There's portions of the restart readiness inspection have
14 started on operator training, and I think we're looking at
15 the corrective action program inspection in the December
16 time frame.
17 COMMISSIONER McGAFFIGAN: On licensing actions,
18 are any of these complicated licensing actions that -- my
19 recollection on Crystal River was that licensing actions
20 were the pacing item and restart at the end -- in fact, one
21 particular licensing action was the focus, and I guess your
22 new head of engineering will know all about that, but how --
23 are any of these likely to be pacing items?
24 MR. SAMPSON: We have a number of licensing
25 actions. For example, we're working one on containment

1 spray right now. But there may be some engineering
2 resolutions that allow us to not have to ask for that
3 licensing action. But there are some tech spec changes that
4 have already been processed, and again we've been working
5 very productively with the NRR staff. We understand that
6 there's processing time associated with each one. In fact
7 we spent time at Crystal River trying to understand the
8 implications of those licensing actions.
9 COMMISSIONER McGAFFIGAN: Okay.
10 CHAIRMAN JACKSON: Are you basically saying that
11 at this point there's not an issue in terms of the licensing
12 actions? I mean, it's not -- I mean, it may be on your
13 critical path, but there's nothing to indicate that there's
14 a problem?
15 MR. SAMPSON: There certainly is work to do, but
16 we're not in a position to say that any of them are specific
17 problems at this point.
18 CHAIRMAN JACKSON: Okay.
19 Commissioner Merrifield?
20 COMMISSIONER MERRIFIELD: I have no other
21 questions.
22 CHAIRMAN JACKSON: Okay. I'll leave my comments
23 for the end.
24 Thank you very much, and I think we'll hear from
25 the NRC staff very briefly.

1 MR. POWERS: Thank you.

2 CHAIRMAN JACKSON: Thank you. Thank you for

3 coming.

4 Dr. Travers.

5 DR. TRAVERS: Good afternoon, Chairman and

6 Commissioners. As you know, the corrective actions at Cook

7 are being very carefully evaluated by the NRC staff, and

8 this afternoon we plan to provide you with our perspective

9 on a number of the issues, including the status of the

10 licensee's corrective actions and the conduct of our own

11 Manual Chapter 0350 restart assessment process.

12 Joining me at the table this afternoon are Jim

13 Caldwell, who is the Acting Regional Administrator, Region

14 III; Jack Grobe, who is the Director of the Division of

15 Reactor Safety; Frank Miraglia, who you know today as the

16 Director -- Deputy Director of NRR.

17 CHAIRMAN JACKSON: We don't know Frank.

18 DR. TRAVERS: Tomorrow, he will be my deputy.

19 Cindy Carpenter is the Director of Project Directorate 3-1

20 in NRR. And without further ado, what I would like to do is

21 turn it over to Jim Caldwell, who is going to make the bulk

22 of the presentation, followed by Cindy Carpenter.

23 CHAIRMAN JACKSON: Okay. Thank you.

24 MR. CALDWELL: Good afternoon, Chairman Jackson.

25 Commissioner Dicus, welcome back.

1 COMMISSIONER DICUS: Thank you.

2 MR. CALDWELL: Commissioner McGaffigan, and
3 welcome to Commissioner Merrifield.

4 As Bill Travers indicated, I am Jim Caldwell, the
5 Acting Regional Administrator, Region III. He also
6 indicated that with me today is Jack Grobe, who is the
7 Director of Division of Reactor Safety in Region III. He
8 also the SES Oversight Manager and Chairman of the Manual
9 Chapter 0350 Restart Panel for D.C. Cook.

10 Cindy Carpenter, who was also introduced, is the
11 Director -- Project Director of 3-1 in NRR, but she is also
12 the Vice Chairman of the Manual Chapter 3050 Restart Panel.
13 And later in the presentation, she will address the
14 activities that are associated with the ice condenser at
15 other facilities besides D.C. Cook.

16 Also with me today from Region III are Bruce
17 Bartlett. He is the Senior Resident Inspector for D.C.
18 Cook. I think Bruce is right behind me. And Mel Holmberg,
19 he is the Lead Inspector, Engineering Inspector for D.C.
20 Cook. Mel is primarily responsible for the inspection of
21 the ice condenser, and which resulted in the licensee
22 reconstituting their ice condensers. Next slide.

23 In brief, I intend to discuss the activities
24 leading up to the identification of the design concerns at
25 D.C. Cook, and I will talk about the results of the

1 inspections and assessments by both the NRC and the licensee
2 following the dual unit shutdown in September. Then I will
3 discuss the NRC oversight of the corrective actions
4 initiated by the licensee, and then, finally, talk about
5 current status and restart issues. Next slide.
6 As you heard from the licensee, D.C. Cook was shut
7 down in September of '97 to address operability concerns
8 raised by architect-engineering inspection in August of
9 1997, and remains shut down today.
10 Before discussing further the status of D.C. Cook
11 and the NRC restart oversight activities, I would like to
12 spend a few minutes putting D.C. Cook's past performance in
13 perspective. In the early '90s, and as Chairman Jackson
14 indicated in her opening remarks, the NRC's assessment
15 techniques and the performance indicators characterized D.C.
16 Cook's overall performance as good to excellent.
17 In the mid-1990s several plant transients, due to
18 operational issues and equipment problems, reflected a
19 slight decline in performance and operations and
20 maintenance. As a result, the region increased their focus
21 on D.C. Cook in these areas.
22 Additionally, both of the SALP reports during
23 those periods also identified continued concerns in
24 engineering, however, performance in engineering was still
25 considered good overall. These engineering concerns

1 involved the use, retrieveability, awareness and
2 understanding of the plant design and licensing basis.
3 To gather additional insights into the performance
4 in operations, maintenance and engineering at D.C. Cook, the
5 region elected to conduct two regional initiative team
6 inspections, a safety system functional inspection completed
7 in December of 1996, and an operational team inspection
8 completed in May of 1997, in addition to the routine
9 resident inspection program and regional basis program.
10 Both inspections confirmed that operational
11 performance had improved, however, both inspections
12 continued to find weaknesses in engineering processes. This
13 brings us to the current issues that led to the facility
14 shutdown.
15 Based on the concerns, the continued concerns in
16 the engineering area, the region decided to reschedule the
17 performance of the architect-engineering inspection from
18 another site to D.C. Cook and move it up from late 1997 to
19 August of '97. This narrowly focused, vertical slice
20 inspection, utilizing industry experts, went into further
21 depth evaluating the licensee's control of the design basis
22 than the normal inspection process. As a result, the
23 architect-engineering inspection identified operability
24 concerns associated with the emergency core cooling and
25 containment systems.

1 The licensee could not resolve the operability
2 questions raised by the architect-engineering team on a
3 timely basis and chose to declare the emergency core cooling
4 systems inoperable. Consequently, the licensee shut down
5 both D.C. Cook units in September 1997. In addition, in
6 September of 1997, a Region III inspector identified fibrous
7 insulation material in containment, which raised further
8 questions as to whether the emergency core cooling system
9 and containment spray system could perform their design
10 basis functions.
11 As a result of the architect-engineering and
12 containment inspection findings, the licensee initiated
13 several corrective actions that Region III documented in a
14 Confirmatory Action Letter. The licensee's actions
15 addressed specific technical issues and attempted to address
16 the need in the short term to determine the depth of the
17 engineering problems and their impact on operability of
18 other safety systems at Cook.
19 Following the issuance of the Confirmatory Action
20 Letter, the region conducted three public meetings between
21 December 1997 and January '98 to discuss the licensee's
22 responses to and understanding of the issues identified in
23 the Confirmatory Action Letter. These meetings were
24 primarily focused on the extent of the impact of the
25 engineering problems. Next slide.

1 CHAIRMAN JACKSON: Let me ask you a couple of
2 questions before you go.
3 MR. CALDWELL: Okay.
4 CHAIRMAN JACKSON: How old were the major issues
5 when NRC came upon them?
6 MR. CALDWELL: The AE inspection issues?
7 CHAIRMAN JACKSON: Right. All of the ones that
8 you have just discussed.
9 MR. CALDWELL: They were a number of years old,
10 differing times. Some -- well, when we talk about ice
11 condenser, I believe went back to initial construction. But
12 others were due to modifications made to the plant over the
13 years. Fibrous material was backing material that was
14 installed in the cable trays as support, putting in the fire
15 protection material, and it was supposed to be removed, but
16 the design mod that put that material in did not require it
17 to be removed as it should have. So some of these were
18 quite old, numbers of years, all the way back to initial
19 construction.
20 CHAIRMAN JACKSON: Let me just ask you this
21 question, I mean it is kind of the question on the table.
22 You know, not to take anything away, because I think in this
23 particular instance, in recent times, you know, the staff
24 has done a good job, actually, in ferreting out the issues.
25 But I guess the pregnant question is, what does it say about

1 our inspection programs' focus in the past? In addition, a
2 number of the areas, the issues fall within the engineering
3 area, and I note that we had rated the engineering as good
4 for two SALP cycles before these issues broke.
5 MR. CALDWELL: Right.
6 CHAIRMAN JACKSON: And so what does that say
7 about, you know, what we were focusing on, particularly
8 vis-a-vis engineering? Can you give us some sense?
9 And then the third question is, because it always
10 comes up, why a CAL versus an order or some other mechanism,
11 given what came out of our inspections? One, because we get
12 accused of piling things on licensees, you know, once they
13 have already shut their plants down. Secondly, if the
14 issues were significant, you have to tell us. I mean,
15 presumably, they were, and the language in the
16 correspondence to the licensee suggests that they were
17 viewed that way by the staff. Can you tell me kind of the
18 process here in terms of, you know, issuing the CAL after we
19 have come through all this versus some other step? But,
20 first, I guess, I am interested in the question about the
21 focus of the inspection program in the process, and then
22 what we were doing vis-a-vis SALP in the previous -- I mean
23 engineering in the previous SALP cycles.
24 MR. MIRAGLIA: Madame Chairman, may I address the
25 inspection program issue? If the Commission may recall, as

1 a result of Millstone, and looking at 50.59, it resulted in
2 a Generic 50.54(f) letter to licensees regarding the
3 configuration control of the design basis information.
4 In a number of meetings with the Commission at the
5 time, the staff indicated that the focus of the SALP program
6 and the inspection program was engineering support to
7 operation, and that a weakness in our program was perhaps
8 looking at the design basis and configuration control
9 issues. At that time the staff indicated that we were
10 modifying the engineering modules within the inspection
11 program, and that is being done, and has been done, and is
12 looking at the issue of design. So the weakness is one that
13 existed and the lessons learned from the Millstone
14 experience and the materials that we gained, and the
15 information we gained through the Generic Letter on design
16 basis configuration, which had a long history, as the
17 Commission is well aware, on that issue has led to
18 correction, hopefully, of that weakness.
19 In terms of the SALP area, as I said, the
20 Commission was briefed on a number of times that the focus
21 in engineering functional area was engineering support to
22 operations and didn't have the element of the design
23 configuration, and that as being looked at in the context of
24 our performance assessment process.
25 The Commission has been briefed recently on our

1 activities with respect to the overall reassessment of
2 performance assessment. We have laid a number of
3 cornerstones. And one of the issues that has come out of
4 the workshops, and ongoing dialogue with the industry and
5 other stakeholders, is that when one looks for a performance
6 indicator that addresses design, there seems to be paucity
7 of a crisp indicator in that area, and that in order to
8 buttress the assessment process, that we have to do some
9 more focused type of inspection activities. And so the
10 risk-informed baseline inspection program that we are
11 looking at is developing those kinds of engineering kinds of
12 modules to amplify and augment the information relative to
13 this area. So it is a weakness that we identified a while
14 back. It has manifested itself here in a number of areas,
15 as you heard. In addition to the design basis issue here,
16 there were other issues, as the licensee has indicated, that
17 it had to be not only an engineering, in terms of the design
18 basis and configuration control, but the implementation of a
19 number of programs in terms of surveillances and other
20 activities.
21 CHAIRMAN JACKSON: Were you going to say
22 something, Dr Travers?
23 DR. TRAVERS: Well, I was more or less going to
24 echo what Frank said, and actually what Mr. Powers said in
25 response to your question as well, and that is that design

