

ORIGINAL
UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Title: **BRIEFING ON OPERATING REACTOR
OVERSIGHT PROGRAM AND STATUS OF
IMPROVEMENTS IN NRC INSPECTION
PROGRAM - PUBLIC MEETING**

Location: **Rockville, Maryland**

Date: **Thursday, February 13, 1997**

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1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION

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4 BRIEFING ON OPERATING REACTOR OVERSIGHT PROGRAM AND
5 STATUS OF IMPROVEMENTS IN NRC INSPECTION PROGRAM

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7 PUBLIC MEETING

8
9 Nuclear Regulatory Commission
10 One White Flint North
11 Rockville, Maryland
12

13 Thursday, February 13, 1997
14

15 The Commission met in open session, pursuant to
16 notice, at 2:05 p.m., Shirley A. Jackson, Chairman,
17 presiding.

18 COMMISSIONERS PRESENT:

19 SHIRLEY A. JACKSON, Chairman of the Commission
20 KENNETH C. ROGERS, Commissioner
21 NILS J. DIAZ, Commissioner
22 EDWARD McGAFFIGAN, JR., Commissioner
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1 STAFF PRESENT AND PRESENTERS SEATED AT THE COMMISSION TABLE:

2 JOHN C. HOYLE, Secretary of the Commission

3 KAREN D. CYR, General Counsel

4 HUGH THOMPSON, JR., Acting EDO

5 FRANK MIRAGLIA, Acting Director, NRR

6 FRANK GILLESPIE, Director, Inspection & Support
7 Program, NRR

8 ROY ZIMMERMAN, Associate Director for Projects,
9 NRR

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P R O C E E D I N G S

[2:05 p.m.]

CHAIRMAN JACKSON: Good afternoon, ladies and gentlemen. We are pleased to have the NRC staff here to brief the Commission on the operating reactor oversight program. This is the first of three Commission meetings addressing different aspects of the operating reactor oversight program.

The subject of this meeting is the Status of Improvements in the NRC Inspection Program. The subjects of the other two Commission meetings are Analysis of Quantifying Plant Watch List Indicators, at which time the staff will discuss the Arthur Anderson review of the senior management meeting process, and the Millstone and Maine Yankee lessons learned as they relate to policy issues affecting the regulatory process.

These meetings are scheduled for February 18 and 19, respectively.

I would just ask you, the staff, as you discuss areas of improvements, please provide for the Commission the results which have been achieved and/or examples which demonstrate improvement or are aimed at demonstrating improvement, so that if activities are in progress, you can provide a time table. Please provide a time table for the completion of the activities.

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1 I understand that copies of the slides are
2 available at the entrance to the room. Unless fellow
3 Commissioners have any comments, please begin, Mr. Thompson.

4 MR. THOMPSON: Thank you, Chairman Jackson and
5 Commissioners. Before we go into the presentation, I should
6 remark for you and members of the public. In our efforts to
7 upgrade the TV coverage of the Commission dialogue, we have
8 downgraded. The motherboard didn't fit up and we burned it
9 out. So we now have a camera in the corner over here. We
10 will have a general view of the proceedings, but slides will
11 still be presented. Hopefully the public will be able to
12 follow along without much trouble.

13 With me at the table this afternoon are Mr. Frank
14 Miraglia, who is the Acting Director of NRR; Mr. Frank
15 Gillespie, Director of the Division of Inspection and
16 Support Programs, and Mr. Roy Zimmerman, Associate Director
17 for the Reactor Projects.

18 We are here to brief the Commission on the
19 operating reactor oversight program, as you said. The
20 reactor oversight program is continuously evolving.
21 Self-assessments, both external and internal, have
22 identified problem areas which are being addressed by a
23 number of actions.

24 These actions include improvement in inspector
25 training and guidance as well as our performance assessment

1 methodology and criteria. These actions, combined with
2 initiatives that were underway prior to the more recent
3 review, will enhance the staff's ability to identify safety
4 issues and assess licensee performance.

5 In addition, the recent reorganization and
6 appointment of the Deputy EDO for Regulatory Effectiveness,
7 Mr. Ed Jordan, will play a prominent role in future
8 oversight of the reactor program.

9 This completes my opening remarks. I would like
10 to turn the briefing over to Frank Gillespie, who will do
11 the major portion of the briefing dealing with inspection
12 efforts, and Mr. Zimmerman will address those portions
13 dealing with the project management.

14 CHAIRMAN JACKSON: Thank you.

15 MR. GILLESPIE: Since Hugh has already covered the
16 objectives, if I could go right to slide three, which is
17 just to outline the organizational structure of the overall
18 program.

19 The focus today is on the inspection program. The
20 other presentations next week are really going to touch upon
21 licensing aspects and other aspects.

22 [Slide.]

23 MR. GILLESPIE: NRR as the headquarters function
24 develops policies and procedures, but we are by our own
25 procedures very closely integrated comment-wise at every

1 step with the regional offices because they are the
2 implementers of the program and they do the chief
3 implementation and the real inspection.

4 The regions do implement the majority of the
5 program.

6 Other organizations provide independent review.

7 The new Deputy Executive Director position is
8 expected not only to continue doing what AEOD did with the
9 lessons learned from DETs and lessons learned from case
10 studies, but that will also be very much, we would expect,
11 enhanced in our interface with them.

12 CHAIRMAN JACKSON: Let me ask you a question.
13 What are some of the feedback processes to which you refer,
14 or feedback mechanisms in the second bullet?

15 MR. GILLESPIE: The regions are not hesitant to
16 tell us that we have made an error. We get feedback on the
17 ability to carry out a procedure where we actually in
18 coordination with the regions have published an inspection
19 procedure and we are finding it's not getting an objective
20 we need. We get feedback from the senior residents and
21 residents. We periodically go out and talk to them
22 individually and ask how are these aspects of the program
23 going.

24 A most recent example. I did a follow-up visit to
25 Maine Yankee on the testing question: What did it take to

1 find that one broken wire by that contact? What would it
2 really take? How would that impact the program? Could we
3 look in that much detail at every other facility?

4 So we are going out trying to get direct feedback
5 from the people carrying out the program, which will tend to
6 lead us into maybe a more in-depth audit of what we are
7 doing and how we are doing, and potentially then a rewrite
8 of a procedure or re-promulgation of a manual directive.

9 MR. ZIMMERMAN: If I can add a thought. When
10 senior managers from the region and from headquarters also
11 go out and visit the sites it is typical for them to have
12 dialogues with licensee management as well and receive
13 feedback at that time on their view on the inspection
14 program as well.

15 CHAIRMAN JACKSON: But you don't have formalized
16 feedback processes as such.

17 MR. MIRAGLIA: We have both, Madam Chairman. I
18 think what Frank and Roy were talking about are somewhat
19 informal. As part of the agency response to the reg impact
20 survey, there are a number of mechanisms for getting
21 feedback: requiring the inspectors' supervision to get out
22 to the facility and explore with licensing managers their
23 perspective of how the program is going, strengths and
24 weaknesses, and there is a feedback mechanism.

25 Is it an annual report now, Frank, to the

1 Commission on some of those aspects as well?

2 MR. GILLESPIE: Yes.

3 MR. MIRAGLIA: So we have formal processes as
4 well.

5 CHAIRMAN JACKSON: But then you say other
6 organizations provide independent review. What does this
7 mean? Is this headquarters organizations reviewing the
8 regions?

9 MR. MIRAGLIA: I think Frank's intent and the
10 intent on that slide is to say that we have other
11 independent audits from, say, the GAO, our own IG, that also
12 provide oversight, and we look at that, and that's a
13 feedback mechanism.

14 CHAIRMAN JACKSON: We do have this new Deputy
15 Executive Director for Regulatory Effectiveness, et cetera,
16 and you said that this organization will play a prominent
17 role. Do you intend to have some kind of internal
18 assessment? There is self-assessment by the organizations
19 themselves, but do you intend for this organization to
20 provide --

21 MR. THOMPSON: Joe Callan and I have discussed
22 some of the ways we would do our own assessments. As you
23 know, in the materials area we do kind of impact program
24 review where we go out and review against a set of criteria
25 the regional offices. We are looking at potentially using

1 that model as an approach to go by and look at the regional
2 offices with respect to the reactor program. We have not
3 formalized anything specifically on that yet. I am looking
4 forward to Joe coming up here so I can be looking at things
5 like that. I have not had an opportunity recently to look
6 at those type activities.

7 MR. MIRAGLIA: But we do have our own
8 self-assessments. I think internally in the program we
9 would go out and look at our program and self-assessments.
10 We have done that on a periodic basis. That would include a
11 visit to a facility or to facilities within a region,
12 discussions with the residents, discussions with the
13 licensees, and looking at headquarters.

14 So we do have those kinds of assessments as well,
15 and I would think as a program office that we would continue
16 to have self-assessments based upon routine
17 self-assessments, and if there are indications from other
18 places that we have weaknesses, that we would try to go out
19 and look at them.

20 CHAIRMAN JACKSON: It strikes me -- and I think
21 Commissioner Diaz has a comment or a question -- that what
22 you have essentially described is a mechanism where the
23 program offices assess what goes on in the regions, but the
24 program offices themselves do those self-assessments. The
25 question is, is there any regularized way of having a

1 quasi-independent review of the program offices' role in
2 reactor oversight?

3 MR. THOMPSON: I believe the answer to that is
4 yes. In the materials program we do look at some of the
5 activities in headquarters as part of the overall
6 programmatic review, kind of doing self-assessments with
7 those same criteria we use to evaluate the regions and the
8 agreement states.

9 CHAIRMAN JACKSON: All I am really talking about
10 is consistency of how assessments are done. There is
11 self-assessment and then there is assessment by others, peer
12 assessments. So you have described a food chain where
13 everyone self-assesses and everybody is assessed except the
14 program offices in terms of someone else assessing them.

15 MR. THOMPSON: Obviously the Deputy EDO for
16 Regulatory Effectiveness is a --

17 CHAIRMAN JACKSON: That's the intent here.

18 MR. THOMPSON: That would not be the only thing.
19 We would obviously be doing some of our own assessment. I
20 don't want to speak for Ed. He can obviously speak well for
21 himself, but that is the intent. That organization would
22 also look specifically at how the program offices are
23 carrying out their functions, and that program is being
24 developed now by Ed and his staff.

25 CHAIRMAN JACKSON: Commissioner Diaz.

1 COMMISSIONER DIAZ: Just a comment on
2 Mr. Gillespie's statement that the regions are very candid
3 in providing criticism of the office. I hope that is not an
4 open loop, that you close the loop by being equally critical
5 of the regions. In this way you actually close that loop in
6 the feedback, but it was not implied in your statement.
7 They actually do come back to the regions; is that correct?

8 MR. GILLESPIE: Yes, it does.

9 CHAIRMAN JACKSON: Commissioner Rogers.

10 COMMISSIONER ROGERS: On that word "oversight" in
11 the Deputy Executive Director of Regulatory Effectiveness,
12 do you really mean assessment there? Is that what you mean
13 by oversight?

14 MR. THOMPSON: That is my sense of it. It is not
15 any kind of day-to-day oversight activities.

16 COMMISSIONER ROGERS: You really mean assessment
17 when you say "future oversight"?

18 MR. THOMPSON: Right. I think that's just the
19 title.

20 COMMISSIONER ROGERS: It's just a question of what
21 the relationships are between the organizations.

22 CHAIRMAN JACKSON: You mean assessment.

23 MR. THOMPSON: Yes.

24 [Slide.]

25 MR. GILLESPIE: If we go to slide four, which we

1 have basically covered, we do have a formal process of
2 assessing the regions with a team of people going in each
3 year with predetermined criteria. We in fact generate a
4 written report which we supply to the region for comment.
5 We do this every spring.

6 We also are assessing not only the region but
7 ourselves when we are looking at it, because inevitably you
8 will find two types of problems when you are looking at
9 someone implementing your program.

10 One is they have implemented the program and it is
11 not the program you thought you wrote, and therefore you
12 have program problems where clarifying guidance is needed or
13 making some adjustments. On the other part you might just
14 have problems with implementation.

15 We do visit, as Frank said, several facilities,
16 interview people in the regions, the division directors, and
17 we are getting two kinds of feedback. One is programmatic
18 feedback and one is on the direct implementation in that
19 region itself.

20 And we compare across regions to look at
21 consistency in implementation to see ourselves if we are
22 getting the depth and scope we thought we should get. That
23 is done once a year with every region, and we do share the
24 results. We are very open with them on that.

25 We do special reviews also where we see particular

1 problems. An example would be we saw particular problems in
2 how we as an agency were dealing in inspection space with
3 safety assessment quality verification. So we did a look at
4 safety assessment quality verification, how we are carrying
5 it out, is it meeting the objectives, and we are now taking
6 some corrective actions on that, and in fact recently issued
7 some changes to inspection procedures where basically we
8 felt that the program was being carried out more on a
9 piecemeal basis. And the program allowed that.

10 The procedure allowed different pieces to be just
11 added up to say we meet the whole, but from recent
12 inspection results we are finding that when you had a group
13 of people go out and do the procedure, all at once you had a
14 much better picture of safety assessment quality
15 verification of a licensee, and that came through in some
16 inspections we did focusing on this at both Fermi and
17 Crystal River.

18 So not only do we do the annual audit, but we do
19 special audits where we see a problem starting to evolve or
20 have some insights from some other source that we need to
21 look at it. Then we also do follow-up on that to see that
22 we are achieving the end we thought we got with it. That is
23 done on a continuing basis.

