

# UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

Title: AFFIRMATION/DISCUSSION AND VOTE

Location: ROCKVILLE, MARYLAND

Date: MAY 24, 1989

Pages: 4 PAGES

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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AFFIRMATION/DISCUSSION AND VOTE

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PUBLIC MEETING

Nuclear Regulatory Commission  
One White Flint North  
Rockville, Maryland

Wednesday, May 24, 1989

The Commission met in open session, pursuant to notice, at 3:30 p.m., Thomas M. Roberts, Acting Chairman, presiding.

COMMISSIONERS PRESENT:

THOMAS M. ROBERTS, Acting Chairman of the Commission  
KENNETH C. ROGERS, Member of the Commission  
KENNETH M. CARR, Member of the Commission

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STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

JOHN HOYLE, Acting Secretary

WILLIAM C. PARLER, General Counsel

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## P-R-O-C-E-E-D-I-N-G-S

3:30 p.m.

ACTING CHAIRMAN ROBERTS: Good afternoon, ladies and gentlemen. This is an Affirmation session.

Chairman Zech is on travel. I am the acting chairman. We have one item to come before us this afternoon. Before I ask the Secretary to walk us through, do any of my fellow Commissioners have any comments to make?

(No response.)

Mr. Secretary, please proceed.

ACTING SECRETARY HOYLE: Mr. Chairman, before we proceed we do need to vote to hold this meeting on short notice, so I ask you to vote now.

(Ayes).

ACTING SECRETARY HOYLE: Thank you.

The item that we have this afternoon is a Commission response to a motion to reconsider Seabrook Order CLI-89-08. The Commission is being asked to respond to a May 23, 1989 petition from the Massachusetts Attorney General to reconsider the decision in CLI-89-08 to deny intervenor's application for a stay of issuance of the Seabrook low power license.

Chairman Zech, Commissioners Roberts, Carr

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1 and Rogers who are here present\*, have approved an  
2 order denying the motion to reconsider. Commissioner  
3 Curtiss did not participate.

4 May I ask you to affirm your votes.

5 (Ayes)

6 ACTING SECRETARY HOYLE: Thank you.

7 ACTING CHAIRMAN ROBERTS: Is there anything else  
8 to come before us?

9 ACTING SECRETARY HOYLE: No, sir, I have  
10 nothing.

11 ACTING CHAIRMAN ROBERTS: Adjourned.

12 Whereupon, at 3:32 p.m., the public hearing  
13 was adjourned.)

14

15 \*Secretary's Note: Commissioners Roberts, Carr, and  
16 Rogers were present at the meeting, Chairman Zech was  
not, but had previously indicated his approval of  
this paper.

17

John C. Hoyle

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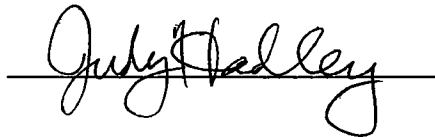
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TITLE OF MEETING: AFFIRMATION/DISCUSSION AND VOTE

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: MAY 24, 1989

were transcribed by me. I further certify that said transcription  
is accurate and complete, to the best of my ability, and that the  
transcript is a true and accurate record of the foregoing events.



Reporter's name: Judy Hadley

# UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

Title: BRIEFING ON FINAL RULE AND REGULATORY GUIDE FOR  
MAINTENANCE OF NUCLEAR POWER PLANTS

Location: ROCKVILLE, MARYLAND

Date: MAY 31, 1989

Pages: 64 PAGES

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NUCLEAR REGULATORY COMMISSION

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BRIEFING ON FINAL RULE AND REGULATORY GUIDE FOR  
MAINTENANCE OF NUCLEAR POWER PLANTS

- - - -

PUBLIC MEETING

Nuclear Regulatory Commission  
One White Flint North  
Rockville, Maryland

Wednesday, May 31, 1989

The Commission met in open session, pursuant to notice, at 2:00 p.m., Lando W. Zech, Jr., Chairman, presiding.

COMMISSIONERS PRESENT:

LANDO W. ZECH, JR., Chairman of the Commission  
THOMAS M. ROBERTS, Commissioner  
KENNETH M. CARR, Commissioner  
KENNETH C. ROGERS, Commissioner  
JAMES R. CURTISS, Commissioner

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## STAFF SEATED AT THE COMMISSION TABLE:

SAMUEL J. CHILK, Secretary

WILLIAM C. PARLER, General Counsel

FRANK MIRAGLIA, Staff

~~EDWARD JORDAN, Staff~~

VICTOR STELLO, JR., Staff

WILLIAM MORRIS, Staff

MONI DEY, Staff

THOMAS KING, Staff

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P-R-O-C-E-E-D-I-N-G-S

(2:04 p.m.)