1 basis issues don't really lend themselves well to
2 performance indicators. So, and we are still working on the
3 assessment process, but we have recognized that going in,
4 and the expectation at this point, at least, is that the
5 risk-informed baseline inspection activities have to account
6 in some fashion, and we are still working out just how
7 extensive that ought to be to bolster the performance
8 indicators, inspection program and safety culture issues,
9 the three sort of fundamental elements of what we today are
10 driving towards in the new assessment process that we will
11 briefing the Commission on in the very near term.
12 CHAIRMAN JACKSON: And you were going to speak --
13 go ahead -- to the CAL issue.
14 MR. GROBE: Could I, before you call to the CAL,
15 could I add a little Cook-specific perspective? I was
16 involved in the Point Beach restart effort also and the
17 engineering inspection program is retrospective, unlike our
18 resident inspection program, which -- wherein we observe
19 many activities in an ongoing nature.
20 Engineering, by definition, is retrospective. We
21 are looking at work product that has been completed. And
22 when you have an organization, I think the words Bob Powers
23 used was insular, less receptive to criticism from outside.
24 We had been identifying some weaknesses in engineering for a
25 period of time, and I don't believe the organization had

1 taken them -- I don't know if "to heart" is the right word,
2 but the combination of that insular perspective, plus a
3 corrective action program weakness where they weren't
4 getting to root cause of issues, contributed to the lack of
5 timely identification of this.
6 The design type inspections that we have been
7 doing over the last couple of years takes a bit of different
8 resources than what we normally have available, and Frank
9 has been quite generous with contract dollars to perform
10 inspections like the architect-engineering inspection and
11 the SALP inspections. I feel badly that we didn't identify
12 this earlier, but I believe there is a combination of the
13 retrospective nature and the organization that existed at
14 Cook, which was not as receptive to outside criticism, that
15 prolonged the delay -- or prolonged ratification of the
16 issues at Cook.
17 MR. CALDWELL: I was just going to say, plus, if
18 you look at the systems that were identified by this
19 in-depth engineering inspection, they were mostly the
20 passive systems, the systems that aren't necessary for
21 operating the facility. In looking at engineering support,
22 you look at typically the systems that support operation of
23 the facility, so these other systems don't get quite the
24 same --
25 CHAIRMAN JACKSON: Heretofore.

1 MR. CALDWELL: Heretofore, yes.

2 MR. MIRAGLIA: May I add to that, if the
3 Commission may recall, that one of the cornerstones within
4 the performance assessment process is mitigation systems,
5 and one of the issues there is how does one verify the
6 design, so the Chairman's comment about heretofore is
7 certainly a fair one. It is an issue that is receiving
8 focus at this time.

9 COMMISSIONER MERRIFIELD: Before Mr. Caldwell goes
10 into the CAL issue, I do have a followup question I wanted
11 to ask.

12 You know, the significant issue here with the ice
13 condenser was found as a result of the architect-engineering
14 study, and we're going into a mode here at the Agency where
15 we're winding that program down, we're not going to be
16 following that up, so my question is, how in terms of
17 planning for the future in our inspection program, how do we
18 build it such that we're able to identify these types of
19 problems that only came out as a result of a program that --

20 MR. MIRAGLIA: I think the region could add that
21 the ice condenser issue didn't really result as a direct
22 result from the architect-engineering inspection.

23 CHAIRMAN JACKSON: But there are a number of
24 other --

25 MR. MIRAGLIA: But engineering issues did, and

1 there was other information brought to the Commission that
2 led to looking at engineering issues associated with other
3 systems. And so certainly the extent, the condition issue
4 is the one that the license is dealing with and we're
5 dealing with with respect to the restart of the Cook
6 facility.
7 But generically the way we've looked at this issue
8 in terms that I think the sensitivity to configuration
9 control of the design basis is clearly an issue that has
10 been identified to the industry, and there are a number of
11 initiatives that we have ongoing that are addressing that in
12 terms of the performance assessment process, the changes to
13 the inspection process as well.
14 Moreover, I think another area that we focused on,
15 and that the key word that was used at the table today was
16 follow through. We've talked in terms of corrective
17 actions.
18 Corrective action programs have essentially three
19 elements to them, identification of problems -- and the
20 licensee has indicated they're doing a better job at
21 identifying the problems. That's only one part of the
22 issue.
23 The second part of that issue is root cause: Do
24 we understand what that problem is and have identified the
25 root cause of that issue and that problem.

1 And the third is to have a mechanism for effective
2 follow-through. Is that an issue that we've really fixed?
3 And that's another area that the programs that we're looking
4 at are going to pay more attention to corrective action
5 programs, because we're looking for licensees to do more
6 self-assessments, identify their own problems. So as a
7 result, since we're going to be depending more upon those,
8 then we have to do a better job of assessing the adequacy of
9 the correction action program. So these things in
10 combination we're hopeful the Commission would address those
11 kinds of concerns in large measure.
12 COMMISSIONER McGAFFIGAN: Can I just -- in the
13 corrective action program are you going to have performance
14 indicators of the sort that D.C. Cook used in their
15 presentation, or is that going to be outside the performance
16 indicator program, something that we're doing through these
17 additional inspections?
18 MR. MIRAGLIA: I think the short answer to that is
19 probably yes. The other answer that I would take, it's a
20 work in progress. We're looking at corrective action
21 programs and performance indicators for those, and there
22 will be probably a mix of performance indicators as well as
23 inspection activities as well in terms of the program. But
24 exactly what those are, Commissioner, I don't -- I haven't
25 identified them at this point in time, and the staff is

1 still working --

2 COMMISSIONER McGAFFIGAN: You're briefing us so

3 shortly that I'm just -- I always wonder --

4 CHAIRMAN JACKSON: He has a whole --

5 COMMISSIONER McGAFFIGAN: It's almost six weeks

6 away. It's in January.

7 DR. TRAVERS: But you may recall in the context of

8 the proposal we had before the Commission on Surry Level 4

9 enforcement actions, we've proposed to emphasize the

10 programmatic nature of corrective action, and that would

11 probably result in a more extensive evaluation of the

12 programmatic aspects of corrective action programs than

13 currently exist. We have inspection procedures that address

14 corrective action programs. They are used occasionally, but

15 my guess is --.

16 CHAIRMAN JACKSON: But programs are as programs

17 do.

18 DR. TRAVERS: That's exactly right, and we have to

19 develop mechanisms to assess the results.

20 CHAIRMAN JACKSON: Results, results, results.

21 DR. TRAVERS: Right.

22 CHAIRMAN JACKSON: Okay.

23 I know they were trying to sit here and --

24 MR. CALDWELL: I was hoping we would skip the --

25 because the licensee shut down both their units, and it was

1 due to engineering design operability related issues. There
2 were a number of things that they were going to have to do
3 in order to satisfy those, to answer the questions and
4 determine not only the operability of those systems but to
5 look at the root cause and come up with some corrective
6 actions.
7 We used as a tool, a regulatory tool, the CAL
8 process, confirmatory action letter, to document the
9 commitments that the licensee had made towards restart. I
10 would have to say that in hindsight an order might have been
11 more appropriate, but just I guess going from my experience
12 where in the past you used the CAL as the process for
13 documenting commitments that the licensee is, you know,
14 voluntarily making to resolve specific issues, either
15 technical issues or human factors issues.
16 So in this case what we did -- we wanted to have a
17 regulatory tool. We wanted to put a high hat on this. We
18 wanted to make sure that it was, you know, in clear in the
19 public domain that these were the things that were necessary
20 to be done prior to at least a discussion with us about
21 restart. So that's the tool we used.
22 MR. GROBE: At the time the CAL was issued, it was
23 certainly not anticipated the plant would be down this long.
24 It wasn't until the ice condenser issues were identified in
25 January and February that the commitment, which was a five

1 or six-month commitment, shutdown commitment, was made to
2 repair the ice condenser. So it was clearly anticipated the
3 plant would be back on short order. Once it appeared to be
4 a longer-term process, we began the 0350 process.
5 MR. MIRAGLIA: Madam Chairman, the tasking memo
6 that we have before the Commission, one of the items within
7 that context of that is the issuance of CALs. We have a
8 number of initiatives under way. One of those initiatives
9 was to look at the guidance that's out there in the use of
10 that tool. Can that guidance be improved and clarified?
11 There is some inference in there it should be
12 shorter-term duration, and in this case we sort of moved
13 across the windows, and so we're looking not only at the
14 guidance and what improvements can be made in that guidance
15 to make its use more specific and to handle these
16 transitory-type things that go along the time to look at
17 different and more formal regulatory tools.
18 So that is an element within the task action plan
19 which the Commission is being informed on on our progress
20 today.
21 COMMISSIONER McGAFFIGAN: Could I just ask a --
22 CHAIRMAN JACKSON: Yes, please.
23 COMMISSIONER McGAFFIGAN: Clarifying question?
24 If you go to an order, what are the legal
25 implications of an order? Does that bring in -- is lifting

1 an order more complicated?

2 MR. MIRAGLIA: Well, I'll defer to Karen, but

3 there's, you know, confirmatory orders are a potential

4 aspect.

5 COMMISSIONER McGAFFIGAN: A confirmatory order is

6 between a CAL and an order.

7 MS. CYR: All a confirmatory order means is that

8 the licensee has chosen not to exercise its opportunity to

9 request a hearing in that context, and basically you know --

10 they essentially know what up front is going to be required

11 of them as told you in advance, based on that knowledge that

12 they are not going to choose or at that point do not believe

13 they want to choose an opportunity to exercise their

14 hearings rights in that context.

15 The --

16 COMMISSIONER McGAFFIGAN: Does the public have

17 hearing rights at that point?

18 MS. CYR: It's very difficult. If they've agreed

19 to undertake those activities, the standard under which

20 others can have an opportunity for hearing are much more

21 severe in that context.

22 CHAIRMAN JACKSON: There was a question of whether

23 it's more difficult to lift an order than --

24 MS. CYR: The standards of what they have -- you

25 have to -- not particularly. There's really again no

1 opportunity for review of that. It's a question of since
2 you're restoring the plant to the -- assuming -- it's the
3 nature since there was a difficulty there and you're
4 restoring them to whatever the underlying conditions were
5 that the plant was licensed to operate before that
6 there's -- in terms of making those findings -- and there's
7 no more difficulty.
8 CHAIRMAN JACKSON: The only reason I asked the
9 question is that, you know, we have focused a lot, but there
10 was the issue of foreign material in containment that
11 Commissioner Merrifield was talking about that could have
12 impacted the ability of the ECS sumps to operate properly,
13 the ice condensers, hydrogen mitigation and ignition,
14 residual heat removal, containment spray, containment spray
15 additive, and aux feedwater systems, among other things.
16 And so it seems that there's a panoply of engineering/design
17 issues that are quite extensive that all play into essential
18 safety capabilities of the plant. And so it does raise the
19 question, and I'm not arguing it one way or the other, you
20 know, of the right regulatory tool at the right point, given
21 the magnitude of what was discovered.
22 And so -- and it forces a certain discipline on us
23 in terms of, you know, how such a -- if there were an order,
24 how it would have to be structured and the case that has to
25 be made vis-a-vis safety. And so on the one hand, you know,

1 it's more formal, and I think may appear more onerous, but
2 at the same time it's one that enforces a certain discipline
3 that makes one go through the issues and the safety
4 significance of those issues, and in the process addresses
5 the question of whether one is post-facto inappropriately
6 using an informal regulatory tool. So, you know, I just
7 think that one in this particular case is on the table.
8 MR. CALDWELL: But you understood based on Jack's
9 comments that a lot of these things that we found have
10 evolved over about a six-month period, and we do have in the
11 CAL the opportunity that if we ever come to disagreement on
12 some issues, then we could issue an order to accomplish that
13 action.
14 As a result of the issues raised by the NRC
15 inspections, the Union of Concerned Scientists filed a 2.206
16 petition in October of 1997 and an addendum in January of
17 1998 requesting NRC maintain D.C. Cook in a shutdown
18 condition until there's reasonable assurance that all the
19 significant deficiencies in safety-related systems have been
20 identified and corrected.
21 The issues in the 2.206 petition paralleled and
22 provide additional useful information regarding the issues
23 being followed by the NRC. The petition resulted in the NRC
24 requesting additional information from the licensee at an
25 informal public hearing in August of 1998. These issues are