24 We do do direct observations with SALP, PPRs.
25 This all comes from the same basic branch and organizational

1 unit, and it is all integrated together. From those
2 observations you tend to get the special reviews.

3 CHAIRMAN JACKSON: Who actually performs the
4 observations?

5 MR. GILLESPIE: They are all coming out of the
6 inspection program branch. That is our primary focus. We
7 also have all the managers. Basically division directors
8 and above in NRR periodically go out and sit in on SALP
9 meetings as observers to see how they are going on. We get
10 feedback also from that process and we get feedback because
11 anyone who is a SALP board chairman in any region is
12 supposed to observe a SALP board in a different region. So
13 we also get feedback from them. We have got it covered from
14 different layers. When the information coming back from
15 these people starts to correlate together, then we are off
16 taking action.

17 CHAIRMAN JACKSON: How do you solicit feedback
18 from industry and the public?

19 MR. GILLESPIE: As Frank said, we have a formal
20 process in a form. It is typically dominated by the
21 regional managers who are going out to see what the
22 residents are doing or visiting the site which asks them to
23 sit down one on one with a licensee representative and
24 basically try to ask him, does he have a problem?

25 CHAIRMAN JACKSON: Is this form used on a

1 consistent basis?

2 MR. GILLESPIE: I would not want to say it is used
3 on a consistent basis, but it is used with regularity.
4 I'm not trying to evade your question, but it is spotty how
5 we get it back. We annually put a Commission paper together
6 and report the results of what comes out of those reported
7 forms.

8 At a higher level is the EDO's process, and each
9 region has a process for very senior managers at nuclear
10 facilities to call in if they have complaints about actions
11 taken by residents or inappropriate actions or any problems
12 at all with how we are carrying out our program.

13 CHAIRMAN JACKSON: Is our solicitation of feedback
14 from the public as formalized?

15 MR. GILLESPIE: No, it's not.

16 CHAIRMAN JACKSON: Are you thinking about that?

17 MR. GILLESPIE: I hadn't been. It is not.

18 MR. MIRAGLIA: It has been spotty.

19 MR. GILLESPIE: It has been spotty.

20 MR. MIRAGLIA: There have been broad procedures
21 such as the maintenance inspection procedures. There were
22 workshops. On some occasions we have had broad workshops on
23 those kinds of activities.

24 MR. GILLESPIE: Out of fairness, the feedback from
25 the public we get here is --

1 CHAIRMAN JACKSON: And newspaper articles.

2 MR. GILLESPIE: No. Actually, it's a little more
3 structured than that. It is things like the UCS write in
4 and we get appraisals from them. They are happy to appraise
5 us. There is a person at the University of Syracuse who
6 quite frequently gets computer runs.

7 CHAIRMAN JACKSON: The real answer is that at this
8 point in time it's not formal.

9 MR. GILLESPIE: It's not formal.

10 MR. MIRAGLIA: It's not formal.

11 COMMISSIONER DIAZ: Would you say that the
12 feedback from the licensees, the industry is consistent in
13 the sense that if there is a problem they do come and say "I
14 have a problem with this"? Is that done on a consistent
15 basis? Is that dialogue established and that feedback
16 mechanism clear and unimpeded?

17 MR. GILLESPIE: I personally believe it's very
18 unimpeded and it's very clear. What I would have difficulty
19 answering is, does any particular utility have an inhibition
20 for using it?

21 I think on our side we hope we have destroyed any
22 blocks to someone calling up. In fact, only last week we
23 had an immediate call where an inspector said something on
24 site which was probably out of context and out of line. The
25 call came in immediately, and we have taken care of the

1 situation.

2 For the majority of licensees, I think it's both
3 clear and unimpeded.

4 MR. MIRAGLIA: As a matter of context and history,
5 the form and the feedback mechanism of managers going out
6 was a result of the regulatory impact survey that we
7 conducted back in 1989 and 1990.

8 One of the corrective actions of that is there was
9 a concern -- industry voiced that concern -- about the
10 retribution issues, and there is reluctance to complain
11 because of their input to SALP and other things that affect
12 licensee performance. So there is a reluctance. That issue
13 is out there.

14 As a result of that survey, we took the corrective
15 actions of having the survey form, the periodic report to
16 the Commission. We had training sessions for our
17 inspectors. We have upgraded the fundamental of
18 inspections. There were a number of corrective actions.

19 Notwithstanding those activities, the Tower
20 report came out in 1992 and raised the issue again of
21 concern and reluctance to bring forth those kinds of issues
22 to the agency. As a result of that, another level was put
23 in, which is the management implications group where senior
24 managers from the utilities were encouraged to call to the
25 EDO and the EDO staff to raise issues at that level. That

1 has been used and that has been in place for about a year or
2 two years and has been used in a limited kind of way.

3 MR. THOMPSON: We don't get lots of calls in that
4 context. I think each utility executive as they have their
5 communications links established with the regional staff and
6 with headquarters staff probably make their own judgment as
7 to whether they raise issues and select what issues they
8 raise. I think if there is a truly serious issue, they
9 don't hesitate to raise it. It is those that are kind of
10 borderline, would be my guess, that some may have reluctance
11 to raise.

12 COMMISSIONER DIAZ: Are you satisfied that we have
13 provided guidance at every level that it is important and
14 necessary for the licensee to communicate reservations that
15 they have and that is all we can do?

16 MR. MIRAGLIA: The answer is yes. We say there
17 are many vehicles. We encourage the licensees to use those
18 vehicles, and for these other cases here's another mechanism
19 to be used.

20 COMMISSIONER DIAZ: Thank you.

21 MR. GILLESPIE: Going to slide five.

22 [Slide.]

23 MR. GILLESPIE: There is almost a continuous,
24 ongoing relationship between the Inspector General and the
25 program, because there is almost always some aspect where 50

1 percent of the agency is being reviewed. So there is
2 actually a very good relationship in the suggestions made by
3 the Inspector General on the program as they look at
4 different aspects and to try to understand the
5 interrelationships between one recommendation that they make
6 on one more limited scope investigation or audit as it might
7 be applied across the board.

8 The General Accounting Office, that was only
9 yesterday. We always seem to have a GAO audit of some kind
10 going on. In fact, one of the people working on the one
11 that is going on right now was also on the South Texas one.
12 So we have periodic feedback almost of a constant assessment
13 nature coming from GAO also.

14 Industry and public feedback. Predominantly
15 industry feedback. Public feedback is very indirect. It
16 tends to be different groups that come in. It is not
17 systematically collected.

18 [Slide.]

19 MR. GILLESPIE: Going to slide six, this list in
20 bullet form are the issues I was going to try to cover today
21 to give some sense of what we are doing to improve the
22 program in both a problem statement in each of these areas
23 and some idea of short- and long-term action, in some cases
24 a short-term action having already been achieved.

25 [Slide.]

1 MR. GILLESPIE: Slide seven, the identification of
2 design issues. We have broken down the problem into several
3 pieces here to somewhat try to align with the actions we are
4 taking.

5 Insufficient design considerations in the
6 inspection program and lack of design of expertise in the
7 staff. I will split that as I discuss it into both a
8 long-term and the front part of that problem that we are
9 trying to deal with a little more in the short term. The
10 last part of that sentence is a longer term aspect.

11 Lack of systematic incorporation of design
12 inspections into the core or our regular inspection program
13 so that we have a repetitive nature of going back with some
14 periodicity and looking at design.

15 CHAIRMAN JACKSON: Is there an inspection module
16 that is in fact focused on design inspection?

17 MR. GILLESPIE: Yes, there is.

18 MR. MIRAGLIA: There is one in development.

19 MR. GILLESPIE: We have one in development. We do
20 have an inspection module, several in fact, that are
21 specifically focused on design, but they are not part of the
22 mandated core program. Now we are looking at how to make
23 that digestible and actually get it into mandatory program
24 so that we come up with a periodic and systematic look at
25 it. It is right now a procedure that is used more in a

1 reactive nature when we have some insights that there is a
2 problem.

3 The next one is insufficient information from
4 licensees on the status of design basis reconstitution. It
5 goes down to the 50.54(f) letter which we have recently put
6 out, and we are starting to get responses back.

7 And lack of availability of design information,
8 which is something we see when we do visit the sites, the
9 ease of even the licensee coming up with his design
10 information for us to review.

11 CHAIRMAN JACKSON: Who performs engineering
12 inspections in the regions?

13 MR. GILLESPIE: We start from the top down. There
14 are two divisions in each region. There is a Projects
15 Division and then there is the Reactor Support Division,
16 which is basically the engineering division. So engineering
17 inspections are really focused on regional specialists.

18 Our residents are more generalists. We are
19 focusing and are continuing to keep them focused on day-to-
20 day operations where the idea that avoiding a transient, the
21 idea of stable operations is a very important aspect of what
22 we do and is a significant contributor to the improved
23 industry performance as we look at the performance
24 indicators that have come down so much in the last ten
25 years. So we are really dealing with the engineering

1 inspections being done out of the regions with regional
2 specialists in this area.

3 That will get me to my last bullet on long-term
4 actions, the basic tools that we have been able to give
5 these people.

6 The other piece is we tend to supplement these
7 people with contractors, which I will discuss as I go
8 through the short-term actions here on the first bullet.

9 CHAIRMAN JACKSON: We have decided that is the
10 best way to proceed?

11 MR. GILLESPIE: I think as a short-term decision
12 we have decided we definitely -- lessons learned from
13 everything we have seen is, if we don't look at something,
14 then there is a chance that the industry is going to back
15 off and not look at it. So initially, and not wanting to
16 lose the gains we have made in operational safety, we have
17 maintained that and we are trying to maintain that resident
18 core of generalists focused on operational safety.

19 In addition, the types of problems that have come
20 out of Haddam Neck, that have come out of Millstone and
21 Maine Yankee and Crystal River really were identified by the
22 narrow specialists taking the time to really dig into
23 something. So the nature of the problem that we are finding
24 in the design area calls for a different kind of person than
25 the resident also by background, training and by current

1 capabilities.

2 COMMISSIONER DIAZ: Using the language I will use
3 with the licensee when we assess an area, we find strengths
4 and weaknesses. Would you quickly tell us what is the
5 strength that we have in our identification of the sites?
6 What are the main strengths where we say we can do this? I
7 know you have identified the problems, but what are our
8 strengths? What are our capabilities?

9 MR. GILLESPIE: I think our strength is definitely
10 operational safety.

11 CHAIRMAN JACKSON: No. He's asking what are the
12 strengths in the design area.

13 COMMISSIONER DIAZ: In this design issue.

14 MR. GILLESPIE: Let me jump to some of the
15 results. I believe the EDO recently sent a short note up on
16 the result of the architect/engineer inspections. Actually
17 the results are very consistent with results of past safety
18 system inspections, which are very design-oriented, that we
19 have done. They are not atypical type results.

20 The strengths we are finding --

21 CHAIRMAN JACKSON: Identify whether the strengths
22 you are finding are licensee strengths or our strengths.
23 He's interested in our strengths.

24 COMMISSIONER DIAZ: You said we have these problem
25 areas. What are our strengths?

1 MR. GILLESPIE: Our strengths right now as we are
2 carrying the program out, I think is using the, quite
3 honestly, limited number of people with design background
4 that we have as team leaders to organize how we leverage
5 ourselves, which is my first bullet here on the
6 architect/engineer inspections. We have leveraged ourselves
7 tremendously with contractors on these inspections.

8 MR. MIRAGLIA: I think maybe your question is more
9 our strengths and our focus has shifted to operational
10 safety and that is where our strengths are. The residents
11 have that operational focus. Their training is in the
12 operational safety focus. At one point in time, when we
13 were doing lots of licensing, lots of construction, we had
14 more design specialists within the context of the agency,
15 and we are drawing on those now.

16 CHAIRMAN JACKSON: I think the simple way to
17 answer the question is, do we have any strengths in that
18 area?

19 MR. MIRAGLIA: In design?

20 CHAIRMAN JACKSON: Yes.

21 MR. MIRAGLIA: Yes.

22 CHAIRMAN JACKSON: What are they?

23 MR. MIRAGLIA: I think we have a large number of
24 qualified engineers who have worked at AEs, but they are
25 smaller in numbers than they were perhaps years ago. The

1 question is, how can we use that smaller amount and how
2 could we augment those?

3 COMMISSIONER DIAZ: Are we getting them somehow so
4 they become a strength?

5 MR. MIRAGLIA: Yes. And the longer term issue is,
6 if we need to get more, how do we -- the training. You will
7 hear we have to get there from here.

8 CHAIRMAN JACKSON: Maybe a strength is that we
9 have a few good men or women.

10 MR. MIRAGLIA: Yes.

11 CHAIRMAN JACKSON: Is that what you are telling
12 us? I don't want to put words in your mouth. That you have
13 learned how to leverage them through these
14 architect/engineer enhanced inspection teams? Am I putting
15 words in your mouth?

16 MR. MIRAGLIA: That's absolutely correct.

17 CHAIRMAN JACKSON: I don't know if that answers
18 the question.

19 COMMISSIONER DIAZ: That certainly answers my
20 question.

21 CHAIRMAN JACKSON: He wanted it from you.

22 MR. MIRAGLIA: Yes.

23 COMMISSIONER DIAZ: The identification of problems
24 must come from a strength. I think it is very important
25 that we assess our strength even before we assess our

1 weaknesses.