CHAIRMAN ZECH: Good afternoon, ladies and gentlemen. Today the staff will brief the Commission on the subject of the final rule and regulatory guide for maintenance of nuclear power plants.

During visits to the nuclear power plants that I've been able to make, I've concluded that maintenance could and should be improved in almost all of the plants in our country.

The Commission in 1988 directed the staff to develop a rule on maintenance of nuclear power plants. I have, frankly, been impressed by the tremendous teamwork effort put forth by the staff to develop on the Commission's accelerated schedule the final rule on maintenance of nuclear power plants and the accompanying draft regulatory guide. This accelerated rulemaking effort immediately served to increase industry attention on this important aspect of nuclear power plant safety.

During some of my more recent visits to the plants, I've begun to see improvements in maintenance and certainly some improvements at most all of the plants and significant improvements at others.

However, I firmly believe that even today,

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1 maintenance remains an area where most utilities could  
2 improve in maintenance, and some utilities could  
3 improve substantially.

4 Because maintenance, in my view, plays such  
5 an important and integral role with plant operations  
6 in assuring public safety, I am convinced that a rule  
7 on maintenance is needed, not only for improved  
8 maintenance today, but to ensure the continued proper  
9 maintenance of power plants in the future.

10 I continue to believe that it is appropriate  
11 for this Agency to pursue this maintenance rulemaking  
12 initiative. However, I continue to believe that  
13 industry assistance in developing a standard for  
14 maintenance would be extremely valuable.

15 I am concerned that without their expert  
16 involvement in developing such a standard, that  
17 perhaps the draft regulatory guide that backs up and  
18 amplifies the maintenance rule might not be as good as  
19 it can or should be. This has been a factor in my  
20 reassessment of our readiness to approve a rule on  
21 maintenance at this time.

22 Consequently, I proposed to my fellow  
23 Commissioners that we defer action on this maintenance  
24 rule, which the staff will discuss with us today. I  
25 propose that we defer action for a period of about 18

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1 months while actions are in progress to further  
2 improve the draft regulatory guide.

3 My proposal will provide that during the 18-  
4 month period, the staff would prepare a strengthened  
5 maintenance policy statement for Commission  
6 consideration and publish the draft regulatory guide  
7 for public comment.

8 If it became necessary, I would expect the  
9 staff to bring in contractor assistance to provide any  
10 expertise that was needed in order to assure the  
11 integrity and validity of the regulatory guide, which  
12 may serve in the place of a uniform standard for  
13 maintenance in the nuclear industry.

14 My proposal would also provide that at the  
15 end of the 18-month period, the Commission could  
16 review the industry's improvement in maintenance and  
17 the status of the uniform standard for maintenance and  
18 decide what, if any, additional regulatory action  
19 might be appropriate.

20 In the interim, the Commission would hold a  
21 final maintenance rule, which provides an excellent  
22 foundation for the Nuclear Regulatory Commission's  
23 regulation of maintenance and readiness, should  
24 circumstances warrant its prompt promulgation.

25 I understand that copies of the staff's

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1 slides are available as you enter the room. I know  
2 Commissioner Rogers has a statement to make. Do any  
3 of my other fellow Commissioners have any comments to  
4 make before I call on Commissioner Rogers?

5 (No response.)

6 If not, Commissioner Rogers, you may  
7 proceed.

8 COMMISSIONER ROGERS: Well, after a nuclear  
9 power plant has been constructed and licensed, the  
10 impact of the plant on public health and safety is  
11 entirely dependent on the competence of the operators  
12 and the material condition of the plant, as determined  
13 by the quality of the maintenance program.

14 Poorly maintained equipment can frustrate  
15 the best efforts of even the most competent operators.  
16 The relevance of maintenance of nuclear power plants  
17 to public health and safety is obvious and, therefore,  
18 its relevance to the deliberations of this Commission  
19 should be without question.

20 In discharging its responsibility for public  
21 health and safety, the issue that the Commission must  
22 now address is: How can we best ensure that a  
23 suitably high level of maintenance is consistently  
24 sustained in every U.S. nuclear power plant at all  
25 times?