1 being considered in the overall review of the licensee's
2 readiness for restart.
3 Region III conducted several inspections within
4 the first part of 1998 indicating that the licensee had made
5 significant progress in addressing the specific technical
6 issues in the confirmatory action letter. They documented
7 that questions still remained involving the adequate
8 maintenance of the design and licensing basis.
9 As the licensee indicated earlier today, to help
10 bound these engineering and design questions, they
11 contracted with an engineering firm to conduct an
12 independent safety system functional inspection, SSFI, of
13 the containment spray system in January or February of '98.
14 This SSFI raised questions that resulted in the containment
15 spray system being declared inoperable.
16 Also during the same period the region initiated
17 an inspection of the ice condenser. The inspection
18 identified significant questions as to the ability of the
19 ice condenser to function as designed due to breakdowns in
20 surveillance testing, corrective actions, and maintenance of
21 the design basis. These concerns eventually led to D.C.
22 Cook declaring the ice condensers inoperable and
23 significantly extending their outage to support the
24 refurbishment of the ice condensers.
25 And as a result of these findings from the

1 architect-engineering inspection, the containment fibrous
2 material inspection, the ice condenser inspection, and the
3 followup inspection for the confirmatory action letter, the
4 NRC issued a severe Level 2 enforcement action with a
5 proposed $500,000 civil penalty.
6 In March of '98, based on the results of these
7 inspections and the concerns identified, the licensee
8 developed a comprehensive restart plan and the Agency
9 initiated an NRC manual chapter 0350 oversight panel. Both
10 of these actions were initiated to provide a structured
11 process to ensure that all the questions associated with
12 systems and processes necessary to support a safe return to
13 operation were adequately addressed prior to restart.
14 CHAIRMAN JACKSON: Let me take you back to your
15 previous slide.
16 MR. CALDWELL: Okay.
17 CHAIRMAN JACKSON: Let me ask you a couple
18 questions.
19 What does the 2.206 petition request that we have
20 not already done or put into place? And what did it request
21 that we had not done at that point but we've subsequently
22 put into place?
23 MR. CALDWELL: The initial 2.206 just followed the
24 items that we'd already identified in our inspections and
25 the confirmatory action letter and the architect-engineering

1 inspections and the fibrous material inspections to date.
2 The addendum identified six specific issues, all of which I
3 believe --
4 MR. GROBE: I think your question was what did the
5 petition request us to do? It requested we issue an order
6 modifying, suspending, or revoking the standard language --
7 CHAIRMAN JACKSON: No, but I meant in terms of the
8 issues --
9 MR. GROBE: Right. Okay.
10 MR. CALDWELL: Right. I believe the majority, if
11 not all the issues, are the same issue that the NRC has
12 identified and continued to identify at the facility. It
13 did put them in perspective and provide this additional
14 information associated with issues, but it paralleled the
15 findings that had been identified to date.
16 MR. MIRAGLIA: It raised the issues with respect
17 to design basis in saying there's lots of findings and so
18 you need to address the design basis issues. The other
19 thing that it did which we've subsequently done is it
20 requested an informal --
21 MS. CARPENTER: An informal public hearing which
22 will be held in August of this year.
23 CHAIRMAN JACKSON: I note that the petition
24 references NRC's 50.54(f) letter on design basis issues, and
25 the question is did we review the response to that letter

1 for D.C. Cook?

2 MR. GROBE: Yes.

3 CHAIRMAN JACKSON: And so what did we conclude?

4 MR. GROBE: The context of the reviews of the

5 letters was in an office review of the substance of the

6 letter and whether it responded to the questions. The Cook

7 letter was viewed as a good response, not a superior

8 response or an inferior response. In hindsight the letter

9 predicated its success, as most of them did, on the

10 robustness of its programs, which are now viewed as being

11 good programs but poorly implemented in many cases. And

12 also on a number of prior detailed engineering activities

13 that the licensee had conducted themselves as well as

14 responses to industry activities, for example, SSFIs that

15 they had conducted, responses to generic letters like the

16 motor-operated valve generic letter. Those assertions were

17 intended to provide confidence that the design basis had

18 been at that time maintained adequate.

19 CHAIRMAN JACKSON: I mean so was the focus then on

20 a programmatic review and not on implementation necessarily?

21 MR. GROBE: Yes.

22 CHAIRMAN JACKSON: And not necessarily with

23 respect to the specific design basis issues, not on the

24 ability of certain systems to perform their intended -- we

25 did not really focus on those.

1 MR. MIRAGLIA: No. The question was -- in the
2 50.54(f) letter on design basis -- to the utility was why
3 did they have confidence that the systems would. And they
4 described programs. The review of that letter was done in
5 an office review, as Jack has indicated, but it was also to
6 be supplemented by our knowledge of information from
7 independent inspection knowledge.
8 We did provide the Commission a paper or
9 memorandum that indicated the aspects that we looked at and
10 identified candidates for architect-engineering evaluations,
11 and as you heard from Jim, there was engineering concerns.
12 And this plant was identified as a candidate for an
13 architect-engineering inspection because we did have some
14 indications of engineering issues. We weren't sure of the
15 depth of that. And so that was another test of the
16 robustness of the programs. The indication from the
17 licensee here today is that the programs are robust, it's
18 the implementation and again the follow-through on those
19 kinds of programs and corrective actions.
20 CHAIRMAN JACKSON: Okay. So let me make sure I
21 understand again. There was an in-office review. It looked
22 at the "robustness" of the programs, but not specifically on
23 the implementation per se, and not specifically on the
24 ability of key systems to perform their intended functions.
25 But it did ID candidates for the architect-engineering

1 inspections, and there were engineering concerns with
2 respect to this particular licensee. And then is your
3 argument then that the AE inspections then began to peel the
4 layers off the onion?
5 MR. MIRAGLIA: In this case that certainly seems
6 to be the case, Madam Chairman. In addition it was more
7 than a programmatic. It was to take the inspection results
8 and findings and information that we did have and do an
9 orthogonal check of the programs, and did we have
10 information that would say that this appears to be a valid
11 response, or did we have some additional concerns. Besides
12 AE inspections there were candidates for the modified SSFI
13 inspections and the engineering inspections as well, as well
14 as normal follow-through on design basis kinds of issues.
15 CHAIRMAN JACKSON: I think Commissioner
16 McGaffigan --
17 COMMISSIONER McGAFFIGAN: It's on the same point.
18 I think the presentation was that in December of '96, which
19 is about the time the 50.54(f) responses were coming in, you
20 did an SSFI, a safety system functional inspection, on a
21 system at D.C. Cook. Which one was it?
22 MR. CALDWELL: We did a safety system operational
23 performance inspection. It was a --
24 COMMISSIONER McGAFFIGAN: It's different from --
25 MR. CALDWELL: Yes, it's a Region III initiative

1 to look at operations, maintenance, and engineering, but --
2 COMMISSIONER McGAFFIGAN: It wasn't a deep
3 inspection on a system.
4 MR. CALDWELL: Not as deep. It did look at a
5 system, I believe it was RHR --
6 MR. GROBE: It was RHR and high head safety
7 injection.
8 MR. CALDWELL: High head safety injection. We did
9 find some issues on the charging pumps, some design issues
10 on charging pumps, but not to the extent that the AE found
11 in the systems they looked into.
12 MR. GROBE: We utilized contract design engineers
13 to assist us in those inspections, and they were deeper than
14 our routine inspections, but they weren't like an SSFI.
15 MR. CALDWELL: Right.
16 COMMISSIONER McGAFFIGAN: But they didn't rise to
17 the level -- the findings were -- did you do others of that
18 sort in the region?
19 MR. GROBE: Yes.
20 COMMISSIONER McGAFFIGAN: And were these typical
21 findings? Or are they worse than normal?
22 MR. GROBE: Actually there were more substantive
23 findings at some of the other facilities.
24 COMMISSIONER McGAFFIGAN: Based on -- more
25 substantive at other facilities?

1 MR. GROBE: Yes.

2 COMMISSIONER McGAFFIGAN: From the SOFI

3 inspections.

4 MR. CALDWELL: We continued to have an edge in the

5 engineering area, but the SOFI did not define it like the AE

6 did.

7 MR. GROBE: To scratch that itch we reprogrammed

8 the AE from another facility with a different

9 architect-engineering firm to Cook.

10 COMMISSIONER McGAFFIGAN: So, if I could, it

11 sounds like you had some suspicions, but you weren't finding

12 things using the tools that you had readily available --

13 MR. CALDWELL: Right.

14 COMMISSIONER McGAFFIGAN: This other tool came

15 along.

16 MR. CALDWELL: Yes.

17 COMMISSIONER McGAFFIGAN: And you used it.

18 MR. CALDWELL: Yes.

19 CHAIRMAN JACKSON: Okay.

20 MR. CALDWELL: Both of the actions, the 0350 and

21 the licensee's restart plan which is initiated to provide a

22 structured process to ensure that all the systems and

23 processes necessary to support return to operation were

24 adequately addressed prior to restart.

25 CHAIRMAN JACKSON: Let me ask you one more

1 question.

2 MR. CALDWELL: Okay.

3 CHAIRMAN JACKSON: Where was the licensee's

4 quality assurance organization in all of this?

5 MR. CALDWELL: I don't believe that -- I guess let

6 me put it this way. I believe this licensee was --

7 Commissioner Diaz will probably get me for this, but they

8 didn't have --

9 CHAIRMAN JACKSON: I might.

10 MR. CALDWELL: You might get me, too. They

11 weren't that self-critical. They didn't have an

12 organization that was set up to go look out and find

13 problems. They were more focused on looking at what they

14 had and justifying why it was acceptable the way it was, not

15 necessarily bad, just looking at the things that they had

16 and justifying them, so they didn't have a strong quality

17 organization looking for problems, identifying issues. They

18 didn't have a strong corrective action program.

19 CHAIRMAN JACKSON: So how many of the problems

20 being grappled with today reflect on, you know, on

21 inadequate QA?

22 MR. CALDWELL: Well, inadequate QA or inadequate

23 observation by operations, maintenance, the risks -- like

24 the fibrous material. That was an inspector who was in

25 containment walked up and looked at a cable tray and

1 identified the issue, happening to be someone who was
2 familiar with the fibrous material issue.
3 The licensee had done a number of containment
4 close-outs and had never identified this issue.
5 There was peeling paint in containment. There
6 were a number of things that had they been very critical
7 looking at and looking for problems they could have
8 identified these things.
9 CHAIRMAN JACKSON: Now what about us?
10 MR. CALDWELL: Same.
11 MR. GROBE: Good question. We have inspection
12 procedures to examine quality assurance, corrective actions,
13 and we were not effective at identifying the weaknesses in
14 Cook's program.
15 QA doesn't prevent problems. I mean QA didn't
16 cause any of the problems. It contributed to them not being
17 identified on a timely basis. Significant deficiencies in
18 the surveillance testing program also contributed to not
19 identifying these issues on a timely basis.
20 Just to use a very simplistic example, the screws
21 which John Sampson showed you on the ice basket, there were
22 occasions when a crew would go to lift an ice basket and
23 pull out half of the ice basket or a portion of the ice
24 basket because the screws had all failed, and there were
25 during those same outages occasions when in a system called

1 the ice melt system there is a tank and a screen, and there
2 were situations where screw heads and portions of screws
3 would be identified in that tank, but nobody ever thought to
4 go back and look and see the breadth and depth of that
5 problem.
6 In hindsight, it's clear that there was a problem
7 with the connections between the various segments of the
8 basket. It was not QA nor the surveillance testing program
9 that didn't identify and resolve it on a timely basis.
10 CHAIRMAN JACKSON: Well, it strikes me that there
11 are two issues here. One has to do with what you have just
12 delineated in terms of some weaknesses and vulnerabilities
13 in the licensee's approach, the licensee's organization, the
14 licensee's program.
15 The other has to do with attestations that we make
16 based on what we look at as to the efficacy in these very
17 same areas, and so, you know, are there lessons learned --
18 MR. GROBE: Absolutely.
19 CHAIRMAN JACKSON: -- for us in this regard?
20 MR. CALDWELL: Right. We are in the process -- we
21 have already initiated a lessons learned in Region III and
22 we haven't evaluated the results of that yet, and then we
23 will continue to work with that process depending on what we
24 find.
25 MR. GROBE: We actually are doing an independent

1 third party lessons learned.

2 MR. CALDWELL: Right.

3 CHAIRMAN JACKSON: Well, that is good for Region

4 III, but if in fact the program, our program, is not

5 structured or implemented appropriately --

6 MR. MIRAGLIA: Madam Chairman --

7 CHAIRMAN JACKSON: Yes?

8 MR. MIRAGLIA: -- I think many of the lessons

9 learned that we have looked at from other stations are

10 addressing similar issues.

11 The design basis issue, certainly the corrective

12 action program and the effectiveness of the corrective

13 action program is an issue that certainly needs

14 consideration, and that is in a test of either quality

15 assurance, quality control, or self-assessments.