2 MR. MIRAGLIA: Yes. As an indication of that,
3 Commissioner Diaz, some of the special teams that we sent
4 had those strengths on it to look at the design areas. In
5 terms of the special teams that we sent to Millstone and
6 Haddam Neck, special teams that we sent to Dresden, and the
7 special teams that we sent to Maine Yankee, they had NRC
8 specialists in that area and we augmented those as well with
9 contractors. So, yes, we have. We are not totally absent
10 of that strength within the context of the staff.

11 MR. ZIMMERMAN: I would add that in addition we
12 guide those contractors and take their findings that may be
13 raw and put them into regulatory context and determinations
14 on whether enforcement is appropriate or not. We deal a lot
15 with the raw findings that the contractors provide.

16 COMMISSIONER DIAZ: I see that as a strength. It
17 should be clearly spelled out as a definite strength.

18 COMMISSIONER ROGERS: Before we leave that, you
19 say we put these into regulatory context. Does that involve
20 a relative risk consideration?

21 MR. ZIMMERMAN: I would say yes, and we are
22 getting better with the training that we are providing to
23 our staff, our ability to use risk insights and also know
24 their limitations are improving. So we try to always look
25 at things from a risk perspective, take the findings and

1 marry the two, but there is clearly room for us to continue
2 to grow in that area.

3 MR. MIRAGLIA: And I think risk is a factor in a
4 number of areas, Commissioner Rogers. In terms of deciding
5 what systems to inspect, we try to use the risk informed
6 insights to look at those issues.

7 In terms of regulatory space, one has to try to
8 say safety significance, risk significance. That is a part
9 of the enforcement policy, and we are looking at ways of
10 enhancing the enforcement policy with respect to risk
11 significance.

12 So risk is a factor and an element at the various
13 stages of the regulatory process.

14 CHAIRMAN JACKSON: I think Commissioner McGaffigan
15 has a question.

16 COMMISSIONER MCGAFFIGAN: One of the things
17 Mr. Gillespie just said, and I took it down, is if we don't
18 look at something, industry will tend to back off and not
19 look at it. That's a fairly profound insight and it says
20 something about risk. Maybe you could say something about
21 the compounding of things. If we only look at the most
22 safety-significant, the most risk-significant systems and
23 they were working perfectly, can things fall apart by
24 looking at non-risk-ignificant things that compound and turn
25 out to be more safety-significant?

1 MR. MIRAGLIA: That's a challenge. The challenge
2 is another balance. I think we cannot focus strictly on
3 risk-significant things.

4 As an example, spent fuel pool cooling, which was
5 an issue that got pulled at Maine Yankee. From a risk-
6 significant point of view, we perhaps should have been
7 paying more attention to that area, and we were focused on
8 other areas. That's a lesson learned.

9 There has to be a balance not only between
10 operations and safety, but you have to have enough in your
11 program that is sampling enough areas, both risk-significant
12 and perhaps less risk-significant, but providing insights to
13 the robustness of licensees' programs and their ability to
14 comply with the regulations. We have to look at both, and
15 that's another balance that is going to have to be looked at
16 in terms of the inspection program. It can't be absent and
17 just risk dominant only. You have to look at a little bit
18 of everything.

19 MR. GILLESPIE: We've got a bullet that isn't in
20 my viewgraphs. I will try by way of example to illustrate.
21 One of the things that we are looking at is the basic
22 inspection procedure that most of the resident activities
23 are covered under in operations. We require the residents
24 to do some things, and we will hear anecdotally back from
25 the residents: Why am I looking at this? I never find

1 anything wrong.

2 We have tried to maintain this balance that Frank
3 talked about in the program of touching all the necessary
4 activities and relate that same philosophy to the
5 engineering of the facility and just take a risk analysis
6 and recognize that some of the major weaknesses in our risk
7 analysis are the cumulative assumptions that went into it.

8 Every resident and every senior resident basically
9 some place in their office will have the IPE chart that has
10 been generated on risk-significant system, least to most to
11 most to least risk-significant system. Yet when you look at
12 that, if you spent all your time on the top two systems, you
13 might have a highly risk-significant problem because the
14 support systems that are assumed to work are going to be
15 flawed.

16 It is clearly not, to me, a simplistic argument.
17 In achieving this balance people sometimes take us to the
18 extreme. Well, that is not a risk-significant system. Yes,
19 but HVAC happens to be a very important support system, if
20 you have an accident, to maintain the environment in the
21 control room.

22 Other things that we might be looking at, for
23 example, the maintenance rule, is looking at the reliability
24 of a particular component. Well, there are some assumptions
25 in the risk analysis that reliability of that component is

1 X. If the reliability isn't X, then it trickles through the
2 whole thing. It may in fact be almost as important to look
3 at the underlying assumptions in the risk analysis and make
4 sure the assumptions are valid as it is to look at the
5 specific most risk-important system it identifies.

6 There is a real balance there. So we have got to
7 be real careful that we approach this with the same type of
8 balance of what is the information telling us, what are the
9 assumptions. I'll use the example of the sleeping operators
10 at Peach Bottom. If we weren't going into the control room
11 basically each day with a resident or a senior resident as
12 part of their tour observing staff turnover, we might not
13 have seen that.

14 You will find very few items of noncompliance or
15 statistics generated from control room observations, but
16 it's a very important element of what we think an inspector
17 does each day, particularly the resident.

18 That same principle needs to be carried over into
19 engineering. Right now we are basically looking at the most
20 risk-significant systems, and quite honestly, we try to pick
21 the two or three systems that are risk-significant to look
22 at and analyze. I recognize that we may have a flaw in our
23 system, because we are not necessarily looking at as much
24 detail in those systems that might get ignored.

25 COMMISSIONER DIAZ: What you are really saying is

1 that the entire process falls in the area of systematics.
2 In other words, it is this system of risk you are going to
3 be working with rather than the risk of any one component or
4 area.

5 MR. GILLESPIE: Yes. It's a compounding just
6 because we have a complex machine and everything is
7 interrelated. So it's not a simple solution. You might say
8 that the entire QA process in a risk analysis isn't modeled.
9 It is all included in this little beta factor that the risk
10 people like to put in front because we don't understand it
11 real well. Yet the failure of a complete QA program would
12 be very risk-significant in our opinion.

13 The limitations of the mathematics give
14 limitations to the applicability, and I think we have got to
15 keep that insight in the back of our mind as we approach
16 inspection.

17 CHAIRMAN JACKSON: It strikes me that all of this
18 is tied together. Commissioner McGaffigan spoke of where
19 you could have cumulative effects. You spoke of looking at
20 what you think may be the most risk-significant things but
21 if you ignore some others, you may be ignoring the effect or
22 the implication of that.

23 MR. GILLESPIE: Exactly.

24 CHAIRMAN JACKSON: Commissioner Diaz spoke of
25 having systematics. So the whole thing requires an

1 integrated and systematic approach that has risk insights
2 built into it, because that helps with the systematics. I
3 think that is all they are really saying. Sometimes we fall
4 into traps where we think we are talking about something
5 here or something here, and it just doesn't work that way,
6 because in the end the plant is an integrated entity itself.

7 MR. GILLESPIE: Jumping to the short-term actions,
8 quit honestly the short-term actions we have significant
9 leveraging of the staff. We have three AE teams with five
10 contractors on a team; two team leaders assigned from the
11 NRC so that we can keep the paperwork going when the team
12 goes out again and we can maximize our use of the
13 contractors. I think we are leveraged to the maximum extent
14 possible.

15 We also have a significant program where we supply
16 engineering specialists to the regions when they have a
17 particular problem to do a safety system functional
18 inspection, which is our traditional reactive procedure for
19 doing a vertical slice or really digging into a specific
20 system, which we are also supplying. This did not push off
21 the more routine efforts. This was clearly an addition to
22 what we were already doing.

23 Regional inspections of engineering. We are
24 trying to address now getting this incorporated rather than
25 in a reactive way, which it was before. I am talking about

1 the engineering aspects of design versus when we were
2 looking at engineering more traditionally. We were looking
3 at engineering in support of operations: were they being
4 responsive when the operator said he needed assistance?

5 It was the responsiveness to operations, not
6 maintaining the integrity of the basic design itself and the
7 basis for that design. So it's a different aspect of
8 engineering that we are looking at now. We are not throwing
9 out looking at the other piece, but we are looking at this
10 right now in the short time. It's all an addition.

11 COMMISSIONER DIAZ: Where are the senior
12 specialists? We place two in each region and two in here?

13 MR. GILLESPIE: That's our senior risk analysts.
14 I do have a whole separate slide on that.

15 COMMISSIONER DIAZ: All right.

16 CHAIRMAN JACKSON: Let me raise one other thing,
17 which is basically a comment on your comment. I recall, if
18 I can paraphrase him, Commissioner Rogers always emphasizing
19 the point that it's not just looking at design per se, but
20 you want to look at how design and design changes get
21 propagated into operations and plant changes and into
22 procedures. I assume that when you speak about that that in
23 fact is what you are looking at.

24 MR. GILLESPIE: Exactly. That's why I said I
25 don't want to throw away what we have been looking at

1 before, but what we are now saying is we are not taking for
2 granted the engineering solution or responsiveness to the
3 operational problems. Now we are saying, well, when you
4 propose that solution, where did you get your numbers?
5 Where did you get the pressure requirements? Where did you
6 get these other things?

7 More goes into the robustness of the solution. So
8 we are going kind of backwards down the stream flow of
9 information.

10 Longer term actions --

11 CHAIRMAN JACKSON: Before you go, I can't let you
12 go by the 50.54(f) letter follow-up. You have already
13 worked out who is going to do that and that the resources
14 are available? Is it going to be in the headquarters where
15 the reviews are?

16 MR. MIRAGLIA: We are having a conference call.
17 Hugh, did you get it set for tomorrow?

18 MR. THOMPSON: It is tomorrow afternoon. We will
19 reach a final position with respect to how we will integrate
20 the review process between the NRR and the regions in order
21 to assure that the right people look at this in a timely
22 fashion.

23 CHAIRMAN JACKSON: Have you worked out what any
24 follow-on regulatory actions would be?

25 MR. MIRAGLIA: We are looking at those elements as

1 well. We just started to get some of the input from the
2 licensees. I think the due date was the 9th of February,
3 and the letters are coming in. But yes, one would have to
4 say, given those letters, what appropriate action should
5 there be for follow-up inspection questions or enforcement,
6 and that all has to be part of our evaluation.

7 CHAIRMAN JACKSON: And you have developed criteria
8 for review, that is, what it is you are looking for?

9 MR. MIRAGLIA: Yes.

10 COMMISSIONER ROGERS: Before we leave this, if we
11 could back up one half bullet or so to the new inspection
12 procedure, what are the dollars and FTE resources that are
13 going to be required in addition to what we have devoted to
14 our inspection activities to carry out this new inspection
15 procedure?

16 MR. GILLESPIE: The reason this is short term is
17 we are actually trying to achieve that within some limits
18 that we placed upon ourselves. Our first question is those
19 limits, and the limits that we have placed upon ourselves
20 really are this would be done with existing staff.

21 So I would have a diversion, and at a budget level
22 dollar support-wise for contractor support at about the same
23 that we have right now. Right now, for this element of it
24 we are spending at the rate of about \$2 million a year for
25 individual contractor support.

1 If you would like, I could outline what we are
2 looking at.

3 COMMISSIONER ROGERS: I don't need it right now,
4 but if you could supply us with that, it would be
5 interesting to look at it.

6 MR. GILLESPIE: Yes.

7 CHAIRMAN JACKSON: Are you comfortable with the
8 trade-offs?

9 MR. GILLESPIE: For the short term I'm comfortable
10 with the trade-offs. I'm speaking from a prejudiced
11 position, because I'm seeing immediate gratification from
12 the results of the architect/engineer inspections, what you
13 might call the safety severity or safety significance of the
14 findings.

15 I feel comfortable right now with the trade-offs
16 in that I am not giving everything away and I am not
17 diverting from some of the things that we are doing that are
18 well. Current engineering, which we had just beefed up last
19 year relative to the resources and the core inspection
20 program in engineering, we had raised the number of hours
21 and adjusted it. We are trying to work within that volume.

22 It would be the kind of approach that says if you
23 haven't had anyone look at a specific system in detail, in
24 the vertical slice kind of sense, in the last two years you
25 haven't had one of the architect/engineer inspections, then

1 you should consider them for this procedure. If you have,
2 then you should carry out the old core procedure.

3 What we would do is end up like on an every second
4 SALP cycle first looking at engineering one way and then
5 looking at engineering from a more design detail way.

6 We are exploring that. That is conceptually how
7 we are going. Will everyone be satisfied with the pace that
8 that is? I'm not sure. I can only say this is the kind of
9 thing we are exploring, because you have to have a baseline
10 for people to comment on.

11 MR. MIRAGLIA: This is the first attempt. In fact
12 it's out for regional comment. The goal would be to utilize
13 the resources from the region, augment from headquarters if
14 necessary, or use contractors. When you use the regional
15 resources, perhaps they are not doing something else that
16 they would have been doing. So those are the trade-offs.
17 And to really assess what that impact is. Or if we use
18 headquarters people. These are the trade-offs that are yet
19 to be determined. We are going to have to try the
20 procedure, apply the procedure.

21 CHAIRMAN JACKSON: Within the overall head count
22 numbers, you had people who were doing design reviews
23 relative to design certification. Is there any fungibility
24 of people?