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1           The answer to that question is not obvious.  
2           It's clear that good plans and sufficient resources do  
3           not necessarily produce satisfactory results and that  
4           mechanisms of accountability for results are of  
5           fundamental importance.

6           We've heard many comments on this proposed  
7           maintenance rule. Today we have the opportunity to  
8           hear the staff's views on the key issues, especially  
9           on how a rule might assure safety, as well as whether,  
10          as some contend, it might even detract from safety.

11          We're here to learn from the staff what, in  
12          its opinion, is the answer to the maintenance  
13          question. I hope that, in giving us its views, the  
14          staff will not try to anticipate what might be the  
15          Commissioners' near term decision on how to proceed,  
16          but will give us their most candid professional  
17          opinions.

18          I'll look forward with keen interest to the  
19          staff's presentation.

20                 CHAIRMAN ZECH: Thank you very much.

21                 Mr. Stello, you may proceed.

22                 MR. STELLO: Thank you, Mr. Chairman. We  
23                 have been struggling for a long time with the issue of  
24                 maintenance. And I think, as you pointed out, the  
25                 fact that we haven't been involved with the issue of

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1 maintenance has caused the maintenance that we now  
2 observe in plants to have improved.

3 I think the briefing that you had from our  
4 team inspection shows that, in fact, maintenance is  
5 getting better. -- We generally see the paper program  
6 for maintenance reasonably all right, but the  
7 variation in implementation and maintenance, I should  
8 point out, could stand improvement. Some could stand  
9 quite a bit of improvement.

10 How to get there, as Commissioner Rogers has  
11 pointed out, is not easy. After reading and talking  
12 to many who have commented on the rule, including our  
13 ACRS, who suggest that we ought not to go forward with  
14 a rule at this time, I have come to the contrary view  
15 that I think we ought to continue going forward with  
16 the rule.

17 Part of the rule that I believe is most  
18 important is a part of the rule that allows for a  
19 third party certification and development of what it  
20 is and perhaps even assistance, what it is that is, in  
21 fact, good and proper maintenance.

22 I think the industry has the expertise  
23 available to it. That expertise exists in INPO as  
24 well as in other parts of the industry organizations.  
25 And I think they could put together a very useful

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1 comprehensive program to really improve throughout our  
2 country the maintenance at all our nuclear plants.

3 I think this is important that it be done,  
4 important for safety. I think it would be important  
5 ~~from the perspective of the owners in~~ improved  
6 reliability of equipment and more efficient operation  
7 and eventually, most likely, very significantly  
8 improved plant availability and capacity factors.

9 I am concerned, as the industry points out,  
10 that once the NRC gets into it and we start to  
11 regulate it, that there is the potential that we may,  
12 in fact, detract from the purpose we all seek, which  
13 is improved maintenance, because of getting some false  
14 starts.

15 This could be avoided if the industry is  
16 sincere and moves forward for the third party  
17 certification. I think if we do not have the rule, we  
18 have not achieved that goal, and I am not persuaded  
19 that the net result in the improvement in maintenance  
20 will continue at the pace we've seen in the past.

21 I am concerned that if we could let up now,  
22 we would tend to see a slackening of the progress we  
23 have made, and I don't think that's in our interest or  
24 the interest of the industry. And, therefore, it's  
25 the staff recommendation that we move forward and go

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1 with the rule.

2 And with that introduction, let me ask Billy  
3 to start the briefing, and we'll be happy to answer  
4 all questions you may have. Billy?

5 MR. MORRIS:-- First page of the handout, we  
6 have an outline of the briefing. Let me continue on,  
7 though. The second page we discuss some of the  
8 background that led us to where we are today.

9 It was in March of 1988 that the Commission  
10 issued its policy statement on maintenance of nuclear  
11 power plants. The policy had evolved from a series of  
12 reports provided to the Commission by the staff in the  
13 performance of maintenance by licensees, including  
14 systematic assessment of licensee performance and  
15 NUREG 1212 and the status of maintenance in the U.S.  
16 power industry.

17 The policy statement announced that the  
18 Commission's rulemaking and that the policy statement  
19 itself were being issued to provide guidance to the  
20 industry while the rulemaking was proceeding.

21 In the staff requirements memorandum dated  
22 February 25th, 1988, which approved the final policy  
23 statement for publication, the Commission also  
24 directed the staff to proceed with preparation of a  
25 proposed rule and to consult in some open fashion with

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1 interested persons, including representatives of the  
2 regulated industry, as Vic suggested this be  
3 accomplished by holding public workshops.