16 It's the rigor that one applies to that process,

17 and I think the key word is to follow through on those

18 actions. You have do more than identify your problems and

19 find the root cause. You need to make sure they are

20 effective fixes and follow through.

21 CHAIRMAN JACKSON: Well, I guess really that the

22 issue is are we also, likewise, focusing on the

23 follow-through.

24 MR. MIRAGLIA: I believe so, Madam Chairman, in

25 terms of looking at the corrective action program and the

1 design basis issues and not only in our inspection program
2 but also in the performance assessment process.
3 MR. CALDWELL: I just want to interject here. I
4 don't want you to think that we had a weak inspection
5 program, especially at the site. We had a pretty strong
6 program. I mean we had identified operational concerns with
7 this licensee. They had addressed those concerns. The
8 plants were operating well, so we were focused on a lot of
9 the issues associated with operating the facility.
10 We didn't focus as much on these type of issues
11 that have been identified by the AE and subsequent
12 inspections and that's what we'll get out of our lessons
13 learned on this process.
14 CHAIRMAN JACKSON: So the real statement is that
15 the program was effective for what it looked at?
16 MR. CALDWELL: Yes, I would say so.
17 MR. MIRAGLIA: And this is the same thing that we
18 have indicated to the Commission with respect to our focus
19 on and support of engineering to operations and didn't look
20 at the design, so that focus has been ongoing for the past
21 couple of years.
22 MR. GROBE: It is part of the improvement in the
23 enforcement program and our -- we have an additional focus
24 on the quality of the corrective action system and I have
25 staff working with Frank's staff to re-evaluate what we

1 refer to as the 4500 program, which is our inspection module
2 for looking at corrective action --
3 CHAIRMAN JACKSON: Okay.
4 MR. GROBE: -- and improve that inspection
5 procedure.
6 MR. CALDWELL: Included in the licensee's restart
7 plan are system readiness reviews. These -- to look at
8 design and material condition problems and I think John
9 Sampson mentioned that they were doing these reviews on the
10 21 most risk-significant systems.
11 These reviews form the foundation in the restart
12 plan for bounding the engineering and design issues but to
13 further -- to bound the extent of the engineering problems
14 the region elected to conduct an SSFI on the aux feedwater
15 system and when we communicated that with the licensee,
16 communicated to the licensee, they indicated that they would
17 like to conduct that inspection with our oversight, and they
18 were going to use a third party engineering group to do it,
19 and that is consistent with the program that we have in
20 place.
21 That third party review raised additional
22 operability concerns. We are still -- our portion of the
23 oversight is still ongoing, but it again raised further the
24 question of the extent of condition and brought into
25 question the 21 -- the system readiness reviews for the 21

1 risk-significant systems, because those systems had not,
2 although they had been completed, the reviews had not
3 identified operability issues so to date the systems that
4 independent parties including the NRC, the systems that have
5 been reviewed by independent parties have found operability
6 concerns, but the ones that we have done internally have
7 not, so that is why we still have the really significant
8 question of the extent of condition of all those systems
9 that haven't been independently reviewed.
10 As a result, I think Mr. Powers indicated that
11 they have contracted with a group of industry experts. They
12 chartered an Engineering Issues Review Group to conduct an
13 independent review of all the engineering inspections
14 reviews and evaluations conducted to date. The purpose of
15 this review is to provide recommendations on what further
16 activities may need to be done to bound the extent of the
17 engineering problems, and the region stands ready to review
18 the results, recommendations and further actions stemming
19 from this independent review.
20 I believe it is due to be completed in
21 mid-December. Next slide.
22 Currently the first unit is not expected to start
23 before March of '99, as they indicated on their schedule.
24 We continue with our manual chapter 0350 process. We
25 conduct internal meetings on a weekly basis and public

1 meetings with the licensee on a monthly basis to discuss the
2 status of their issues and any disagreements that we may
3 have where they believe they are and where we think they
4 are.
5 As I said, our objectives are in agreement with
6 the licensee's restart plan. The 0350 restart panel has
7 established 16 technical and programmatic issues to be
8 resolved prior to plant restart, and we have scheduled a
9 number of team inspections to review the licensee's progress
10 toward restart as Commissioner McGaffigan asked whether we
11 are in their schedule or not. We are not shown on their
12 schedule but we are in the schedule and we have been
13 coordinating with them through the 0350 process on when to
14 conduct those inspections. Next slide.
15 The specific NRC restart issues are grouped into
16 three broad categories -- programmatic issues, system and
17 hardware issues, and licensing issues.
18 The programmatic issues that will be reviewed are
19 in the corrective action, surveillance testing, and
20 engineering areas. As stated earlier, the region believes
21 that the greatest challenge currently facing the licensee is
22 understanding and bounding the extent of the engineering
23 problems.
24 The licensee's initiative to conduct an
25 independent engineering review should significantly

1 contribute to re-establishing confidence in the design and
2 reliability of the safety systems.
3 Specific system and hardware issues will be
4 reviewed to ensure that the systems are operable prior to
5 restart including issues associated with the ice condenser,
6 as we discussed.
7 The region continues to conduct a detailed review
8 of D.C. Cook's corrective actions associated with the ice
9 condenser and continues to coordinate with NRR and Region II
10 in the review and evaluation of ice condenser issues at
11 Westinghouse and Region II facilities.
12 Following my presentation, as I said earlier,
13 Cindy Carpenter will present broader actions that the NRC is
14 taking to address ice condenser operability at the nuclear
15 plants.
16 I would like to reiterate that the region stands
17 prepared to review the readiness of D.C. Cook for restart in
18 a timely and objective manner. They have established strong
19 lines of communication with Mr. Powers and his staff through
20 the restart panel and the region and NRR are working closely
21 to resolve the 2.206 petition concerns and licensing issues.
22 COMMISSIONER McGAFFIGAN: The licensing issues,
23 are any of those pacing items? You heard me ask earlier,
24 are they particularly complicated licensing issues or are
25 they straightforward?

1 MS. CARPENTER: There are about five licensing
2 issues right now that we do not have in-house right now. We
3 do not have any restart issues in-house, but we are working
4 to talk the utility. We know what licensing issues have
5 been identified and which ones we need, and at this point in
6 time we don't see any show-stoppers. We will be able to
7 support them.
8 MR. GROBE: We're not critical path today, but to
9 make sure that licensing didn't become critical path, Cindy
10 has a weekly call with the licensee's regulatory assurance
11 organization and meet monthly to go over all the licensing
12 issue.
13 The licensee is currently behind schedule. They
14 have two or three licensing actions that should have been in
15 to us that are not, and we are in regular communication with
16 them. We don't see any critical path issues today.
17 MS. CARPENTER: And there also we have made them
18 aware of what our processing is and the time it takes for us
19 to process, and our technical staff has been made aware of
20 each issue and we are working with them also.
21 MR. CALDWELL: That is an issue that we discuss
22 every public meeting. We go over the specific licensing
23 issues and if they are late and if it were to be that we
24 weren't going to be able to make it, then we would discuss
25 that and they would know. Cindy?

1 MS. CARPENTER: As noted previously in these
2 discussions, deficiencies were identified in the D.C. Cook
3 ice condenser containment.
4 Shortly following this, the Staff initiated a
5 program for corresponding inspections for these issues at
6 the plants in Region II.
7 It should be noted that in addition to the D.C.
8 Cook ice condenser containment plant in Region III the
9 remaining ice condenser plants in the U.S. nuclear industry
10 are located in Region II. Those are McGuire and Catawba,
11 both operated by Duke Power Company and Watts Bar and
12 Sequoyah, both operated by the Tennessee Valley Authority.
13 These inspections of Region II ice condenser
14 containments were consistent with the major programmatic
15 areas of weaknesses identified at D.C. Cook. The
16 inspections included the ice condenser surveillance test
17 program which includes onsite witness of surveillances such
18 as weighing of the ice baskets, visual inspection of the
19 flow passages, and ice basket damage.
20 The ice condenser corrective action program, which
21 includes inspection of the ice baskets and inspection for
22 foreign material, and also the licensee's practices in
23 maintaining its ice condenser design basis as described in
24 the FSAR and other design basis documents. This includes
25 onsite inspection of modifications of the hardware against

1 the design basis.

2 The inspections in Region II are being conducted
3 over the period from May of this year to March of 1999. The
4 inspections consist of portions that can be done with the
5 plant on line and the portion that is done with plant in an
6 outage. To date, inspections have been completed at
7 Catawba, McGuire, and the Sequoyah plants.

8 The last of the plants to have an outage during
9 this period is Watts Bar, which plans to have its next
10 refueling and maintenance outage in the February to March,
11 1999, timeframe.

12 Although issues identified during these
13 inspections of Region II plants were similar to those
14 encountered at D.C. Cook, it is important to note that these
15 issues were not to the extent as those found at D.C. Cook.
16 These issues, filed at the Region II plants included ice
17 basket flow channel blockage, to bring in the ice baskets
18 and dented baskets, but again to a lesser extent than those
19 found at D.C. Cook.

20 The extent of the problems at these other
21 facilities did not raise operability issues with the
22 exception of Catawba. The Catawba licensee shut down Unit 1
23 due to emergent material condition concerns with ice
24 blockage in one of the 24 bays.

25 The licensee was subsequently able to remedy the

1 problem and restart the unit.

2 Our experience with these inspections has

3 highlighted several ice condenser containment technical

4 specification and interpretation concerns and potential

5 ambiguities. The NRC's Staff's Technical Specification

6 Branch has addressed this concern with the joint NRC

7 Technical Specifications Task Force Owners Group.

8 The Technical Specifications Task Force is the

9 mechanism that is in place to propose modifications to the

10 improved standard tech specs. We understand that the three

11 ice condenser containment utilities and Westinghouse are

12 each contributing to this initiative and that the

13 Westinghouse Owners Group is planning to submit to the

14 Technical Specifications Task Force proposed changes to the

15 improved standard tech specs in the near future.

16 The NRR staff is prepared to review their

17 submittal. We expect to consider pursuit of these issues

18 with the industry group in the forthcoming months.

19 That concludes my remarks.

20 DR. TRAVERS: That concludes the staff's

21 presentation.

22 CHAIRMAN JACKSON: Okay. Thank you. Since we

23 have referred to the 2.206 petition and the Union of

24 Concerned Scientists is the petitioner in that regard, and I

25 know he was not prepared to speak, but I would like to offer

1 Mr. Lochbaum an opportunity to make any comments that he
2 wishes to make.
3 MR. LOCHBAUM: I don't have any. Thank you.
4 CHAIRMAN JACKSON: You have none. Okay. Well,
5 thank you very much. Commissioner Dicus.
6 COMMISSIONER DICUS: Let me just make a quick
7 comment. We are aware, of course, as you noted, that part
8 of the reason some of the issues were not found by us sooner
9 is that the emphasis had been on operations and only on the
10 engineering aspects that supported operations, and that we
11 are now focusing attention on design basis and configuration
12 control, et cetera. But my caution is, and I have said this
13 before, I hope, not at the total expense of looking at
14 operations, that we are becoming balance in how we look at
15 the plants. Just that word of caution.
16 CHAIRMAN JACKSON: Commissioner McGaffigan.
17 COMMISSIONER McGAFFIGAN: No.
18 CHAIRMAN JACKSON: Commissioner Merrifield.
19 COMMISSIONER MERRIFIELD: No.
20 CHAIRMAN JACKSON: Well, thank you very much. The
21 Commission thanks both American Electric Power and the NRC
22 staff for a very informative briefing. It is my hope that
23 both the licensee and the regulator can learn from the
24 experiences at D.C. Cook. In particular, and we have all
25 spoken to it in one way or another, it would appear that

1 current activities to improve the NRC assessment and
2 inspection programs may benefit from determining and
3 considering the lessons learned at D.C. Cook, focusing on
4 what could have been done to identify the sorts of problems
5 we have been discussing sooner.
6 You know, from my perspective, the issues that we
7 have heard today highlight the fact that performance
8 indicators, at least as envisioned today, or as discussed to
9 this point, will not cover the waterfront, and I think Mr.
10 Miraglia spoke to that. And so it would appear that
11 performance of some areas of endeavor, such as engineering,
12 certainly can not be based -- or inferred based on
13 macroscopic metrics, and, so, inspection, perhaps with some
14 focus, heightened focus in certain areas, appears to remain
15 a necessary burden in an effort to ensure that adequate
16 protection is maintained. And I think the questions relate
17 to engineering efficacy and strength where design basis
18 issues fit into a risk-informed baseline inspection program,
19 and how do we determine the efficacy of licensees'
20 corrective action programs as we are moving to having more
21 dependence on those, not just in terms of problem
22 identification and, as you would say, Mr. Miraglia, root
23 cause, or program reviews, but, in fact, on the efficacy of
24 those.
25 Obviously, the caution that Commissioner Dicus has

1 introduced is well placed, but we have a tendency to run
2 completely one way or the other. But in the end, I always
3 like to use the analogy of driving a car, and that is that,
4 you know, we all can drive a car, we have a license, you
5 know, we wear corrective lenses as we need it. We watch out
6 for the other guy. Presumably, we don't drive under the
7 influence. But in the end, we are operating machinery.
8 And, therefore, operational safety and whether the machine
9 does what you expect and want it to do, go hand in glove.
10 And so I think that kind of balances what we are seeking to
11 achieve as we re-normalize our regulatory approach.
12 We obviously will continue to monitor the progress
13 made at D.C. Cook. It would appear that both the licensee
14 and the staff have well established plans for restart
15 action, and so we would encourage you to go forward, each
16 with a questioning attitude, focusing on results, because
17 the fundamental goal is to find and correct conditions, as
18 necessary, to restore reasonable assurance that the systems
19 will perform as designed when called upon to do so,
20 particularly in the event of an accident.
21 Questioning that which you see and promptly
22 correcting the problems you encounter is one way to
23 reestablish and maintain that assurance, and I think that is
24 as much a message for the licensee as for us. And, so,
25 unless my colleagues have any closing comments, we stand

1 adjourned. Thank you.