25 MR. MIRAGLIA: Yes. What has also happened in

1 that area is we have been ramping down in terms of those
2 resources over the last few years as design certifications
3 for the evolutionary designs have come to conclusion. There
4 is only one design under active review. So those resources
5 have been coming down and we have been applying those
6 resources that were there, as well as our staffing levels
7 have come down.

8 CHAIRMAN JACKSON: You have been shifting them?

9 MR. MIRAGLIA: Yes, and that's how we have been
10 able to keep up with lots of the initiatives that we have
11 had. The increment that is left from that to roll over to
12 that is much smaller than it was two years ago.

13 CHAIRMAN JACKSON: I understand.

14 Okay, Frank.

15 MR. GILLESPIE: Long term actions. We are going
16 to have a presentation next week on Millstone lessons
17 learned. The major policy question that comes up here is
18 the licensing basis, what it's called, is it tabulated.

19 In the simplest sense it might be. If an
20 inspector was going to go out and do an inspection on the
21 auxiliary feedwater system at a plant, does he have a list
22 of all of the commitments and requirements for that system
23 easily available to him? Right now the list is not easily
24 available to either us or the licensee. That is going to be
25 a major focus of our discussion next week. So I am going to

1 try to not do it today.

2 The other one is long term, the balance between
3 operations and design inspections as it applies to our own
4 staff. Quite honestly, I think it's very well known.

5 I just mentioned we are putting about \$2 million a
6 year into contractor support for engineering type support
7 for the regions on a reactive basis. The A and E
8 inspections are budgeted at about \$4.5 million a year to
9 keep three teams going. That's \$6.5 million.

10 That's a big resource, and at some point we have
11 to step back and say can we continue to pay for that for
12 contractors or do we have to bring our own staff talent to
13 bear on it and recruit people with maybe different skills
14 than we had before, and how do we do that and how do we
15 factor them in.

16 That's why it's long term; it's not something we
17 would do overnight, and requires some planning out, and a
18 different resource base, a different recruiting base, quite
19 honestly. Our focus for recruiting has very much been the
20 resident type person operations, former operators.

21 [Slide.]

22 MR. GILLESPIE: The next topic is inspector
23 qualification and training. This came up. The basic
24 question the IG was asked: Are we following our own rules
25 on how we are documenting our training?

1 There were weaknesses found in our training
2 documentation.

3 Management expectations for performance-based
4 inspections were not clearly communicated. Let me go
5 through the list, if I could, and I would like to address
6 the difference between performance-based inspection and
7 inspecting performance-based rules. I find that our own
8 inspectors get confused, and I would like to take a shot at
9 at least trying to distinguish between those two.

10 A combination of NRC organizational changes. We
11 eliminated 40 section chiefs in the regions. What those
12 section chiefs provided was an integration function, in a
13 sense, of some of the results coming out of their individual
14 reactors. That integration function in some cases got
15 pushed down on the resident inspectors. You will hear
16 resident inspectors say, I'm doing administrative tasks.

17 What we have got is inspectors, seniors
18 particularly, who are fulfilling two roles. There is
19 information collection and then there is diagnostics. The
20 traditional inspector really enjoys information collection
21 and he may not enjoy diagnostics, and that is preparing for
22 PPR, preparing SALP packages, preparing for senior
23 management meetings. So we are really going into that right
24 now and trying to understand it, which gets us to one of the
25 other actions down here.

1 Short term actions. We have republished our
2 manual chapter. You will hear in the staff the acronym
3 1245, like everyone in the world is supposed to understand
4 it. That is our Inspection Manual Chapter which covers
5 training. It reflects our current policy on training,
6 meaning it added some new training courses in.

7 In addition, a significant change which is now
8 going around the halls, because I held a training session
9 for 250 people in NRR yesterday on this, is that it makes
10 inspector classifications generic. What we found in the
11 regions was that the regions very much comply generally with
12 our program; they have inspector qual journals that are
13 signed off by different people; it is very structured, very
14 disciplined.

15 In NRR we turned around and we have evolved to a
16 program office with many, many people supporting the regions
17 in doing inspections. In fact, we at least equate to one if
18 not two division equivalents for the engineering divisions
19 in the regions in supporting inspections in pieces here and
20 there and everywhere when you add them up: fire protection,
21 maintenance inspections, PMs filling in for seniors that go
22 on leave or take vacations. My people do special team
23 inspections, the architect/engineer inspections.

24 What we have done is taken the word "region" out
25 of inspector and now we are looking at making sure that

1 people who carry out functions have the same qualifications
2 independent of their geographic location.

3 We are creeping into this right now. We are
4 working with our partnership and we are working with NTU.
5 You will see our new postings going up. Yesterday two
6 postings went up in NRR which now have a new page on a
7 position description that says you are expected to be
8 qualified to one of these categories in 1245, and you may be
9 called upon to have as much as 10 percent of your duties as
10 supporting inspection activities. So we are trying to be
11 open and honest with people, and we are getting into that
12 now.

13 This is a very big change. It's a cultural change
14 within the organization in integrating the two functions of
15 licensing and inspection together.

16 A new inspector training course was developed.
17 And now let me address performance-based inspection before I
18 try to address inspection of performance-based rules.

19 Performance-based inspection and the way we were
20 viewing it -- and we started this back in 1988 when we
21 published our first NUREG on this -- is basically an
22 inspector looking at the system, understanding first what
23 the system's function is supposed to be and first looking at
24 the system as actually a hardware system installed and
25 functioning and saying, is this system carrying out or

1 capable of carrying out its basic function, and what does it
2 have to do that?

3 That would lead you hopefully into things like if
4 you have a pump and the tank and the suction of the pump is
5 on the same level. Do you have a problem with that positive
6 suction head, yes or no? Then it leads you into possibly
7 looking at the paper and tests.

8 In fact, I'll use a success. The senior resident
9 at Fermi, who has recently moved to Zion, asking this type
10 of question, found a tank that should have been three levels
11 higher for net positive suction head. He approached it this
12 way, and in fact they had to nitrogen load the tank to make
13 sure that this surge tank would work.

14 That is a techniques course, because we hire
15 people in with the technical expertise of being a good
16 mechanical or electrical engineer, but we have not
17 necessarily hired someone with the conceptual idea of how to
18 approach a system.

19 So while we had a performance-based inspection
20 course already there, it wasn't good enough, and this is our
21 next step, to try to provide input insights and conceptual
22 insights on how to approach inspecting a system and trying
23 to get at the root cause of the problem.

24 It's a first step. As you can see, it's scheduled
25 for March 10, 1997. But it builds on the way the

1 contractors we hire actually approach a system: Will it
2 remove the heat?

3 Well, the first question on a heater exchanger is,
4 look at the nameplate data. I think this was something that
5 came out of Millstone. They looked at the nameplate data
6 and found out the Btu rating was significantly lower than
7 the expectation. That is a performance-based inspection
8 independent of what the rule says.

9 Inspecting a performance-based rule is more like
10 what we are doing now on the maintenance inspections. The
11 first go-around on the maintenance inspections is more
12 programmatic, quite honestly, to make sure the system is in
13 place that can deal with this: How are they using PRA? How
14 are they classifying system?

15 After the first go-around, which is really looking
16 at the paper, then we will hopefully use our
17 performance-based approach to inspection techniques on the
18 systems when we are inspecting the rule.

19 I am trying to make sure that it is clear.
20 Performance-based inspection is not superimposing anything
21 different on a licensee; it's how the inspector actually
22 approaches his day-to-day work.

23 We are going to continue to emphasize this. We
24 are putting a new training course in place, and it's really
25 a thought process rather than a cookbook. You can apply

1 this conceptually to an electrical system, to a mechanical
2 system, to an instrumentation and control system. Now we
3 are trying to work to that point. It is not something I can
4 write an inspection procedure for and use a checklist. It
5 really is a mental process to try to get into the program.

6 COMMISSIONER ROGERS: I like what I am hearing you
7 say here. It sounds like a very sensible way to proceed.
8 How much of this is all written down someplace that somebody
9 can take a look at? What you are saying seems to make a lot
10 of sense, but I haven't seen it written down anywhere in
11 anything that has come before my eyes.

12 CHAIRMAN JACKSON: Do you have it in terms of any
13 of your inspection modules? Is it part of some training
14 course?

15 MR. GILLESPIE: As it happens, I had that same
16 feeling, because I've been working in this. My mind has
17 been working this way since I was an inspector. It is not
18 written down in a real visible way, but I went back and got
19 our performance-based inspections report, which was a NUREG
20 that was completed in March of 1988. The words are still
21 valid today. Have we pulled it together the way I
22 articulated here in a policy document? No.

23 COMMISSIONER ROGERS: I think that would be very
24 useful to do.

25 MR. GILLESPIE: We have put the training courses

1 in place. What I have just articulated is the inspection
2 begins -- I am reading from the abstract -- "the inspection
3 begins with a performance-based observation and then the
4 inspectors let discrepancies or uncertainties lead to the
5 inspection of other areas such as quality verification,
6 organizational . . ." And you start looking at the system,
7 and then you go on.

8 CHAIRMAN JACKSON: I would put it in the realm of
9 more explicit guidance for your own people and ensuring that
10 there is consistency between what is in the training courses
11 and what is in that guidance.

12 MR. MIRAGLIA: As Frank said, back in 1988-89 we
13 started to talk with the inspectors, that you need to
14 inspect performance as opposed to programs. We were
15 articulating that in the broad context in the training
16 program and in broad context within fundamental of
17 inspection. Perhaps not everyone had the same mental
18 picture of what we were talking about.

19 CHAIRMAN JACKSON: The way Frank just explained it
20 is very well articulated, and I think that articulation
21 perhaps needs to be written down somewhere.

22 COMMISSIONER ROGERS: I wouldn't want to just see
23 this buried down in inspection manuals. I think this is a
24 very important point of view that ought to be very clear as
25 to how we view our activities here. Your connection between

1 inspecting for performance versus inspecting against a
2 performance-based rule and drawing that distinction in the
3 context, I think that is very important, because we have to
4 be clear on what it is we are talking about. I thought what
5 you said was very good. It sounded excellent to me.

6 CHAIRMAN JACKSON: We may want to see it surface
7 as this is the NRC approach.

8 COMMISSIONER ROGERS: This is our concept.

9 CHAIRMAN JACKSON: Right. This is the concept. I
10 think he is saying to elevate it, and we can promulgate it.

11 MR. MIRAGLIA: We will certainly do that.

12 COMMISSIONER DIAZ: I do agree that it sounds very
13 good. I just want to make one observation of your points.
14 We are talking about training and you said that inspectors
15 are more prone to do information collection than to do
16 diagnostics. I take that as a value judgment on your part.
17 That might very well be true, but in training, to be able to
18 streamline the information process you have to introduce
19 diagnostics at that very first level.

20 The fact is it is diagnostics that allow him to go
21 from one component to a system. So it is critically
22 important in the training that, even if they like more to do
23 information collection, diagnostics is an indispensable
24 element, and maybe we should put an emphasis on that in our
25 training programs.

1 MR. GILLESPIE: And we do. I was drawing a more
2 distinct diagnostic line, and I will go through that when I
3 have a diagram here. You often hear residents when you
4 visit the sites saying, I spend too much time at my
5 computer. I'm drawing the line of diagnostics at preparing
6 for senior management meetings, preparing for plant. That
7 is performance-based inspection as you just described.

8 Yes, is the answer. I was drawing a different
9 line just from what we are finding in interviewing people
10 and the job task analysis is also finding that we are going
11 around and doing, which is coming close to an end.

12 CHAIRMAN JACKSON: Let me ask you this question.
13 It's kind of a judgment question. Given what you have
14 outlined in terms of this increased focus on definition of
15 the distinction between doing performance-based inspection
16 versus inspecting performance-based rules, have you been
17 able to do a survey or detect how much of a problem it is in
18 terms of a lack of understanding of that by our own
19 inspectors?

20 MR. MIRAGLIA: I think Frank referred to an IG
21 audit that looked at our training. The maintenance rule
22 audit brought the performance-based issue not being well
23 understood into focus.

24 CHAIRMAN JACKSON: How comprehensive was that
25 audit?

1 MR. MIRAGLIA: I'd have to go back and look at
2 that report, Madam Chairman, but they talked to lots of
3 inspectors and regional people and headquarters people.

4 CHAIRMAN JACKSON: Does that square now with your
5 own judgment?

6 MR. GILLESPIE: Yes, it does. The people were
7 focusing on the phrase, and the phrase "performance-based"
8 had "rule" after it when it was used once and "inspection"
9 after it when it was used again. Then you had the question
10 of, well, why are we looking at the inspector question? Why
11 are we looking at paper with the maintenance rule on the
12 first go-around?

13 Well, the first go-around you have to make sure
14 that the processes and systems are in place by which you can
15 judge performance. If an inspector sees a component
16 failing, he then says, okay, that component is failing. Are
17 you treating it correctly? That way the inspector is not
18 trying to second-guess the system and the paper. He doesn't
19 have to reinvent the look at the paper.

20 We had to tell the inspectors, yes, this is still
21 performance based, because you have to make sure the
22 performance process is in place so that when you do
23 performance-based inspection you don't have to go back and
24 do that all over again.

25 MR. MIRAGLIA: With some of these concepts I think

1 it would be preferable for us to be cartoon type characters,
2 so when you use a phrase you have the little balloon over
3 everyone's head and everyone can say, what is the mental
4 picture?

5 I think what we will find on some of these
6 concepts is we have talked past one another; we are not
7 fully communicating because the definitions are a little bit
8 different. I think that is an element that is here.