4 The staff scheduled a public workshop for  
5 July--11th and--12th--of 1988. Subsequently in a  
6 memorandum from the Secretary to the EDO dated June  
7 15th, 1988, the Commission directed the staff to  
8 indicate that among five rulemaking options to be  
9 discussed at the public workshop, one preferred by the  
10 Commission would be a rule that would require that  
11 licensees track certain defined maintenance  
12 performance indicators, which would measure the  
13 effectiveness of a broad range of maintenance  
14 activities.

15 At the public workshop, the Commission's  
16 preferred rulemaking option was discussed in the form  
17 of a general performance-based rule with those  
18 performance indicators to be included in a regulatory  
19 guide.

20 There were other rulemaking options that we  
21 considered as we struggled with this effort to  
22 determine what would be the best rule to achieve the  
23 Commission's desired goal.

24 An option two that we looked at was one in  
25 which a set of performance indicators would be listed

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1 in the rule itself.

2 Other options were considered which would  
3 have involved a general rule requiring development and  
4 implementation of a maintenance program, accompanied  
5 by a regulatory guide, which in one of those options  
6 would endorse an industry standard and in another  
7 option would contain NRC-developed criteria for  
8 maintenance programs.

9 An additional option that we considered at  
10 that time would have included detailed and  
11 prescriptive criteria for conducting maintenance  
12 embodied in the rule itself.

13 We have the public workshop. There was a  
14 session devoted to the viability of basing a rule  
15 primarily on monitoring the performance. The session  
16 was chaired by the AEOD staff responsible for  
17 developing and implementing the NRC performance  
18 indicator program. The subject, however, was also  
19 discussed at many of the other sessions in the  
20 workshops.

21 At that time considerable concern was  
22 expressed by the participants at these sessions about  
23 the wisdom of requiring the monitoring and reporting  
24 of a uniform set of maintenance performance  
25 indicators.

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1           However, at other sessions of the workshop,  
2           it became obvious that there were some very effective  
3           industry initiatives by certain utilities and industry  
4           groups, such as INPO, in developing and implementing  
5           ~~excellent and outstanding~~ maintenance programs.

6           As a result of these insights, the staff  
7           then concluded and proposed in SECY-88-277 that the  
8           rulemaking strategy should be to issue a proposed  
9           general rule requiring development and implementation  
10          of a maintenance program, but to request that the  
11          industry develop its own standard for the contents of  
12          such a program. The industry standard would be  
13          endorsed in a regulatory guide.

14          In making this decision to recommend this  
15          approach, the staff recognized it would be unwise to  
16          attempt to spell out detailed technical and  
17          prescriptive criteria in a rule such as the last  
18          option that we considered, that we wanted to follow  
19          the basic idea that we would take advantage of the  
20          knowledge and experience of the industry's best  
21          performers in developing maintenance standards and  
22          excellence in maintenance that could be adopted by  
23          some of the weaker performers.

24          However, such a standard developed by those  
25          who would have to implement it would be expected to be

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1 sufficiently flexible that it would not impose any  
2 undue difficulty on the recommendations.

3 Furthermore, in this same spirit, the staff  
4 proposed that comments be sought on the concept of a  
5 ~~third-party-certification~~ program for maintenance.  
6 The staff proposed to develop generic guidance for  
7 maintenance programs in the form of a regulatory guide  
8 as a backup in case the industry did not respond to  
9 the Commission's request to develop a standard.

10 The Commission approved this general  
11 approach to the rulemaking, and a proposed rule was  
12 published on November 28th, 1988. The expiration date  
13 of the public comment period was extended from January  
14 27th to February 27th at the request of a number of  
15 utilities and NUMARC, but a significant number of  
16 comments came in after that date.

17 By virtue of a team effort on the part of  
18 the staff's research and AEOD and OGC, a regulatory  
19 guide was developed. Public comments were analyzed.  
20 Regulatory analysis was completely revised. And a  
21 final rule was completed and transmitted to the  
22 Commission in SECY-89-143 on schedule. The industry  
23 had not offered to develop a standard.

24 However, during that period, I wanted to  
25 point out that AEOD was able to complete a significant

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1 report of performance indicators transmitted to the  
2 Commission in SECY-89-044 and NRR, as has been  
3 mentioned, completed a number of its maintenance team  
4 inspections. This kind of information from those two  
5 ~~offices was essential in our work to develop the rule~~  
6 and reg guide in its final form.