2 [Whereupon, at 4:12 p.m., the meeting concluded.]

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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
D.C. COOK NUCLEAR POWER PLANT
PUBLIC MEETING

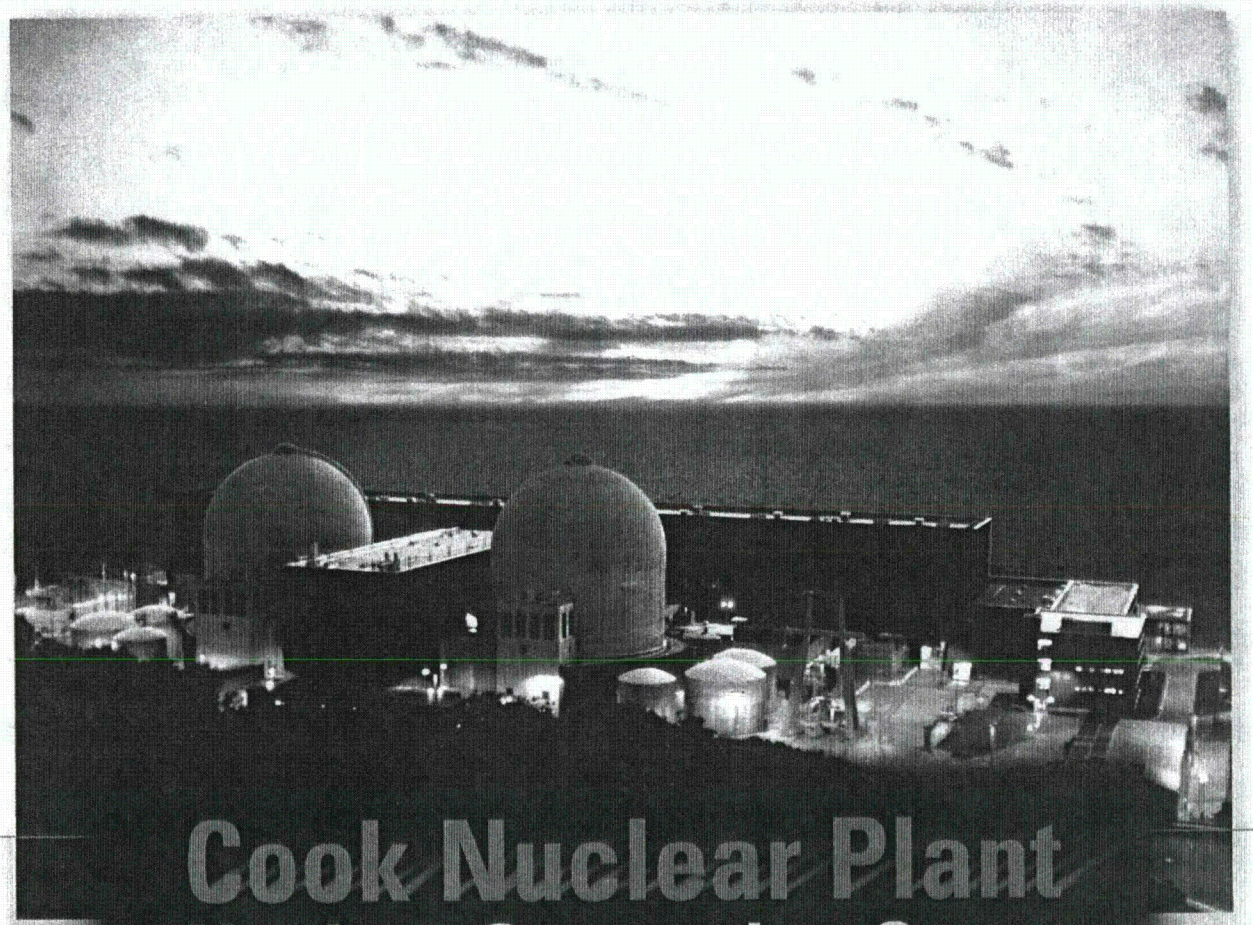
PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: Monday, November 30, 1998

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: John Ulmer

Reporter: Jon Hundley



Cook Nuclear Plant

Nuclear Generation Group

Commission
Meeting
November 30, 1998

AEP AMERICAN ELECTRIC POWER
AEP: America's Energy Partner™

[redacted]

Dr. E. Linn Draper, Jr.

Chairman, President, and CEO

AEP AMERICAN ELECTRIC POWER

[redacted]

Robert P. Powers

Senior Vice President

AMERICAN ELECTRIC POWER

Overview

- Assessment of Cook Nuclear Plant
- Improved management effectiveness
- Challenge in resolving engineering issues
- Vision for the future

Assessment of Cook Nuclear Plant

- Units shutdown September 1997
- Historic cyclic performance
- Insular perspective
- Struggling engineering organization
- Understanding of and maintenance of the design basis
- Backlog of drawings and condition reports

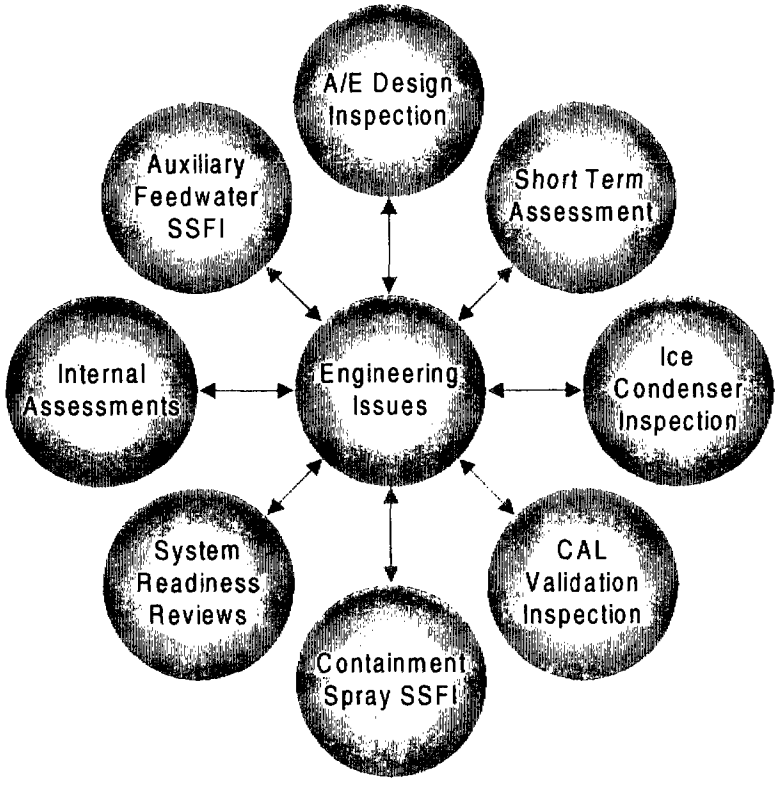
Assessment of Cook Plant (cont.)

- Core group of capable and dedicated managers and employees
- Comprehensive restart plan
- Good overall materiel condition of the plant
- AEP support and commitment of resources

Improved Management Effectiveness

- Additions and changes in management team
- Management effectiveness training
- Communication to Cook employees
- Emphasis on results, not efforts

Key Engineering Issues



- Issues
  - 50.59 program
  - design change process
  - calculations
  - instrument uncertainty
  - plant procedures
  - surveillance program
  - design /licensing basis
  - FSAR review/update
  - materiel condition
  - GL 89-10 -- MOVs
  - auxiliary feedwater SSFI

Vision for the Future

- "World class accountability-based organization."
  - strong sense of accountability
  - passion for self-improvement

[redacted]