9 Even if we have this broad statement, Commissioner
10 Rogers, that is the start. It has to permeate the training
11 programs; it has to permeate the communications.

12 COMMISSIONER ROGERS: It shouldn't be so broad
13 that it leaves out what you are seeing.

14 MR. MIRAGLIA: I understand. That's the starting
15 point, and then it has to permeate.

16 CHAIRMAN JACKSON: You are talking about different
17 tiers of the same thing.

18 MR. MIRAGLIA: Yes.

19 CHAIRMAN JACKSON: You can have the overarching
20 thing that is some broad-based kind of point of view, but in
21 the end, if it isn't inculcated into everything that helps
22 our inspectors do what they need to do, then we haven't
23 accomplished anything.

24 MR. GILLESPIE: I felt very good when I was at
25 Fermi and met with the senior and he showed me this, and I

1 said, aha, I at least now know we have reached one.

2 Long term we have a job task analysis which will
3 be completed this March by the contractor. One of our
4 questions was this question of diagnostics in the sense that
5 I had used it earlier. We have made some changes to the
6 organization. We shifted a lot of things around.

7 What has been the impact? Are we really getting
8 what we think we are getting? If someone is doing
9 something, do they have the necessary training to do what
10 they are doing? The split of work: what is done at a site
11 and what is done at a region.

12 That is all we are looking at in this job task
13 analysis. It is not one of specific positions. It gets to
14 that, but it is one of the division of reactor projects in
15 the regional organizations, and we have looked at all four
16 regions, because all four regions carry out the same program
17 slightly differently and functions get allocated differently
18 even within a region between branches.

19 We are looking for the most efficient, effective
20 process through the whole thing to deal with it: How should
21 we split functions? Where should they be? Who should be in
22 charge of it? Signature authority.

23 CHAIRMAN JACKSON: What kind of time line have you
24 laid out for yourself with milestones or for getting the
25 whole thing done?

1 MR. GILLESPIE: The contractor effort will be
2 completed in March. I've got some informal insights back
3 from them. Just like any anxious person, we call them up
4 and say, what are you generally finding?

5 We are generally finding some of the things I have
6 actually already said. The level of discussion about time
7 at the computer, probably there is more discussion to it
8 than there is the actual time. We went out and put expert
9 panels together and said, how much time do you really spend
10 that goes with this anecdote?

11 What we were trying to do is take all this
12 anecdotal information that everyone had gotten and put it
13 into a total perspective so that we are not underinflating
14 or overinflating what a particular problem might be in the
15 whole system. So weighting is what we are hoping to get out
16 of this report to pull it all together.

17 All the regions participated; headquarters
18 participated; there were many, many meetings. So it's going
19 to be, I think, a very beneficial rebaselining.

20 MR. MIRAGLIA: The output from this is going to be
21 useful in many ways. As Frank said, it's a function, an
22 assessment of the function. We have many changes in the
23 program or contemplate in the program improvements. We'll
24 have to also say, given those changes, where are we today
25 and what does that mean to assessment of functions and

1 training?

2 CHAIRMAN JACKSON: I guess it still is important
3 that we get some sense of when you are hoping to really see
4 some of this reflected in the inspection program.

5 MR. GILLESPIE: It will be. I have no problem
6 coming back once I get the report in hand and we can deal
7 with it and get people's opinions again.

8 CHAIRMAN JACKSON: All right. Is a similar thing
9 being done for the project management organization?

10 MR. MIRAGLIA: That brings us to the next slide.
11 The Chairman is moving us along.

12 MR. GILLESPIE: Roy is going to cover this slide
13 and I get to have a rest.

14 [Slide.]

15 MR. ZIMMERMAN: There are areas for noted
16 improvement with regard to project manager training and
17 qualifications. The Inspector General issued a number of
18 reports over the past year indicating areas where we needed
19 to improve our activities as well as our own
20 self-assessments.

21 Although there were some findings where individual
22 staff performance could be improved, mostly the areas where
23 we needed improvement were for management to provide clear
24 expectations to the project managers on what we wanted them
25 to do and to provide the necessary training and tools to

1 accomplish that job.

2 To that end, in the short-term actions we issued
3 expectations on the interactions with the regional office.

4 It became very clear from lessons learned from
5 Millstone and from Maine that there needs to be a very close
6 linkage between the project manager, the resident inspector
7 and the region-based inspectors. They need to talk often
8 about activities that they are both working on.

9 The inspectors in the field benefit from the
10 insights that the project manager has from the licensing
11 matters that they have been involved with both of a
12 plant-specific nature and also the benefit of being here in
13 headquarters and having a generic knowledge.

14 CHAIRMAN JACKSON: How in fact are you
15 implementing this shared safety responsibility? How are you
16 ensuring or enforcing this integration?

17 MR. ZIMMERMAN: This is one of the first key
18 messages that we have articulated a number of times. I
19 personally have done it as well as my direct reports. We
20 have had discussions in workshops in the auditorium to go
21 over the issue that our job is early identification of
22 problems at facilities and declining performance, trying to
23 find those problems early. That is not just the region's
24 responsibility; that's all of our responsibility.

25 CHAIRMAN JACKSON: How do you ensure that this

1 kind of interaction and interaction with the desired outcome
2 occurs in fact?

3 MR. ZIMMERMAN: We have put a feedback mechanism
4 in place. We have indicated that these phone calls should
5 take place with the region no less often than three times a
6 week. It is documented in our PM handbook.

7 We have in our process improvement plan a feedback
8 mechanism for the project directors to be able to come back
9 and say that they have monitored these phone calls, they
10 have reason to believe and to support their reasons that in
11 fact we are having success in this area. It is not enough
12 to put out the expectation; there is a need for feedback to
13 test it, to see if it is actually occurring, and we have
14 built that into our process.

15 CHAIRMAN JACKSON: Have you also built that into
16 your accountability and your expectations in terms of
17 people's actual performance?

18 MR. ZIMMERMAN: To a degree. We are moving in
19 that direction. We are working on our elements and
20 standards. We see there are some areas that need to be
21 improved so that it is in line with the expectations that
22 I'm going over. We need to do the necessary activities in a
23 coordinated way with our partnership group. That is where
24 we are headed. We are headed to element and standard
25 changes to reflect the points that currently aren't in the

1 standards.

2 COMMISSIONER ROGERS: How many times per year
3 would a project manager actually visit the project?

4 MR. ZIMMERMAN: It varies, depending on the
5 particular site and geography to an extent. Typically it's
6 about four times a year. If it's a plan that is having more
7 difficulties with us and there are more management meetings,
8 SALP meetings, PPR meetings, I would expect the project
9 manager and his supervisor to be making more visits to the
10 site and to the regional office.

11 COMMISSIONER ROGERS: Okay.

12 MR. MIRAGLIA: There is broad guidance out on that
13 in terms of the numbers that Roy indicated. There are
14 reasons why that may change because of specifics on the
15 project.

16 COMMISSIONER ROGERS: I understand.

17 MR. MIRAGLIA: There are those kinds of guidelines
18 out there.

19 MR. ZIMMERMAN: One of the lessons that we clearly
20 learned out of Millstone and the partial core offload is
21 that we have blind spots, and we have to do our best to
22 avoid those blind spots via the communications between the
23 project manager, the resident and the region-based asking
24 for input from the region that we are closing a licensing
25 matter; we are ready to approve this; and talking to the

1 region and to the inspector in the field about that.
2 They've had a chance to think about it. They can provide us
3 thoughts that maybe we haven't thought of. We can provide
4 insights to them on where they can inform inspections, that
5 we have been looking at some activities here that make us
6 think that this particular system might be one that warrants
7 sampling during your next inspection.

8 That is the coupling that has been there in the
9 past, but we are trying to make it front and center heavy
10 emphasis that that needs to be done. That was a clear
11 lesson over the past year.

12 Another area has to do with the fact that we have
13 also issued expectations on maintaining the FSAR current.
14 We have put out an internal requirement that the project
15 managers are to update their version of the FSAR with the
16 latest revision within 30 days after they receive that
17 revision, and that we expect that that FSAR will be used as
18 they carry out their licensing matters and other readily
19 available portions of the current licensing basis.

20 Again, not all portions of the CLB are readily
21 available, but there should be a reasoned attempt to add to
22 the FSAR as they go through looking at licensing actions and
23 licensing activities.

24 Many of the lessons that we have been learning
25 over the past year are process related. We have talked

1 about a few of those. We also had some challenges over the
2 past year in the area of handling of allegations, errors
3 that we have had in identification of allegeders' identities
4 inadvertently.

5 Sensitivity to the way we treat and deal with
6 allegeders is an area that we have also had significant
7 emphasis in our training to not repeat some of the problems
8 that we have had in the past.

9 Other issues that have come up -- and we track
10 them actively in our process improvement plan -- get into
11 areas of how do we handle E-mail that we get in. In this
12 day and age we get a lot more E-mail than we used to get
13 from various stakeholders. We have put out guidance about
14 if it's a professional record that needs to be maintained,
15 how it needs to be maintained; does it need to go into the
16 PDR? Answering questions about, is it like a phone call or
17 is it like a letter? We have come a long way in providing
18 guidance in areas like that.

19 Another lesson learned that we had was if a
20 licensing manager were to call up a project manager and
21 indicate that there is a concern that they are working on
22 and "we just want to let you know about it." What is the
23 expectation of the project manager?

24 We have gone over the fact that we would expect
25 that project manager would let his or her supervisor know,

1 get the word to the region so they're aware of it, and mark
2 it down, that that is an item that maybe is owned right now
3 by the licensee, but we need to follow up on it in a
4 reasonable amount of time. That's to stay on our radar
5 screen.

6 This was really separate from the Maine Yankee and
7 Millstone lessons learned, but we recognized the benefit of
8 rotating project managers on about a five-year period
9 similar to what we do with resident inspectors. A fresh set
10 of eyes is always good to have over a certain period of
11 time.

12 We have seen benefits clearly in the regions when
13 this has been done. We have been doing it in my
14 organization for probably the last six to eight months, and
15 I will expect the same dividends. Take your knowledge and
16 expertise to another facility. It helps consistency as
17 well.

18 CHAIRMAN JACKSON: When was this implemented?

19 MR. ZIMMERMAN: I believe it was about six to
20 eight months ago. In our process improvement plan we have
21 the closure date. I have that with me and I would be glad
22 to provide it to you.

23 CHAIRMAN JACKSON: Do you assign more experienced
24 PMs to more challenging facilities? Do you factor that in?

25 MR. ZIMMERMAN: Yes. We are trying to put our

1 stronger, deeper individuals on the plants that we find most
2 challenging. I think we have made headway in that regard,
3 but there is still more that we can do.

4 The process improvement plan, just to mention it
5 again. I believe a few months ago we sent a draft of that
6 document to the Commission. It's a very active document.
7 We are going to continue to add issues to that for us to
8 track, big and small. It seems to be working well.

9 We have a project manager, project director
10 advisory board. As we look at making changes we provide
11 those changes to this group, almost like an internal
12 partnering group, to give them an opportunity before we
13 update procedures: is there something from their vantage
14 point, from their perspective that maybe we haven't thought
15 of that we need to consider before we make the change?
16 Because changes can be a challenge for people to adapt to.
17 So we have tried to have a grass roots movement that I think
18 has been very successful.

19 In the long-term actions, we spoke a moment ago
20 about the job task analysis out in the field with the
21 residents. We are getting ready to undertake a similar
22 activity here with the project managers. We are working
23 currently on a statement of work that should be issued
24 shortly. It's approximately a six-month effort, and we will
25 likewise be monitoring it very closely.

1 We are aware that AEOD is working on a knowledge,
2 skills and abilities developmental activity, and we have had
3 dialogue with AEOD. We want to coordinate closely. We see
4 how this could be a good fit between what we are planning on
5 doing and the larger agency action, and we will incorporate
6 those.

7 CHAIRMAN JACKSON: It seems to me one has to be a
8 part of the other.

9 MR. ZIMMERMAN: Right. There is a natural feed
10 that occurs.

11 MR. MIRAGLIA: We had some activities underway
12 that were related. So there is a clear understanding to
13 make sure that they do fit and there is no unnecessary
14 duplication.

15 MR. ZIMMERMAN: We try to minimize duplication and
16 build off it.

17 I guess my closing message on this would be that
18 we are not waiting for the job task analysis, we are not
19 waiting for the knowledge, skills and ability review. We
20 will work in parallel as items come up. We are going to be
21 looking for ways to improve our performance.

22 CHAIRMAN JACKSON: The jobs task analysis for the
23 PMs has already begun?

24 MR. ZIMMERMAN: No, ma'am. The statement of work
25 should go out within the next week or two. Right now we are

1 hopeful that it will begin in March. It's the same
2 contractor.

3 MR. MIRAGLIA: It's the same contractor. So when
4 they are finished with the residents.

5 CHAIRMAN JACKSON: How long do you think again?

6 MR. ZIMMERMAN: Six months.

7 CHAIRMAN JACKSON: Thank you.

8 [Slide.]

9 MR. GILLESPIE: Going to the next slide, PRA
10 applications in the inspection program. Here I want to both
11 discuss where we are and the limitations of where we are
12 based on our own regulatory structure and how we are
13 approaching it and how it fits into the overall PRA
14 implementation plan.

15 We do recognize that there are areas for increased
16 improvement in using PRA in the inspection program. The
17 basic use over the most recent past has been in the
18 prioritization of what we look at, particularly in design
19 inspections, or when you select a sample.