7 In the process, the staff developed proposed  
8 resolutions to some very difficult issues. Perhaps  
9 the most challenging was that of addressing  
10 maintenance of a broad range of types of equipment,  
11 including those in the balance of plant and those were  
12 varying degrees of safety significance, while at the  
13 same time allowing flexibility on the part of  
14 licensees to develop the details of his program to fit  
15 his own situation and circumstances.

16 I believe that an examination of the draft  
17 final rule and proposed regulatory guide would  
18 indicate that we have accomplished what we set out to  
19 do in that regard.

20 In addition, by keeping open the options in  
21 this final rule for development of an industry  
22 standard and a third party certification process, the  
23 rule would give the industry considerable latitude  
24 and, if they accepted, responsibility for determining  
25 the nature of the maintenance program they would

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1 implement.

2           Given this flexibility and the incentive to  
3 the industry to develop this standard, the rule would  
4 provide assurance to the Commission that an effective  
5 ~~and readily-enforceable~~ maintenance program would be  
6 in effect for all licensees within a specified time  
7 frame.

8           Staff has recommended, then, that the  
9 maintenance rule be published final and the reg guide  
10 be published for comment.

11           As I mentioned earlier, the development of  
12 the final rule and the proposed regulatory guide has  
13 been a team effort involving NRR, AEOD, OGC, and  
14 research. A number of individuals from those other  
15 offices have helped us put together this package, and  
16 I want to express my appreciation to all of them now  
17 for their outstanding efforts.

18           Now let me turn this over to Moni Dey, who  
19 will continue with the presentation.

20           CHAIRMAN ZECH: Thank you very much.

21           You may proceed.

22           MR. DEY: Slide 3 is the first of a series  
23 of slides on public comments. First, Slide 3, I would  
24 like to provide some quick statistics and come to the  
25 specific comments later. Eighty-eight comments were

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1 received. Thirty-six of these were received on time  
2 prior to the close of the comment period, which was  
3 February 27th of this year.

4 The SECY paper, 89-143, which the staff  
5 transmitted to you, includes analysis of and response  
6 to comments received prior to the close of the comment  
7 period on February 27th.

8 A number of comments were received after  
9 that. We have reviewed these comments, and there  
10 haven't been any new substantive comments. Comments  
11 have been received from NUMARC and all the utilities  
12 individually. A number of second letters have come in  
13 from utilities also.

14 The next slide, 4, provides a quick summary  
15 of those for and against the rule. Seven commenters  
16 were for the rule, including two states and public  
17 interest groups.

18 NUMARC and all the utilities were against  
19 the rule, and they provided individual letters. As I  
20 mentioned, a number of second letters were received  
21 from utilities, and that's reflected in the Number 52  
22 on the slide.

23 The next slide, 5, is a discussion of the  
24 public comments received. What I would like to do  
25 here is just provide the public comments. And as we

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1 go through the presentation, we will provide our  
2 responses at the appropriate places.

3 The seven commenters, including two states,  
4 supported the rule. The comments that we provided on  
5 ~~this slide are mainly from the industry and the ones~~  
6 addressed in coming up with the final rule.

7 The major concern comment from industry  
8 against the rule was on the scope and the associated  
9 administrative burden and cost. The comments on the  
10 scope ranged from some saying that NRC has no  
11 authority in regulating the BOP to others saying that  
12 maintenance of BOP would detract from maintenance of  
13 safety-related structure systems and complements and  
14 that the administrative controls for maintenance of  
15 BOP would be costly.

16 And following this trend apart, the  
17 commenters indicated that this would have a negative  
18 impact and divert industry resources and, therefore,  
19 there's no demonstration that the rule would actually  
20 increase safety.

21 Now, the industry also stated that they have  
22 been improving and that improvement programs are in  
23 place.

24 And the next slide, 6, is a continuation of  
25 the public comments received. The commenters

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1 suggested that the NRC should concentrate on the few  
2 poor performers that exist today, that the  
3 justification of promulgating the rule on adequate  
4 protection is not what's questioned and stated that it  
5 was not justified.

6 A number of comments were received on the  
7 cost benefit analysis and the regulatory analysis.  
8 The data we provided in the draft regulatory analysis  
9 was questioned and, quote, "ultimate" data provided.