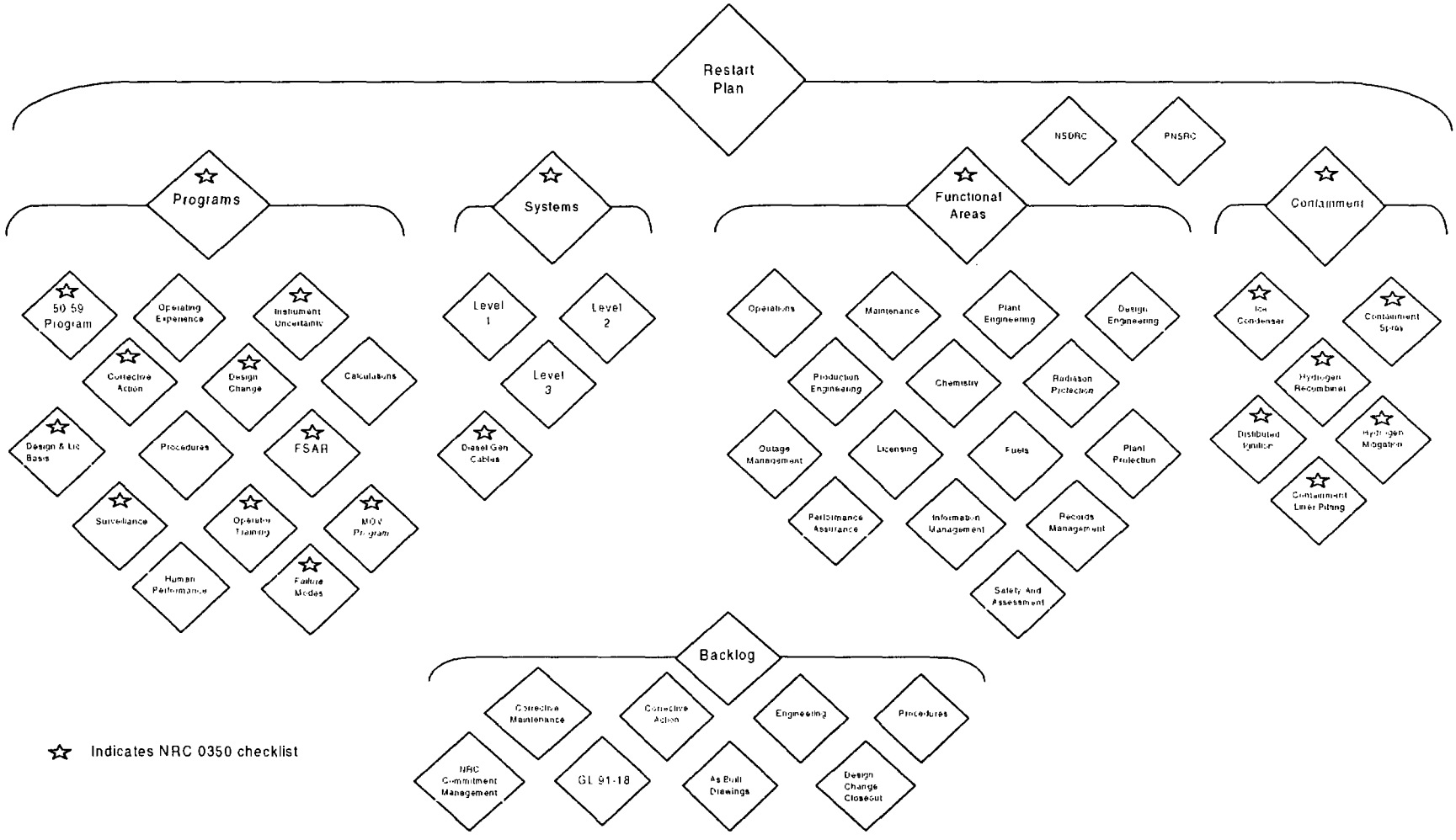
John R. Sampson
Site Vice President

AMERICAN ELECTRIC POWER

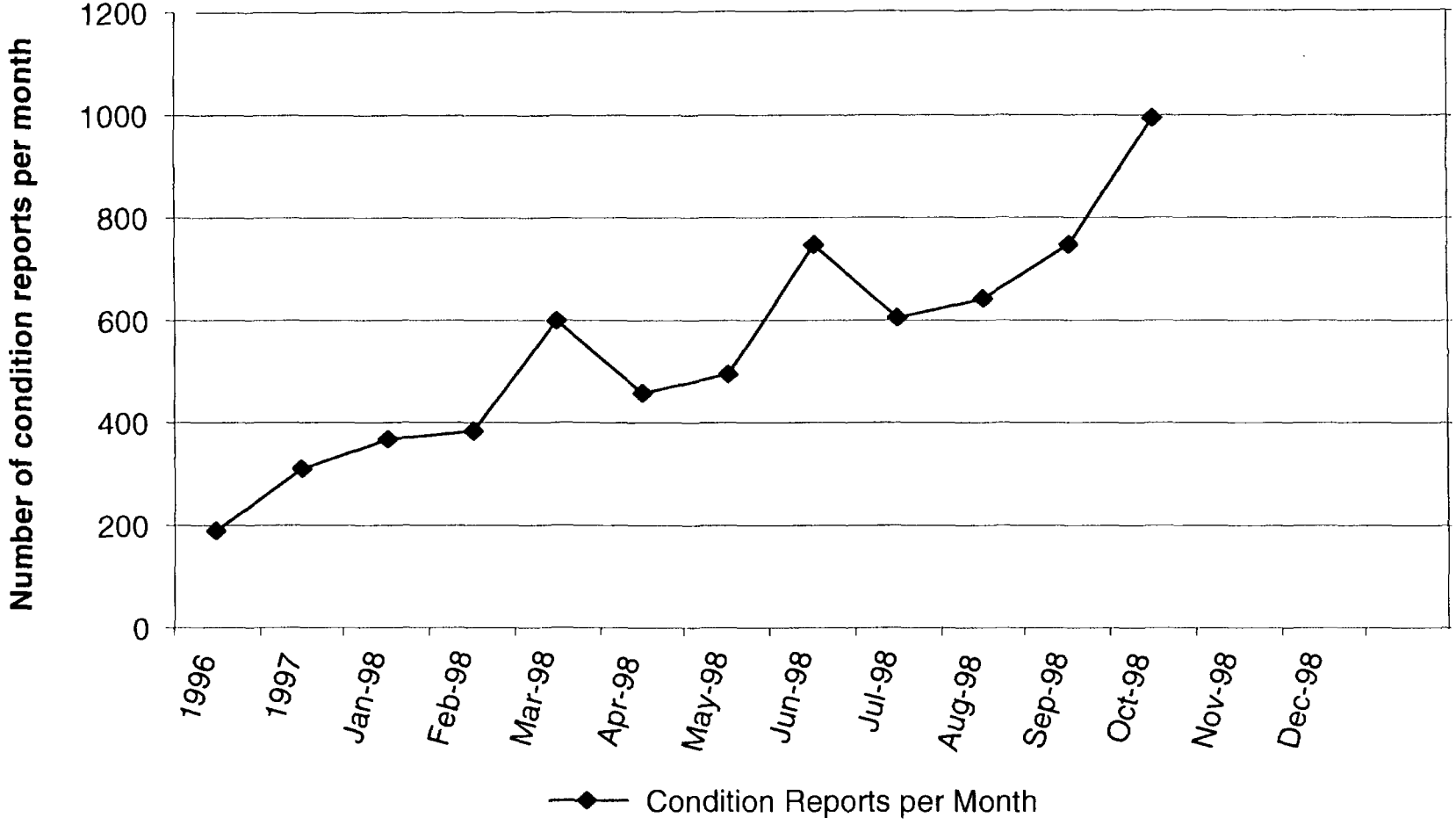
Overview

- Restart Plan and Strategies
- Restart schedule
- Ice condenser

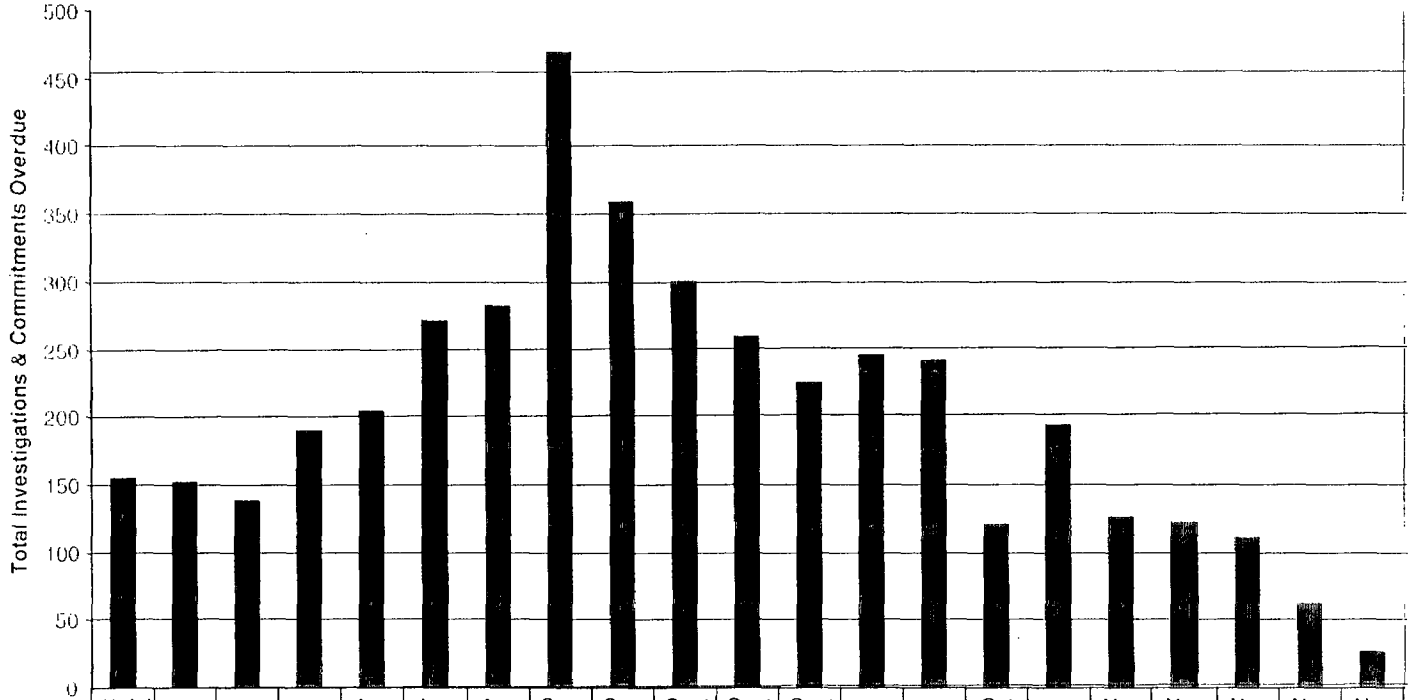
Restart Strategies



Condition Reports Initiated

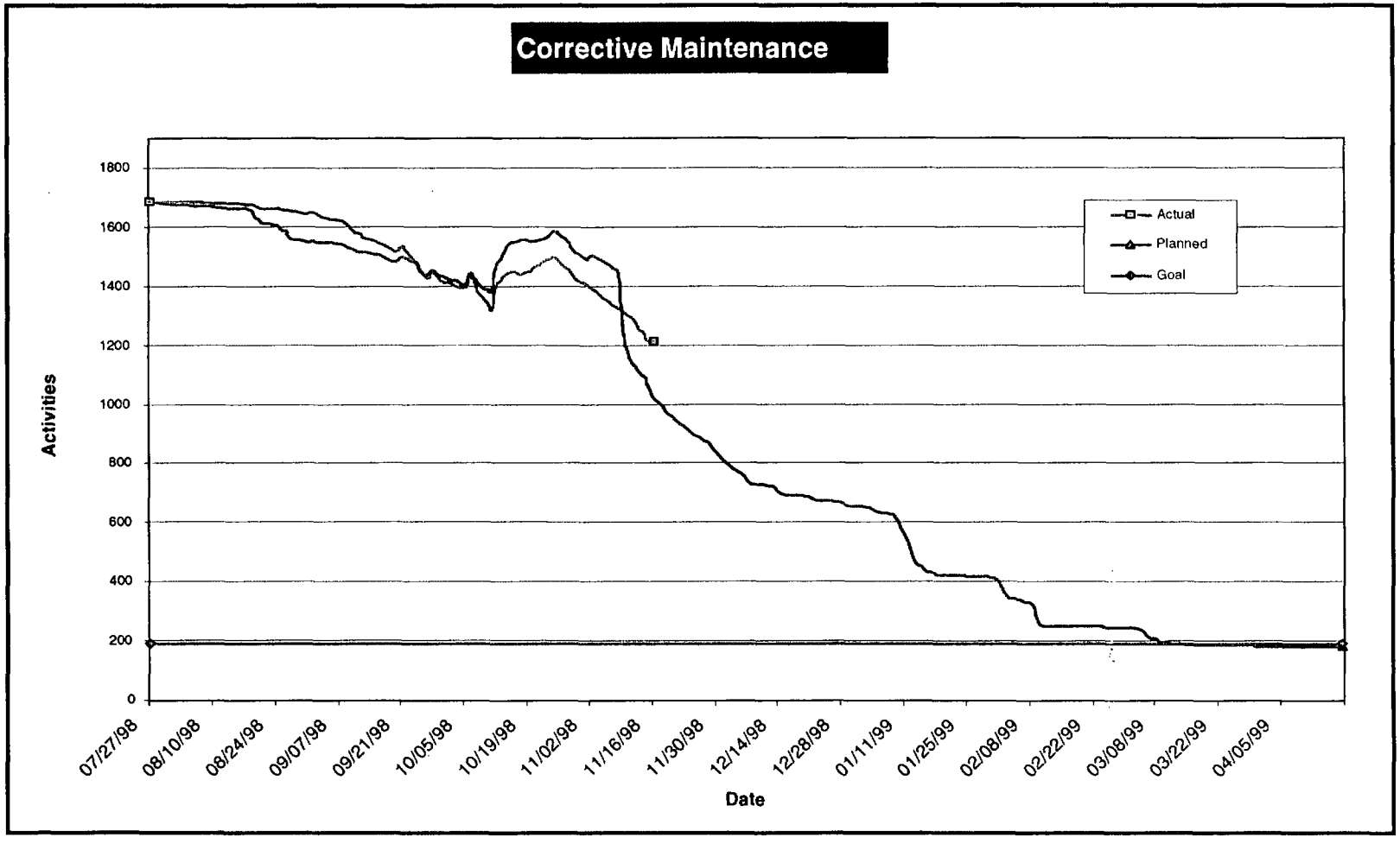


Corrective Action Overdue Backlog

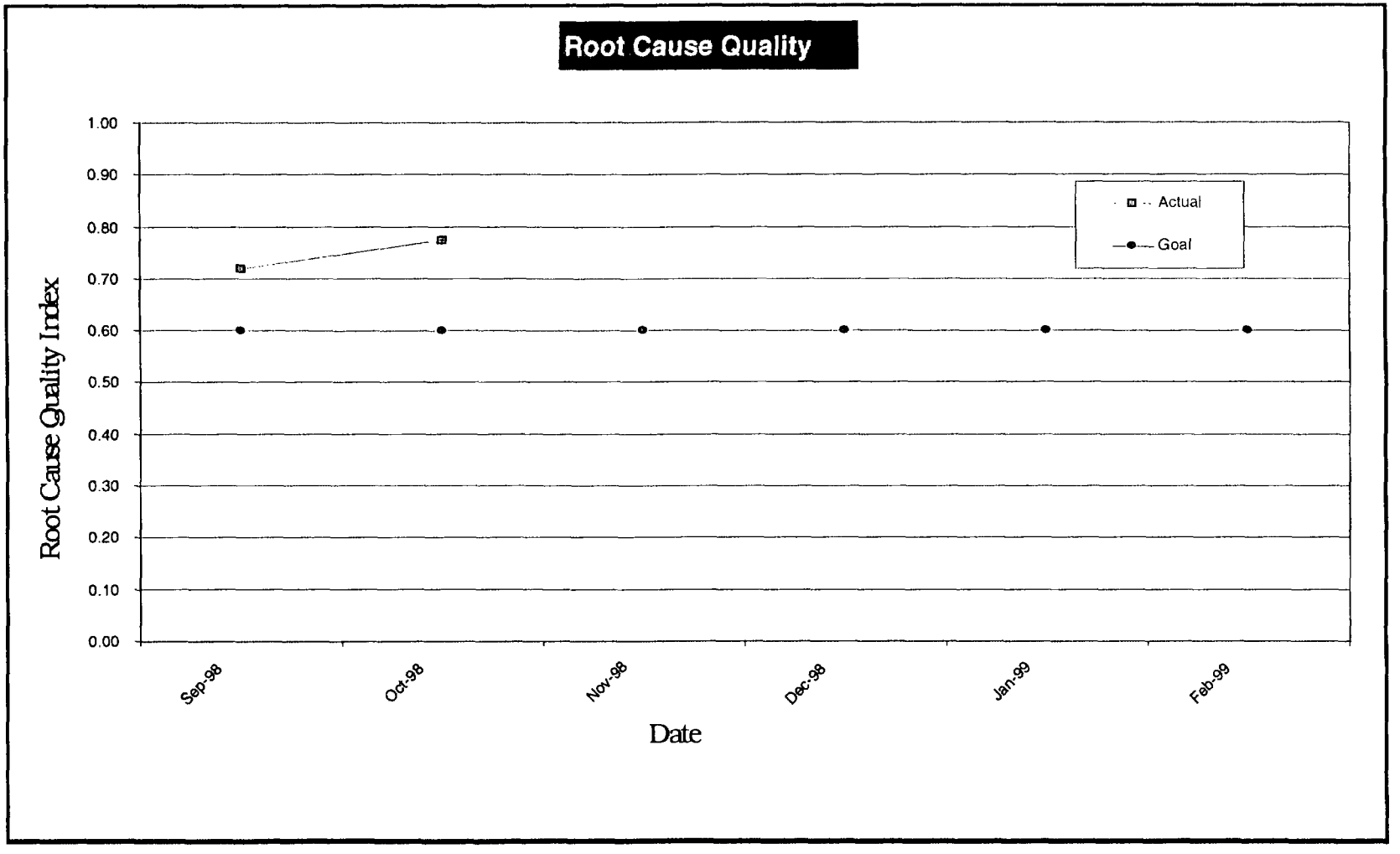


	** Jul 16 **	Jul 21	Jul 28	Aug 4	Aug 11	Aug 18	Aug 25	Sept 1	Sept 8	Sept 15	Sept 22	Sept 29	Oct 7	Oct14	Oct 28	Nov 3	Nov 11	Nov 13	Nov 16	Nov 17	Nov 18
■ total overdue	155	152	139	191	206	272	283	470	359	301	260	226	247	242	121	195	127	123	112	63	27