20 If you select a sample within what safety system
21 am I going to look at for maintenance, what system am I
22 going to look at for this observation or test, then that is
23 where that one chart that seems to come out of all the IPes
24 generally will get used in the resident offices and by our
25 team inspections. That could be said to be a simplistic

1 use, but that dominates how we do use it for right now.

2 The evolving use gets me into the short-term
3 actions.

4 CHAIRMAN JACKSON: Can you give us some examples
5 or at least an example of where you see an opportunity for
6 increased use of PRA in the inspection program?

7 MR. MIRAGLIA: I think we are going to get into
8 it. Frank is going to talk about the senior reactor analyst
9 and trying to get someone with a little deeper knowledge in
10 risk assessment, having two individuals within each region.
11 Those individuals now are assisting and participating in the
12 maintenance team.

13 CHAIRMAN JACKSON: That tells me people. You gave
14 an example of how we are using it today in terms of
15 selection of safety systems to review. What else would you
16 be using such people for?

17 MR. GILLESPIE: I think what we are going to need
18 to do in the future is be significantly more articulate and,
19 to use a term that we have used here before, transparent on
20 how we use risk relative to the balance between support
21 systems and primary systems; how do we allocate things.

22 The primary source of our information for
23 enforcement is the inspector. As risk gets more inculcated
24 into our enforcement policy as a measure of severity or
25 weighting factor, it's actually the inspector who is the

1 primary person writing down those initial words on what his
2 observation was. So it is going to be important in the
3 future as we get risk into things like the enforcement
4 policy past what we look at, get involved in how much we
5 look at it.

6 But the inspector is the source. He is the guy
7 that pulls it together. It all comes together at the
8 bottom, quite honestly, rather than coming together at the
9 top.

10 MR. ZIMMERMAN: That's happening. We had a
11 meeting just yesterday on a particular plant that we are
12 considering escalated action on. We had the region on the
13 phone, Office of Enforcement involved, and we were talking
14 about what we do know from the IPE in this particular case,
15 what insights does that give to us. So it is something that
16 is being actively used now.

17 MR. GILLESPIE: A specific example is, as we
18 change our own rules, it's going to be the maintenance rule.
19 In fact, the SRAs were actively participating in what I will
20 call the risk element of the maintenance rule, which has
21 become kind of a critical element: which systems are
22 classified in what class, how are they characterized,
23 because that leads to what actions will be taken later if
24 the reliability values are found to be deficient.

25 The other thing is now the inspector, once that

1 rule is out there in place, process approved, is going to
2 have make judgments as to, is this component failing
3 consistent or inconsistent with the guidelines in place?
4 That's one rule, and in fact the inspector is now going to
5 be inspecting against that.

6 Our approach here. What you see in the slide is
7 two years ago when we proposed the senior reactor analyst
8 program we had also proposed in the risk implementation plan
9 the three level diagram on training. The SRA is the middle
10 level diagram. It's a practitioner who is expected to apply
11 something but not expected to necessarily have the skills to
12 go out and completely do a PRA himself, to get that analytic
13 view in the regions.

14 He coincidentally hit, if you will, or got in
15 place at the same time the maintenance rule was happening.
16 It came together very nicely and they participated on them.

17 In addition, to make sure that they did have the
18 analytic background, 29 of the 39 presentations on the IPE
19 results were given by the SRA when they were doing their
20 rotation through Research, when they were giving it to both
21 the PMs and the regional staff, to make sure they were
22 familiar with the facilities that were going to be in their
23 regions. So we really through the training program have
24 tried to elevate them to that second level.

25 I will go to the last bullet, which is the PRA

1 development course for inspectors on long term. Basically
2 what we have got is a course we are putting together with
3 TTC which is going to treat PRA as a basic technology that
4 should be known by each inspector and reviewer.

5 Much the same way we have a GE or Westinghouse or
6 B&W basic technology course we expect inspectors to have
7 gone through, we are looking at a two- to three-week course
8 which takes the individual courses and lessons learned from
9 the SRAs going through it and comments and puts them
10 together in a two- to three-week comprehensive course that
11 is intended to be the bottom level of what was on the risk
12 implementation plan.

13 That's a person who knows enough about it and how
14 it's applied so as he sees it applied in a 50.59 review he
15 might be doing, as he sees it used in a continuing
16 categorization of a failed component, or he sees it as part
17 of the justification for a change to the plant, he has the
18 wherewithal to either make a judgment that he can say, yes,
19 that looks okay, or "I need to call the SRA who is my backup
20 back at the region who is at the next level in the thought
21 process and the reference period."

22 So what we are trying to do is have the people in
23 place with the talents to keep pace with the change to what
24 they are inspecting to, because, quite honestly, we still
25 have to inspect to the rules that are in place today and the

1 license that is in place today. But as that becomes more
2 risk oriented or risk has an application of compliance or
3 inspectability, we have to really have the people there with
4 the tools.

5 That is where our focus is now, getting them
6 prepared. We were right there at the right time with the
7 SRAs, which was a very nice coincidence to have occurred. I
8 would like to say we planned it that way two years ago, but
9 it worked out very, very well.

10 CHAIRMAN JACKSON: There are some pilots going on
11 on risk informed tech specs, ISI, IST. Do we expect those
12 to have --

13 MR. MIRAGLIA: As those programs are developed,
14 then we will have to say if the rules are changing in that
15 area, then that has impact on how we have to train and how
16 we have to prepare the people.

17 MR. GILLESPIE: Absolutely. The engineering
18 inspector in the region who traditionally inspects ISI now
19 has to have this other tool in his background. Once you say
20 the program is okay, the implementation of the program is
21 left to that engineering inspector in the region. He is now
22 inspecting a different technology, a different set of
23 records, a different approach, and making judgments as to
24 reduced frequencies because of lack of flaws found or
25 increased frequencies: are they proportional?

1 It's as much reliability engineering as PRA in the
2 aspects that the inspector is looking at. So we think we
3 can give the inspector that level of tools, although we are
4 not making him a full-fledged analyst.

5 That is where we are going with that, and we are
6 trying to keep pace.

7 The next slides really come together totally. We
8 call it performance assessment process.

9 [Slide.]

10 MR. GILLESPIE: The short-term actions as we are
11 looking at improving our performance assessment process.
12 This has been a particular interest to the Commission for a
13 time now. It has also been an interest to us. We would
14 like to improve ourselves.

15 We have issued some management directives which
16 very much try to document what we are doing today. There is
17 a diagram on one of these management directives which has
18 lines going all over the place. My simplified view of that
19 is actually the last picture on this whole package, and it's
20 listed as backup slide.

21 [Slide.]

22 MR. GILLESPIE: It becomes very important only
23 because what we have done is we have set up our system with
24 the plant issues matrix to mesh the plant issues matrix
25 report. Now what we are doing is identifying where do the

1 facts of the situation of our process come from.

2 This diagram tries to show that the inspection
3 report is where everything really starts to come together;
4 every LER is followed up on; AITs have results, and those
5 are followed up on. Inspection reports become not the only
6 source but a significant source of assessment information.

7 After that -- and this gets to the root of what I
8 was calling diagnostics before -- you are basically dealing
9 with the same database but you are refining it into
10 different levels. The PPR uses the same information; the
11 senior management meeting uses the same information. Every
12 three PPRs you do a SALP. It uses basically the same
13 roll-up of information.

14 This will introduce me to my second to last slide,
15 which is, how could we use technology now to maybe help us
16 in this as the agency comes out of an era of the early 1980s
17 of technology or information management, which was really
18 document management, into the technology of the late 1990s
19 where we are going to try to use information management to
20 help us do this and to get more diagnostic, more
21 transparent, if you will, into the whole process?

22 So the short-term action really here in these
23 management directives was to document what we are doing
24 today in a way that people could understand it.

25 We also then have the Arthur Andersen report that

1 needs to be considered and how does that factor in. I think
2 what you can see is that leads to this idea that we have to
3 be able to digest more information more rapidly to do it
4 efficiently and not get inundated with the weight of our own
5 paper in our inspection reports. We need a rapid indexing
6 to the information.

7 The next diagram, which is a pictorial, while it
8 says future assessment model, this actually lays out the
9 information sources that we currently have in the current
10 system.

11 The problem with our information in the current
12 system is that they are basically disconnected. If I want
13 to know what were all the items in our compliance found at a
14 Westinghouse four loop plant, I've got one computer that
15 tells me what are all the Westinghouse four loop plants, but
16 I've got another computer that tells me what all the items
17 on our compliance are, and while the docket number should be
18 able to relate this information together, the two computers
19 don't talk to each other. So you get a manual printout from
20 here and a manual printout from here, and immediately you
21 are in a system that is so awkward we don't do it.

22 CHAIRMAN JACKSON: Is IRM in the room?

23 MR. MIRAGLIA: No.

24 MR. GILLESPIE: What this is trying to do is be a
25 pictorial. What we are looking at in the inspection report

1 half on the plant issues matrix that was developed and has
2 evolved is as an index to the details in the reports. This
3 will both be technology and program.

4 We are going to be coordinating changes to our
5 manual chapters and process to describe how we do things
6 with the introduction of the technology because it is going
7 to change what an inspection report looks like from today.

8 For us this is a relatively high risk operation
9 because we have never done this before. It is pulling an
10 awful lot of information together from a lot of dislocated
11 places right now to try to put it into the same useful form.
12 Which gets me to the next slide, because the key is being
13 able to access and sort information rapidly.

14 [Slide.]

15 MR. GILLESPIE: Reporting and information
16 technology is, I think, going to be key to our success here.
17 If I could describe this in a way that Commissioner Diaz
18 explained it to me, he saw the diagram, and he said, I'm
19 glad you got rid of the triangle on the backup diagram.

20 Once you identify where is your basic factual base
21 coming from, then you can get a sense that everything after
22 that is a different sort on the same information. Now the
23 question is, how do we want to sort the information?

24 If I can relate the facility's characteristics to
25 the docket number, which gets me a relationship then to the

1 list, then I can do peer plants much the way AEOD does their
2 performance indicators right now, and I can look for
3 correlations; I can do a lot of diagnostics that I can't do
4 today. Not because we don't have the information, but
5 because we have so much information.

6 The ability to diagnose, sort and filter the
7 information is extremely tedious and manpower intensive.
8 That is one of the complaints from the residents. They are
9 doing what they are doing today manually. They are
10 rehashing it for the PPR; they are rehashing the same stuff
11 for the SALP. If we can come up with a way of doing the
12 cutting and pasting in the electronic form rather than the
13 manual form -- in fact, Region II even graphs these on graph
14 paper with pencil and ruler manually.

15 CHAIRMAN JACKSON: You've got to be kidding.

16 MR. GILLESPIE: I have to automate it. We have to
17 come out of docket management into information management,
18 and it's a 20-year leap in technology for us.

19 CHAIRMAN JACKSON: And you are going to do it in
20 two years?

21 MR. GILLESPIE: We are hoping to do it within two
22 years. That is what our commitment is. We are hoping to
23 prototype this in a full region within 12 months. I'm going
24 to give it one heck of a try.

25 CHAIRMAN JACKSON: Twelve months. I'm writing

1 this down.

2 MR. GILLESPIE: We have two what I will call small
3 prototypes that we have actually tried in our own LAN
4 environment already with regional participants. With time I
5 am gaining more confidence that it's fairly doable.

6 We found some glitches in the whole system, things
7 you would think smart people -- we're all engineers --
8 should know. In the last two years we have created a number
9 of databases and we were smart enough to use the same kind
10 of off-the-shelf commercial software, but we weren't smart
11 enough to label everything the same. So docket numbers in
12 one system are zero five zero dash something; in another
13 system it's five zero dash something; and they don't even
14 talk to each other.

15 CHAIRMAN JACKSON: This is where the CIO
16 organization should be helping you out, because your jobs
17 are one thing. The best way to handle information is
18 another thing.

19 MR. GILLESPIE: If I could jump into the
20 conclusion on 14.

21 [Slide.]

22 MR. MIRAGLIA: I think, Frank, we ought to say we
23 have been coordinating with IRM.

24 MR. GILLESPIE: We have joint project managers
25 with IRM and my organization and people working full time in

1 both organizations to try to make this work. Actually we
2 have no conflicts. The conflicts are technological ones.

3 CHAIRMAN JACKSON: All right.

4 MR. GILLESPIE: The conclusions. We have an
5 evolving program, particularly as it applies to inspection.
6 One of the conclusions and one of the strengths, I would
7 say, of the inspection program which we have been talking
8 about is the discipline of having an inspection manual in
9 some detail and generally having a baseline to change. That
10 includes detail in training, detail in how we do things. If
11 we have an unusable procedure, at least we can point to it
12 and know what we have to change. That is a strength, the
13 discipline we have approached it with.

14 Both self-assessments and external reviews have
15 led to program improvements. I would not want to claim
16 either one is stronger than the other. They tend to fit
17 together and actually be self-supporting.

18 Future direction will be closely coordinated and
19 integrated. This is this tying of the diagnostic and the
20 inspection and a recognition of how it's the same group of
21 people doing it. So we have to give them the tools to do it
22 as best we can.

23 The balance between operations and design is going
24 to be with us long term as we make decisions: Is it staff?
25 Is it contractor? And out of the whole how much is it?