10 And, finally, as Bill mentioned, the notice  
11 of proposed rulemaking solicited volunteers for  
12 development of an industry standard. However, there  
13 was no commitment received.

14 Some industry commenters did suggest,  
15 though, that if a rule and standard is necessary, that  
16 they would participate, that industry should take the  
17 lead and the schedule, as proposed, was extremely  
18 tight and would make it difficult for them to  
19 participate and, finally, that NRC and industry  
20 shouldn't continue on parallel paths.

21 The next slide, 7, we provide a discussion  
22 of our objectives in developing the rule and  
23 regulatory guide. Our basic objective is to define a  
24 basic maintenance standard, which would include the  
25 scope of activities that a maintenance program should

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1 include and also the structure systems and components  
2 that should be covered.

3 The basic maintenance standard contains the  
4 essential ingredients of a systems performance-  
5 oriented approach. Our intent is to build upon  
6 existing programs.

7 We don't want to start from scratch or  
8 create new documentation. It would be a graded  
9 approach to maintenance, depending on significance to  
10 safety and, we emphasize, implementation.

11 On Slide 8 --

12 COMMISSIONER ROBERTS: Before you leave  
13 Slide 7, the second two items, the operative phrase,  
14 "where necessary." We heard a presentation on May the  
15 2nd of this year on the maintenance team inspection.  
16 And you're talking about the program, not  
17 implementation.

18 And we were told there are no utilities with  
19 a poor program. Implementation, a little different.  
20 I question the "where necessary." You've already told  
21 us, the staff has told us, there are no unsatisfactory  
22 programs.

23 Also, on the third item, "facilitate NRC's  
24 taking enforcement action, where necessary," during  
25 the Commission meeting, May the 2nd, on the

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1 maintenance team inspection, we were told the staff  
2 could take enforcement action when they saw a safety  
3 concern. And you have done so.

4 I question the "where necessary" in both of  
5 these two items. Thank you.

6 MR. MORRIS: On those two issues, the  
7 regulatory guide has a set of program elements, 17  
8 elements, that are provided that would be there for  
9 the benefit of one of the utilities or licensees who,  
10 through the process of his self-examination process,  
11 would determine that he might need to upgrade in some  
12 area.

13 He might do this on the basis of a feedback  
14 from the examination of the failure modes of equipment  
15 with NPRDS type data that he would be collecting.

16 He might see that there would be a need to  
17 some improvement in his program. And it would be at  
18 his option to make that upgrade if he thought that it  
19 was necessary.

20 So we do believe that there may be places  
21 where members of the licensees would find that they  
22 wanted to improve their programs, and this would be  
23 the process that would be put in place to do that.

24 The second issue, we have noted that this  
25 would facilitate NRC taking enforcement action. We do

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1 not claim here that we are now incapable of taking a  
2 significant enforcement action, if needed, but this  
3 would clarify, more clearly stating what the  
4 requirements are for balancing plant, how you would go  
5 about doing that.

6 So the key word is "facilitate," rather than  
7 anything else.

8 COMMISSIONER ROBERTS: Just an observation.  
9 I'm sure there are those who would disagree with this,  
10 but in my over eight years here, I have not seen the  
11 need for the staff to have any more ability to  
12 facilitate enforcement.

13 MR. STELLO: I think I agree with that. If  
14 we find a problem, we usually could find a way to --

15 COMMISSIONER ROBERTS: You bet you do. And  
16 that's what we're all supposed to do.

17 MR. STELLO: And I think we can.

18 With respect to the first item you asked  
19 about, maintenance programs, I did say I think, as you  
20 have indicated, that what we looked at, most of the  
21 programs weren't bad. Some could have been improved  
22 some.

23 COMMISSIONER ROBERTS: Can't we all improve?

24 MR. STELLO: Absolutely. And what's the  
25 whole idea. But we've only got about half, about

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1 halfway through.

2 COMMISSIONER ROBERTS: Let's not bog down on  
3 this.

4 MR. STELLO: And I just think the important  
5 point of the objectives of the rule is yet to come.

6 COMMISSIONER ROGERS: Excuse me. If I could  
7 just --

8 MR. STELLO: Go ahead.

9 COMMISSIONER ROGERS: It seems to me we may  
10 be using the word "program" a couple of different ways  
11 here, and I think it might be well to be very clear on  
12 what we mean by "program."

13 My understanding of the question that was  
14 asked some time ago that Commissioner Roberts referred  
15 to about, are there good programs or are there any  
16 poor programs, those were really plans.