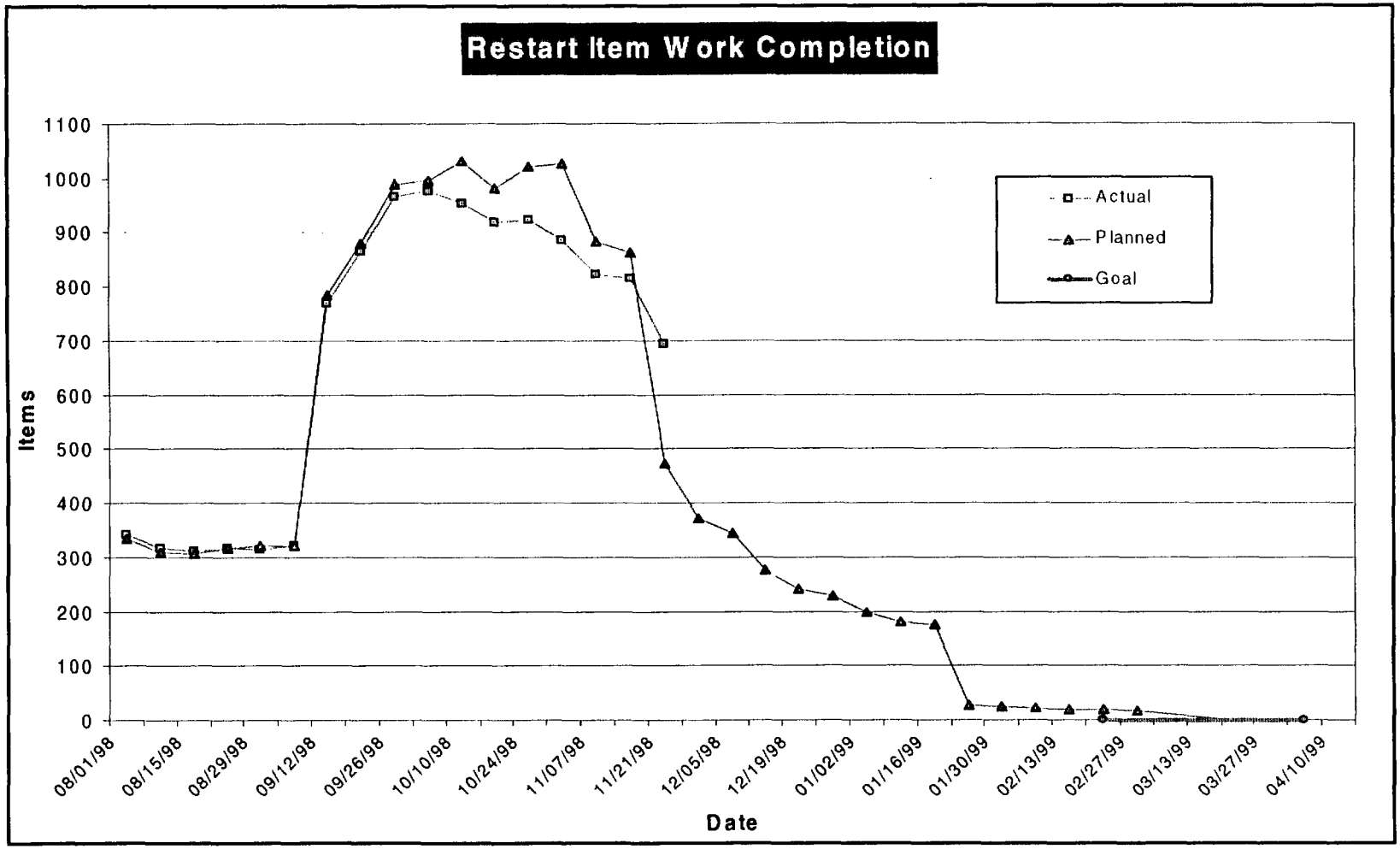
Corrective Maintenance Metric



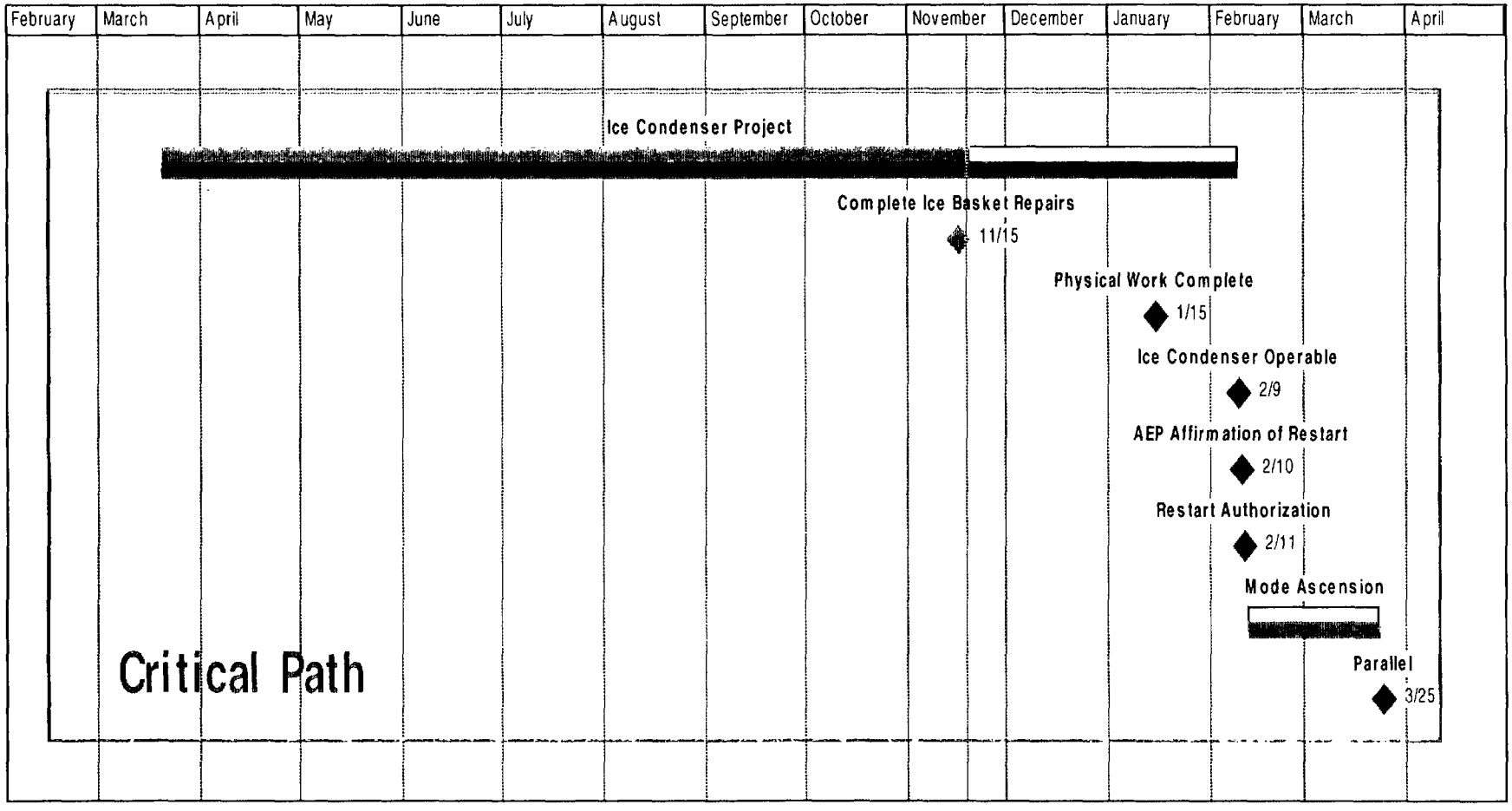
Root Cause Quality Metric



Total Restart Items



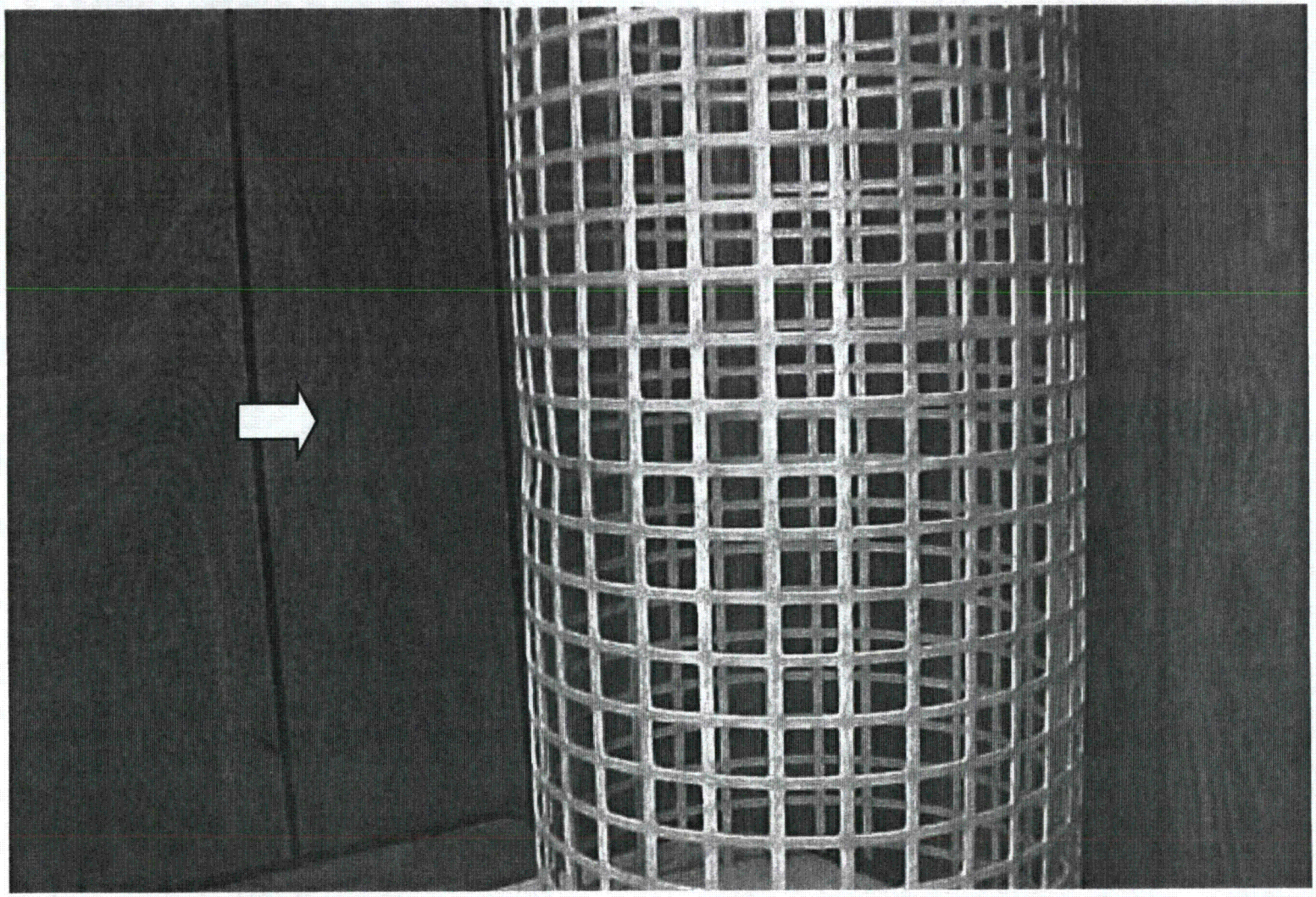
Restart Schedule



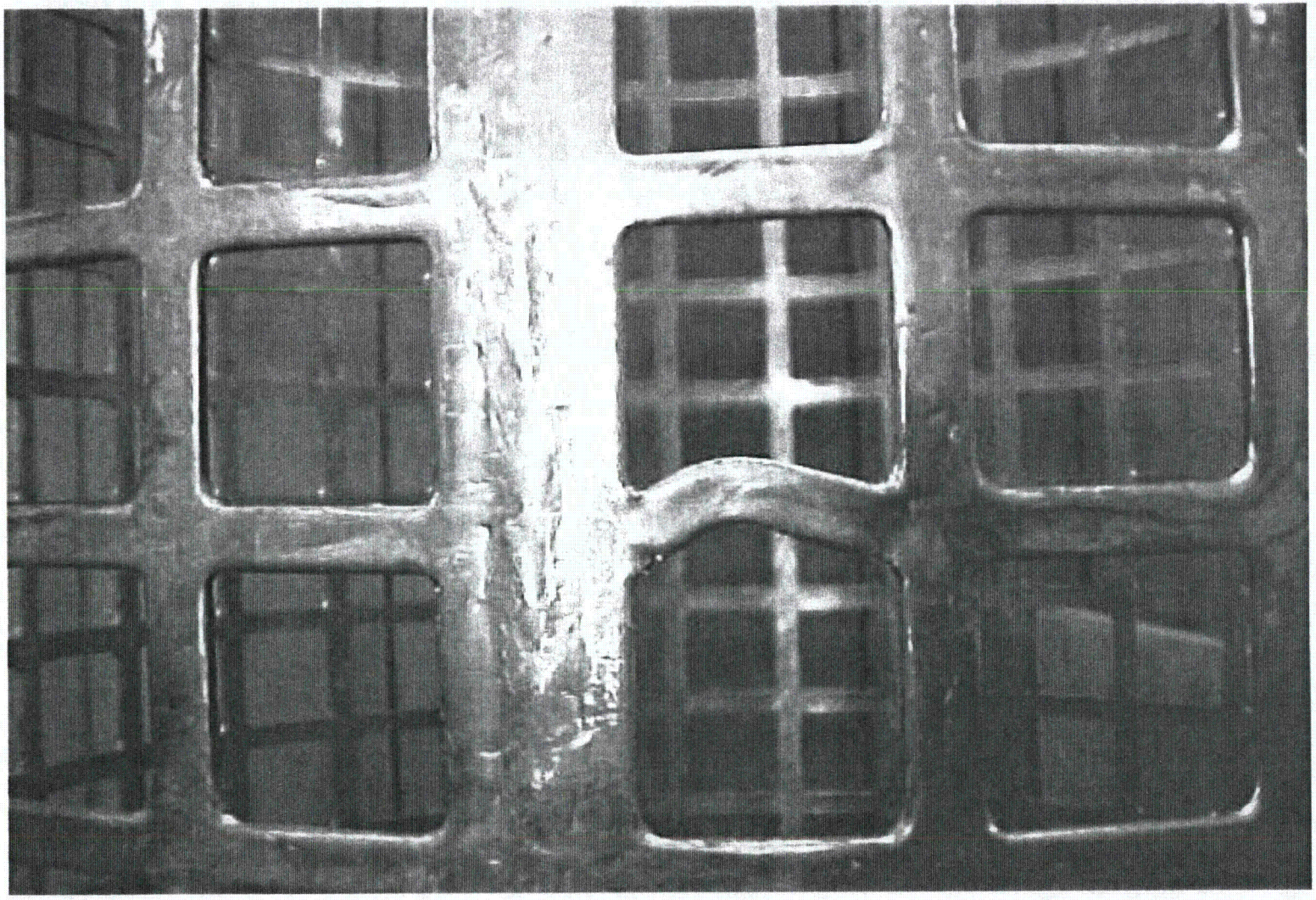
Ice Condenser - Major Improvements

- Ice basket restoration
- Ice
- Top deck doors
- Lower inlet doors/shock absorbers
- Air handling units

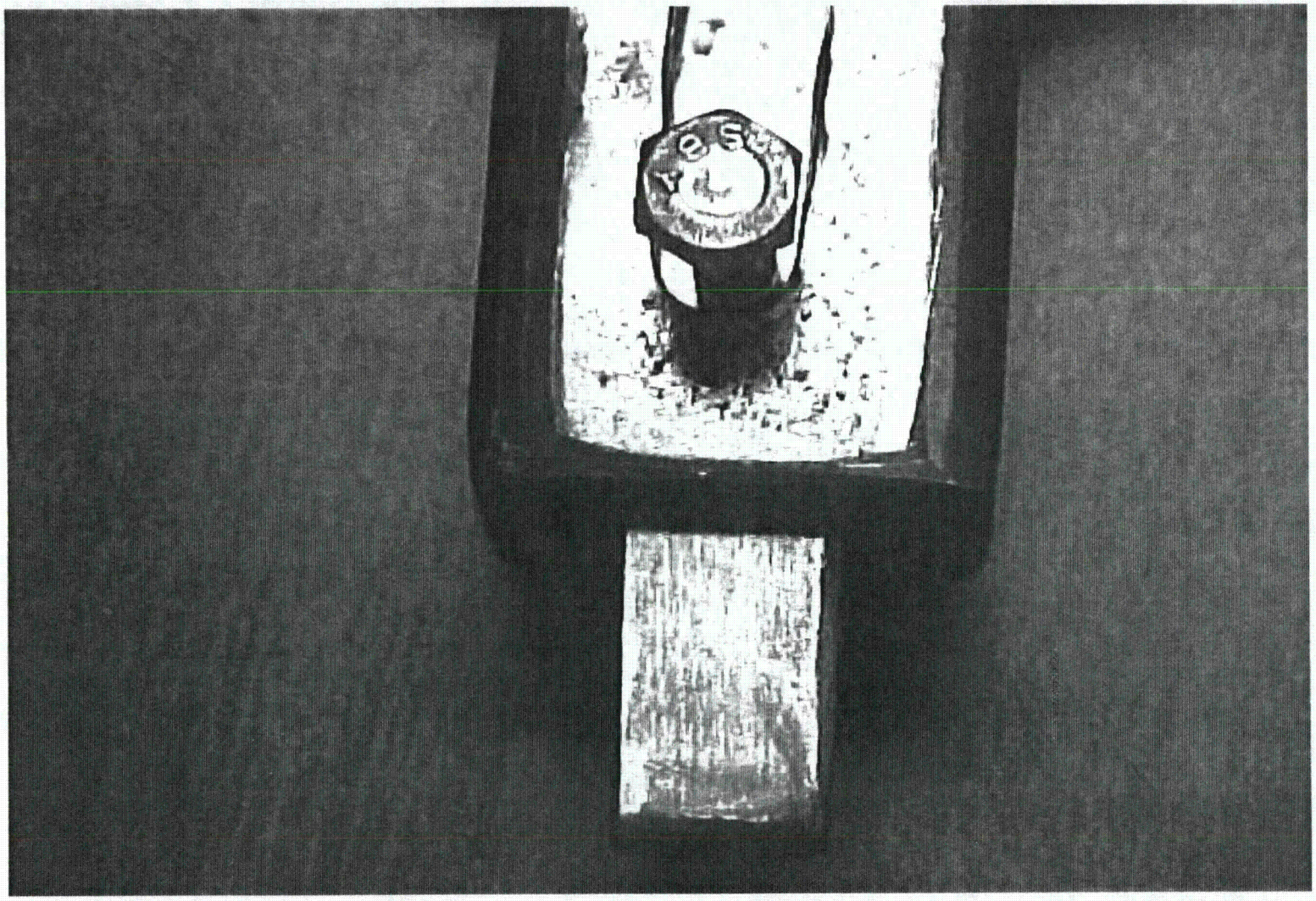
Dented Basket



Pulled Ligament



New Flat Face Lifting Rig



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Concluding Remarks

UNITED STATES NUCLEAR REGULATORY COMMISSION

D. C. COOK ISSUES

NOVEMBER 30, 1998

D. C. COOK

A. DESIGN ISSUES IDENTIFIED

B. NEW ISSUES / BROADER CONCERNS

C. CORRECTIVE ACTION PLANS

D. CURRENT STATUS

E. NRC RESTART ISSUES

A. DESIGN ISSUES IDENTIFIED

- Concerns regarding Engineering result in Special Inspections (1996-1997)
- Architect Engineering Inspection identifies Significant Design Issues
- Licensee initiates corrective actions and shuts down both units
- NRC issues Confirmatory Action Letter