1 What is the safety significance? How does it queue up?

2 Performance assessment I've touched upon.

3 Our real challenge is how do we use technology to
4 try to get us this giant leap forward in the technology
5 area.

6 With that, I thank you.

7 CHAIRMAN JACKSON: Thank you.

8 Commissioner Rogers.

9 COMMISSIONER ROGERS: I think this is very
10 interesting. A lot of questions I had when I walked in here
11 got answered, but let me touch on a couple of points.

12 On your performance assessment backup slide, one
13 of the problems that I have with this is that it looks like
14 it's a totally event driven process.

15 [Slide.]

16 COMMISSIONER ROGERS: It starts with an occurrence
17 observation or allegation. It looks like there is something
18 external to what we do that starts a process. In other
19 words, it looks like it's event driven and not initiated in
20 a certain sense by us.

21 MR. GILLESPIE: That's my drawing problem. The
22 observation piece is our routine program. We have got 434
23 people out there who are for the most part working the
24 observation aspect of it.

25 What I was trying to do is get a recognition of

1 even when we have an event and have an AIT, even the AIT
2 report is basically an inspection report while we call it
3 something else because it doesn't generally come through to
4 compliance. But any unresolved issues or any compliance
5 items or problems that come out of that event-driven end up
6 right back in our system of observations, because it's the
7 inspector where the rubber meets road who has to follow up
8 on it.

9 This was only intended to show that really we do
10 have a way. If all the information comes together in enough
11 of a bottleneck, we may actually be able to deal with this
12 if we can deal with how we articulate our findings. We
13 added in the PIM about a year and a half ago, and if I wrote
14 an inspection report so that the list item was in the
15 executive summary and every list item has detail in the
16 background of the report and it's a relationship, and I
17 index that item to SALP functional area, cause code -- in
18 fact in the second part of the Arthur Andersen report there
19 is one page on it which had, here's what we did to come up
20 with what we have; we think you should consider these other
21 things. But we didn't do it.

22 If you look at those other things, they look very
23 much like the LER cause codes; it's procedural compliance
24 personnel over design.

25 So those are actually things we already feed our

1 computers but we can't get it out because it's not connected
2 to anything, and that is called the IV system, which is
3 something we had hoped to fix.

4 So observation should probably be in much bigger
5 letters than occurrence and allegation follow-up.
6 Observation is what we do day to day.

7 CHAIRMAN JACKSON: You should capitalize it.

8 MR. GILLESPIE: Yes.

9 COMMISSIONER ROGERS: We don't want to be
10 controlled simply by events.

11 MR. GILLESPIE: No. Absolutely not.

12 COMMISSIONER ROGERS: Otherwise we will be chasing
13 those all the time and not taking another kind of look.

14 CHAIRMAN JACKSON: I just think it's presentation.

15 COMMISSIONER ROGERS: The other point on
16 performance assessment is that I was just curious as to what
17 your view of performance assessment is compared to the one
18 that the materials people have, particularly in looking at
19 waste sites. They have a rather large performance
20 assessment, or had a large performance assessment effort
21 there. I wonder if the terminology here is really basically
22 the same or different, and whether you had looked at their
23 approach to performance assessment.

24 MR. GILLESPIE: I have only got a sketchy
25 background on high level waste. Performance assessment in a

1 waste sense is the assessment of the repository?

2 COMMISSIONER ROGERS: No. It's not just the high
3 level.

4 MR. THOMPSON: It's a modeling process, which ends
5 up with a release rate into the environment. The words are
6 the same, but they really are focusing on something
7 different.

8 COMMISSIONER ROGERS: It's the process that I am
9 talking about. I'm not saying they should be the same. I
10 am just asking whether you have looked at and understand any
11 comparison between the two.

12 MR. GILLESPIE: We are not trying right now to
13 create a mathematical model. So in that sense it's
14 different. In principle, my view would be that the PIM
15 should actually be part of a report, because the licensee
16 then gets to see it. If the licensee agrees with the fact
17 that the inspector saw, now maybe I have a fact, and now I
18 can index and classify the fact.

19 MR. MIRAGLIA: I think the key is we are assessing
20 a different type of performance. I am not that familiar
21 with the performance assessment models used.

22 COMMISSIONER ROGERS: I don't want to get into it
23 too deeply here, because it might take us a little bit far
24 afield. I just want to raise the point that we are using
25 terminology that has kind of a superficial look about it

1 that is trying to achieve something close to the same thing
2 in one area versus another. I am just asking you to make
3 sure that you understand anything that might be beneficial
4 that comes from that.

5 MR. THOMPSON: The more we go to performance-based
6 regulations in the reactor side the better overlay there
7 will be, that is, where you can actually do some information
8 input into a model and you do calculations that come out to
9 drive some aspect of your evaluation to something that
10 matches your regulatory criteria. In those cases they will
11 actually come closer as we get that way.

12 COMMISSIONER ROGERS: As you use this approach to
13 performance assessment that you sketched out, Mr. Gillespie,
14 it does seem to me that there may be a little problem here
15 in that we are moving back into the use of judgment.

16 I'm not averse to that, but I think we ought to
17 recognize that in looking at the total ability of a system
18 to perform. You cited some examples which I think were very
19 good, the tank problem. That came about because somebody
20 exercised some engineering judgment in looking at it. That
21 was a darn good thing.

22 So it's not a bad thing to use engineering
23 judgment in this performance assessment, but I think we
24 ought to recognize that that is probably going to have to be
25 a part of it. At any rate, I would ask you to think about

1 that and address it as you proceed.

2 The other point is that I am a little concerned
3 about the resident inspectors. I wonder if you are not
4 perhaps overloading them. They have got a heavy burden
5 here, and I think particular care should be taken to see
6 that as you add into their activities these new
7 responsibilities that they get the kind of personal support
8 that they need to be able to get through this initial
9 period.

10 MR. MIRAGLIA: I think the job task analysis will
11 certainly give us a basis to evaluate that in a very
12 conscientious kind of way.

13 MR. GILLESPIE: Let me give you an example of the
14 feedback from the job task analysis. There is real
15 aggravation with the residents about preparing PPR packages,
16 SALP packages, senior management meeting packages, and
17 cutting and pasting. In fact, what we are trying to do with
18 the technology is, if we could standardize that, I can
19 relieve them of that burden of right now literally manual
20 cutting and pasting and then Xeroxing it to make it look
21 like an original piece of paper.

22 One of the objectives is to actually reduce that
23 burden through some sense of standardization and who does
24 what function. In fact, to try to reduce the cutting and
25 pasting or administrative burden of the whole thing all

1 across the board.

2 CHAIRMAN JACKSON: Frankly, I think one of the
3 greatest achievements in addition to actually saving in
4 terms of people spending their time on administrative things
5 is that in fact it can help to ensure actual consistency of
6 approach as you move up the line from PIMs to PPRs to SALPs
7 to whatever.

8 MR. MIRAGLIA: I was going to say something very
9 similar. In terms of not only efficiency and technology, it
10 will have us look at the functions: What functions are we
11 performing? Are they clearly the expectations out there and
12 are they understood? I think that is another thing that is
13 going to be an outcome of that. It is going to be an
14 iterative type process. We are going to learn as we go
15 along.

16 CHAIRMAN JACKSON: Commissioner McGaffigan.

17 COMMISSIONER MCGAFFIGAN: I don't want to get into
18 things that we are going to do next week, but this last
19 backup slide I think is one of the best things I've seen
20 since I've been here in trying to get a lot of information
21 down on one piece of paper.

22 The plant issues matrix, when you get through this
23 computerization that you are going to do, is it going to be
24 the central document? It seems to be on this slide. If you
25 have a good plant issues matrix, then everything else flows

1 from it. So that's the heart of it?

2 MR. GILLESPIE: Yes.

3 COMMISSIONER McGAFFIGAN: We talked in my office
4 the other day and you just mentioned some day the goal is to
5 be able to -- at the moment, as I understand it, licensees
6 every six months get an update to their inspection plant,
7 and it is sort of like reading tea leaves or the Kremlin
8 wall: Where is the NRC today? They are worried about X, Y
9 and Z; there is a change there, therefore I better do
10 something. But we don't convey any more information than
11 that. If we could convey the plant issues matrix, would we
12 be conveying a lot more information?

13 MR. GILLESPIE: Yes. This is something that has
14 kind of come up. It is a public document. If someone
15 submitted an FOIA request, we would release it; we wouldn't
16 fight it. So then the question came up among the staff,
17 well, what is the best place to promulgate it since it's a
18 critical element in going into the PPR relative to the
19 summary document?

20 What we have toyed with within my group is going
21 to be a recommendation to the regional administrators that
22 we just attach it to the letter that already goes out with
23 the inspection schedule.

24 MR. MIRAGLIA: That hasn't been run up the chain
25 yet. Let's talk very candidly and frankly. It's not a

1 secret. Everything in the PIM is going to be public.
2 That's what our goal is.

3 We just instituted this process last year. Each
4 region approached it differently, and there are differences
5 in consistency. I think our goal is we don't want to have
6 one PIM in Region I looking very different from Region II.
7 So we are evolving. We are going to get there. At a point
8 in time I think we can share this information. That is our
9 goal and objective.

10 CHAIRMAN JACKSON: We may do something to hurry
11 you along in the process as a motivator for driving toward
12 the consistency faster.

13 MR. MIRAGLIA: That's the goal. The PIM was a
14 tool that we tried to use and we are learning. There are
15 differences; they are getting closer together; and as we get
16 to that point, as Frank says, I think their recommendation
17 will probably be accepted. It's just to make sure that
18 everybody is doing it in a consistent kind of manner.

19 COMMISSIONER McGAFFIGAN: I would agree entirely
20 on the consistency. From my perspective, this all leads
21 into the senior management meeting and the watch list and
22 all that sort of stuff. It would be nice to be conveying to
23 all 108 operating plants where we think they stand every six
24 months.

25 I think somebody said the PPR drives resources

1 around here, and since it drives so many resources, the
2 outcome shouldn't perhaps just be the X number of plants
3 that are on the watch list; it should be information
4 conveyed to everyone.

5 MR. MIRAGLIA: It's a tool to the whole process,
6 and we have to make decisions on how to apply the resources
7 to all 110 plants. This is the mechanism for doing that.

8 Another issue with respect to the PIM besides
9 consistency is we need to have a common understanding among
10 all of the regions and ourselves as to what is the threshold
11 for putting something on there.

12 COMMISSIONER MCGAFFIGAN: Right. When is it an
13 issue?

14 MR. MIRAGLIA: Yes, and that is another thing
15 where there are differences and we are trying to sort out.
16 I think we are striving to that same goal and objective, and
17 the question is how soon can we get there.

18 MR. GILLESPIE: Because we are in a public
19 environment, we have a programmatic requirement that each
20 PIM item actually have its reference. Nothing is really
21 allowed to be on the plant issues matrix that doesn't have a
22 reference. The reference will be either an inspection
23 report or an inspection report which then gets you to like a
24 licensee report, because what we are interested in is, is
25 the licensee system working? Is he finding and correcting

1 things also?

2 So it's important to note that we give credit on
3 that. The basic question is, if you find something wrong at
4 a facility, that thing not showing up again is some evidence
5 that the root cause has been fixed. If that thing shows up
6 again even though it was fixed once, then you have to
7 question whether it has been fixed. So there is a trending
8 nature to why you would want put even things that we give
9 them credit for in one report on it if they are safety
10 significant.

11 We are thinking out how to use the PIM. These are
12 the thoughts that we had in place when we put it in place.
13 It becomes an index then to what is in the reports, because
14 it does have that link to a public document. The details
15 are in there.

16 COMMISSIONER MCGAFFIGAN: Thank you.

17 CHAIRMAN JACKSON: Your backup slide is a big hit,
18 because what I want to tell you is that Commissioner Diaz
19 asked me to, and I will just read it, commend the staff for
20 transforming the pyramid into a functional line process that
21 is conducive to implementation of pass/no pass filters and
22 actual weighted feedback to decrease or prioritize
23 information for decision-making. N. Diaz.

24 So I would like to thank you for a very
25 informative briefing. Obviously the Commission is very

1 interested in this and obviously is closely monitoring it.
2 I think you have begun to address it as a guide to a thought
3 process. Your backup slide suggests this.

4 As you continue to implement the improvements you
5 talked about and others, what we are particularly interested
6 in is how our NRC staff activities provide the inputs into
7 the assessments that we make and the regulatory actions that
8 follow from those assessments, and then how they lead
9 ultimately to our attaining and providing to the public and
10 the licensees a clear and coherent picture of their
11 performance, the performance at operating reactors in this
12 particular case.

13 We are looking forward to the additional
14 Commission meetings. Again, thank you very much.

15 I would like to remind the Commissioners that we
16 do have an affirmation session.

17 [Whereupon, at 3:55 p.m., the briefing was
18 adjourned.]