17 MR. STELLO: Plans, papers.

18 COMMISSIONER ROGERS: And it seems to me a  
19 program is a plan and execution, both components, and  
20 that it's important that we distinguish between those  
21 at the outset, that a program is not a plan. It's a  
22 plan plus implementation.

23 And if the answer to the question is: Are  
24 there any programs out there that are less than  
25 satisfactory, based on that definition of "program,"

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1       namely plan plus implementation, I'd like your answer  
2       to it.

3               MR. STELLO:   There are some that are clearly  
4       in need of significant improvement.   What they use the  
5       program to include both plan and implementation.

6               COMMISSIONER ROGERS:   So what's out there  
7       now that we find satisfactory are plans?

8               MR. STELLO:   Are basically the plans.   And  
9       even some of those could use a little improvement,  
10      too.   But of those that we have seen, there were not  
11      any that we were really upset with, but we respect  
12      implementation --

13              COMMISSIONER ROGERS:   Well, I think we  
14      should be clear on what we mean when we say "program"  
15      here, that it's important.

16              MR. JORDAN:   I think in the context of the  
17      rule and the reg guide, the program that we're talking  
18      about has the element of looking at the implementation  
19      in that program and the feedback mechanism to further  
20      improvement.   And I think it would include both.

21              MR. STELLO:   I understood Commissioner  
22      Roberts' question, though, to really basically mean  
23      the paper part.

24              COMMISSIONER ROBERTS:   I'm using your  
25      presentation of May the 2nd.

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1 MR. STELLO: That was the paper part of the  
2 plan.

3 COMMISSIONER ROBERTS: And there are none  
4 that are poor in the plan. In implementation, you say  
5 4.8 percent. Thank you.

6 CHAIRMAN ZECH: All right. Let's proceed.

7 MR. DEY: Slide 8 is a continuation of our  
8 discussion of the objectives of the rule and reg  
9 guide. What we intend to do is define a basic  
10 maintenance standard, but provide the flexibility and  
11 the responsibility to licensees to conduct the  
12 detailed maintenance practices, as appropriate.

13 What we've done is provided a balance  
14 between what we feel is an essential requirement in  
15 guidance and what is most beneficial to be determined  
16 on a plant-specific basis. And we feel that this  
17 approach should not divert resources from what's  
18 actually being done at the plants at the present.

19 For detailed good practices, maintenance  
20 practices, there are a number of guides already  
21 available published by the INPO, maintenance  
22 guidelines, IEEE and BPRI. And these could be  
23 utilized for the detailed practices.

24 The second bullet emphasizes that the rule-  
25 making provides an option for industry participation

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1 through a third party certification process, along  
2 with the development of a maintenance standard. We  
3 feel that it's appropriate and it's the opportunity  
4 for industry to take the lead and continue its  
5 initiatives in this option.

6 We feel that rulemaking will provide  
7 incentive to industry to develop basic and  
8 supplementary standards. The staff considers these  
9 standards are essential.

10 The next slide, 9, is a summary of the final  
11 rule. As I mentioned, the basic approach is non-  
12 prescriptive. It's performance-oriented and  
13 emphasizes implementation and not paper and  
14 documentation.

15 The rule provides the essential requirement  
16 for a standard. Maintenance is a living process.  
17 It's conducted by monitoring the effectiveness of the  
18 program, assessment, and feedback. These are critical  
19 and essential elements that would be required.

20 An effective program can only be achieved  
21 through operational experience by understanding the  
22 underlying causes of anomalies and failures and by  
23 trending equipment history, providing strong  
24 engineering support to this, and an integrated  
25 program. The activities listed in the final rule

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1       should be integrated in the maintenance program.

2               Slide 10, as a result of our analysis of  
3       public comments, we did make a number of changes to  
4       the proposed rule. The first was on the scope. A  
5       ~~number of~~ commenters, as I mentioned earlier,  
6       indicated concern on the scope, and we have explicitly  
7       defined our intent in that area.

8               Secondly, as previously mentioned, there are  
9       now two options in the rule itself for implementation  
10      of the rule. The first one was in the proposed rule,  
11      that individual licensees could certify their own  
12      programs through use of a reg guide.

13              But we've added the second option in the  
14      rule that NRC-approved third party certification, in  
15      conjunction with industry-developed maintenance  
16      standards, is also available to licensees for  
17      implementing the rule. And this provides flexibility  
18      for industry to continue its initiatives and not  
19      detract from what they're currently doing.