B. NEW ISSUES / BROADER CONCERNS

- 10 CFR 2.206 Petition
- D.C. Cook inspection of the containment spray system
- Ice Condenser and Engineering Corrective Action inspections

C. CORRECTIVE ACTION PLANS

- D.C. Cook comprehensive restart plan
- NRC Manual Chapter 0350 Oversight Panel
- Auxiliary Feedwater - Independent Safety System Functional Inspection
- D.C. Cook charters Engineering Issues Review Group

D. CURRENT STATUS

- The D.C. Cook Restart Plan is integrated with NRC Oversight Panel restart issues.

- The NRC Oversight Panel has established 16 technical and programmatic issues to be resolved prior to plant restart.

E. NRC RESTART ISSUES

- Programmatic Issues
- System and Hardware Issues
- Licensing Issues

ICE CONDENSER CONTAINMENT

- DEFICIENCIES IDENTIFIED IN DC COOK:

  - DEGRADED CONDENSING CAPABILITY
  - STRUCTURAL DAMAGE
  - IMPROPERLY DESIGNED MODIFICATIONS

- CORRESPONDING REGION II INSPECTIONS FOR CATAWBA, McGUIRE, SEQUOYAH, WATTS BAR

  - SURVEILLANCE TEST PROGRAM
  - CORRECTIVE ACTION PROGRAM
  - MAINTENANCE OF DESIGN BASIS

- TYPICAL ISSUES: FLOW CHANNEL BLOCKAGE, DEBRIS, DENTED BASKETS