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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 OPERATING REACTOR
OVERSIGHT PROGRAM AND STATUS OF
IMPROVEMENTS IN NRC INSPECTION PROGRAM
- PUBLIC MEETING

PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: Thursday, February 13, 1997

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: Michael Paulus

Reporter: Michael Paulus

**OPERATING REACTOR OVERSIGHT PROGRAM
AND STATUS OF IMPROVEMENTS IN NRC
INSPECTION PROGRAM**

**Frank P. Gillespie
Roy P. Zimmerman
Office of Nuclear Reactor Regulation
Division of Inspection and Support Programs**

February 13, 1997

PRESENTATION OBJECTIVES

- o Discuss the reactor oversight program improvement process**
- o Discuss the status of current improvement initiatives and planned long term actions**

ORGANIZATIONAL STRUCTURE

- o NRR develops policy and procedures**
- o NRR and regions coordinate closely through several feedback mechanisms to continuously improve the reactor oversight program**
- o Regions implement the majority of the inspection program**
- o Other organizations provide independent review**
- o Deputy Executive Director for Regulatory Effectiveness, Program Oversight, Investigations, and Enforcement (DEDO) will play a prominent role in future oversight of the program**

REACTOR OVERSIGHT PROGRAM SELF-ASSESSMENTS

- o Audits**
- o Special reviews**
- o Direct observation of SALP meetings, plant performance reviews (PPR), inspections, and participation in counterpart meetings**
- o Solicitation of feedback from industry and the public**

EXTERNAL REVIEWS OF THE REACTOR OVERSIGHT PROGRAM

- o Office of the Inspector General (OIG)**
- o General Accounting Office**
- o Industry and public feedback**

IMPROVEMENT AREAS

- o Identification of Design Issues**
- o Inspector Qualification & Training**
- o Project Manager Qualifications & Training**
- o PRA Applications in the Inspection Program**
- o Performance Assessment Process**
- o Reporting and Information Technology**

IDENTIFICATION OF DESIGN ISSUES

- o Problem areas**
 - Insufficient design considerations in the inspection program and lack of design expertise in the inspection staff**
 - Lack of systematic incorporation of design inspections into the core inspection program**
 - Insufficient information from licensees on the status of design basis reconstitution**
 - Lack of availability of design information**
- o Short term actions**
 - Architect engineer (AE) design inspections**
 - 3 completed/3 ongoing**
 - Regional inspections of engineering**
 - New inspection procedure is being developed to add a vertical slice approach to existing inspections of engineering**
 - 10 CFR 50.54(f) letter follow-up**
- o Long term actions**
 - Millstone lessons learned - policy issues**
 - Design basis/licensing basis/FSAR**
 - Evaluate the balance between operations and design inspections**

INSPECTOR QUALIFICATION & TRAINING

- o Problem areas**
 - Training documentation weaknesses**
 - Management expectations for performance-based inspections were not clearly communicated or understood**
 - A combination of NRC organizational changes -- elimination of section chiefs -- and an increased emphasis on assessment activities led to concerns that inspection activities were suffering at the expense of assessment activities**
- o Short term actions**
 - NRC Inspection Manual Chapter (IMC) 1245 revised in 1996**
 - Reflect the current policy on training**
 - Make inspector classifications generic**
 - New training course developed, "Field Techniques and Regulatory Processes" to address performance-based inspection**
 - Scheduled for March 10, 1997**
- o Long term actions**
 - Implement results from the job task analysis (JTA) related to inspector qualification and training**
 - Final report due March 1997 from Los Alamos National Laboratory**

PROJECT MANAGER QUALIFICATIONS & TRAINING

- o Problem area**
 - Improvements needed in NRC project manager (PM) qualifications and training**
- o Short term actions**
 - Issued expectations on interactions with regional office**
 - Shared safety responsibility**
 - Frequent and substantial communications**
 - Issued expectations on maintaining and use of FSAR for licensing reviews**
 - Reviewing process training needs of PMs (i.e., allegations, lessons learned); PM workshops (3 completed, 2 additional scheduled)**
 - Implemented 5 year PM rotation similar to resident inspectors**
 - Reviewing guidelines for formal technical training needs of PMs**
 - Associate Director for Projects Process Improvement Plan**
- o Long term actions**
 - AEOD agency wide integrated assessment of regulatory knowledge, skills and abilities**
 - Job task analysis for PMs (will be coordinated with AEOD's efforts)**
 - PM training program will be revised based on JTA/AEOD results**

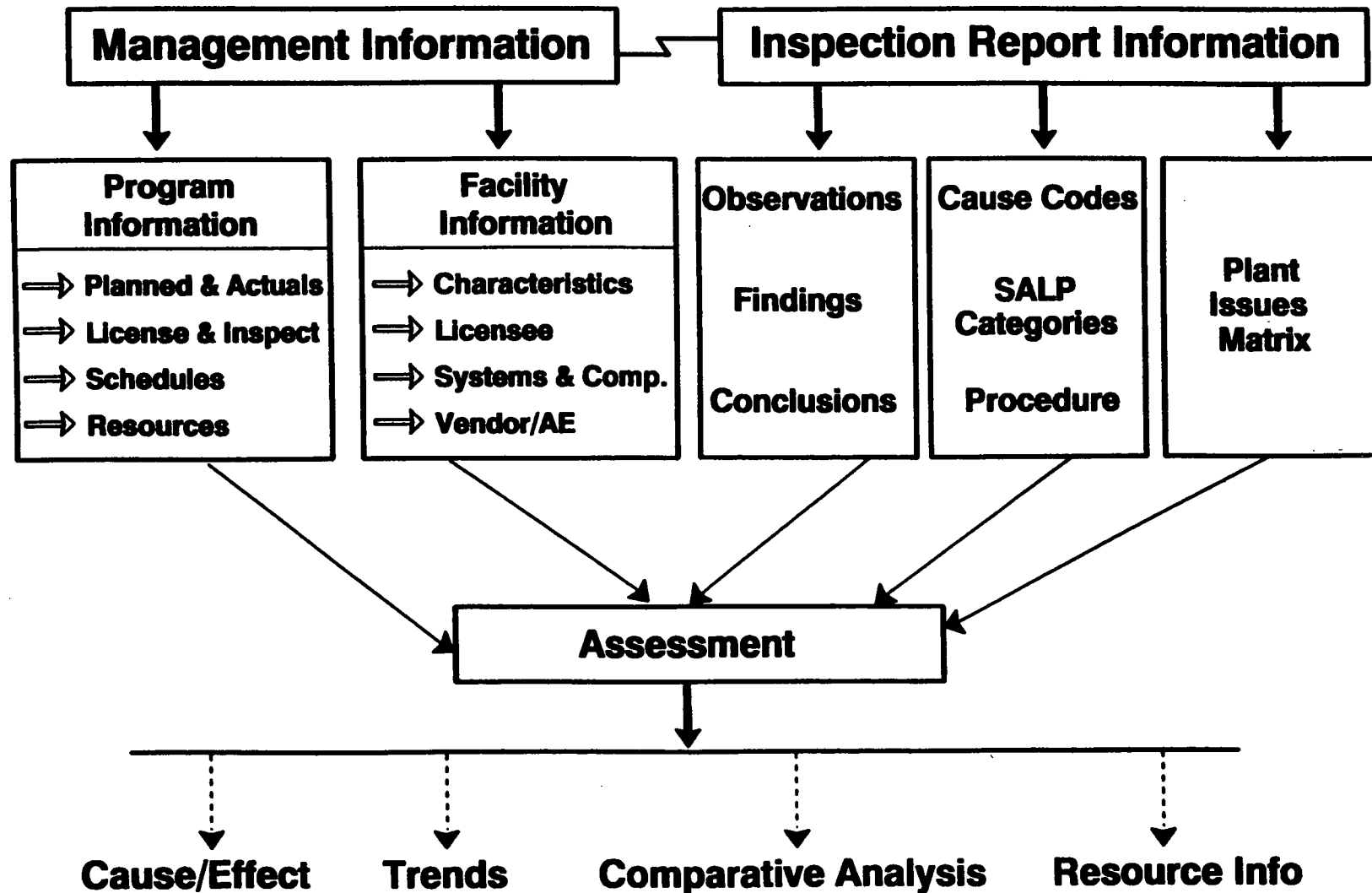
PRA APPLICATIONS IN THE INSPECTION PROGRAM

- o Improvement area**
 - Opportunities for increased use of PRA in the inspection program**
- o Short term actions**
 - Senior Reactor Analyst (SRA) program**
 - Seven SRAs are scheduled to complete qualifications in February 1997**
 - SRAs will provide risk-informed recommendations to management in inspection, enforcement, and assessment activities**
 - New training course under development -- PRA Applications Course**
 - Target date: Fall 1997**
- o Long term actions**
 - Continue to evaluate and implement new (effective) uses of PRA in the inspection program**

PERFORMANCE ASSESSMENT PROCESS

- o Problem area**
 - Improvements needed in integration of inspection findings, timely identification of declining licensee performance trends, and better coordination between individual components of the assessment process**
- o Short term actions**
 - New NRC management directive on integration of performance assessment processes (MD 8.13) issued on October 24, 1996**
 - New NRC management directive on the Senior Management Meeting Process (MD 8.14) issued in draft form on May 1, 1996**
 - Commission briefing on, "Arthur Anderson Assessment of the Senior Management Meeting process and Information Base," scheduled for February 18, 1997**
- o Long term actions**
 - Evaluate the Arthur Anderson assessment of the SMM**
 - Streamline the performance assessment process to improve accuracy, objectivity, efficiency, and transparency**

FUTURE PERFORMANCE ASSESSMENT MODEL



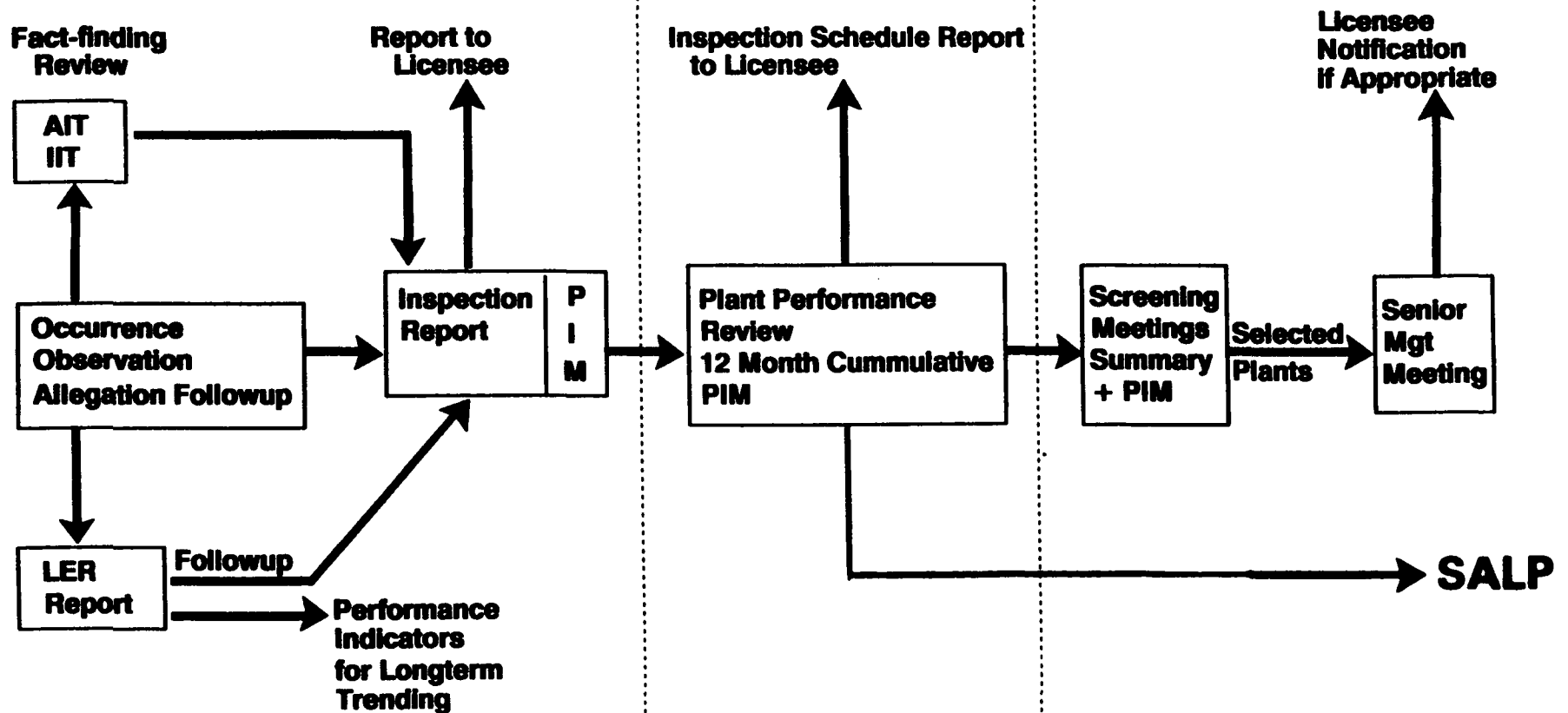
REPORTING AND INFORMATION TECHNOLOGY

- o Problem areas**
 - Improvements needed in the quality of NRC inspection reports**
 - Improvements needed in increased automation of processing inspection report information**
- o Short term actions**
 - Major revision to staff guidance: NRC IMC 0610**
 - Focus on report content and aimed at improving consistency, clarity, and accuracy**
 - Format designed to feed directly into assessment process (and future performance assessment system)**
 - Agency-wide training provided to inspectors and supervisors**
- o Long term actions**
 - Reactor Program System (RPS) under development to enhance information management and analysis to support decision making**
 - Target date: FY99**

CONCLUSION

- o The reactor oversight program is continuously evolving**
- o Both self-assessments and external reviews have led to program improvements**
- o Future direction of the program will closely coordinate and integrate:**
 - The balance between operations and design inspections**
 - Inspector and project manager expertise**
 - Increased incorporation of PRA**
 - Improvements in performance assessment (accuracy, objectivity, efficiency, and transparency)**
 - Use of information technology**

PERFORMANCE ASSESSMENT



BACKUP