20              On the next slide, 11, is a detailed  
21      discussion of our modification to the scope of the  
22      rule. As I mentioned, the major comment was on the  
23      maintenance requirements for the BOP, would add  
24      administrative controls that would be costly.

25              However, we feel, staff feels, that

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1 maintenance should be conducted commensurate with  
2 safety significance and, therefore, the wording of the  
3 scope of the rule has been altered to clarify this  
4 intent. And this rulemaking approach should not  
5 divert industry-resources.

6 The scope, as it reads now in the rule, is  
7 that it would include structure systems and components  
8 described in documents required by 10 CFR 50.34; for  
9 example, the final safety analysis report, and whose  
10 failure could significantly affect safety or security.

11 This certainly includes equipment in the  
12 BOP, and it's already part of the licensing basis of  
13 plants. 10 CFR 50.34 requires licensees to include  
14 plants for conduct of maintenance of structure systems  
15 and components, looking at the plant as a whole.

16 I would like to emphasize, on the graded  
17 approach, that maintenance should be conducted  
18 commensurate with importance to safety and focus on  
19 important systems.

20 Next slide, 12, provides some dates for the  
21 implementation of our proposed final rule. As is  
22 indicated, there's flexibility for two options:  
23 first, utilizing the regulatory guide and individual  
24 certification from licensees; and the second option,  
25 use of an industry standard and third party

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1 certification process, which could be utilized for  
2 initial certification or later on if the industry so  
3 chose.

4 The rule would provide certification and  
5 ~~assurance to the Commission~~ that by these end dates,  
6 that effective programs would be in place in that time  
7 period.

8 Slide 13 is a discussion on the draft  
9 regulatory guide. I would like to go through it  
10 quickly since it's a continuation of our objectives  
11 and thinking of the rule.

12 The regulatory guide is in draft form. The  
13 staff believes it's ready for public comment.  
14 However, it will improve through the public comment  
15 process and through peer review.

16 Stress that the reg guide provides guidance  
17 on the essential elements, and key is learning from  
18 operational experience, is the key to success.

19 Slide 14, continuation of the draft  
20 regulatory guide, allows flexibility in the use of  
21 existing industry guides, and we don't feel a  
22 commitment to detailed conduct of practice is  
23 necessary.

24 And, therefore, we believe that this should  
25 have little or no impact on licensees with existing

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1 good programs and, therefore, not detract or divert  
2 resources.

3 Slide 15 is a schematic of the draft  
4 regulatory guide. Briefly, it takes maintenance as a  
5 living process--that--should be integrated and  
6 systematic, where overall maintenance strategy is  
7 defined, strategy goals and objectives, maintenance  
8 conducted commensurate with this, but, most  
9 importantly, that the program, maintenance program,  
10 effectiveness is monitored, experience is monitored,  
11 assessed, and corrective actions are executed, the  
12 program adjusted, including trending, root cost  
13 analysis, engineering support, which are critical  
14 elements.

15 The regulatory guide provides the basic  
16 guidance and criteria for these following steps. And  
17 that's all of the discussion we have on the regulatory  
18 guide.

19 And Tom King will continue the briefing.

20 COMMISSIONER ROGERS: What's the  
21 significance of the dotted line to the definition of  
22 "assessment"?

23 MR. DEY: We feel that the dotted line is a  
24 path which is not as often gone through as the other  
25 two paths. Overall maintenance strategy should not

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1 have to change that often. However, through plants'  
2 life and age, it may.

3 CHAIRMAN ZECH: All right. Let's proceed.

4 MR. KING: If I may have Slide 16, please,  
5 I'm going to talk about the supporting basis for the  
6 rule and the reg guide and then finish with up with  
7 the conclusion and recommendation.

8 Because of the approach we have taken in the  
9 development of the rule and reg guide; that is, one to  
10 allow flexibility for a licensee to develop this  
11 program and one that stresses self-assessment and  
12 improvement, we have put together the supporting  
13 documentation on the rule and reg guide along the  
14 lines of enhanced safety.

15 You will recall the proposed rulemaking  
16 package had a question in it regarding should this  
17 rule and reg guide be justified on adequate  
18 protection.

19 We have received quite a bit of comment on  
20 that, all negative. And we feel now that enhanced  
21 safety is the proper approach for justifying this rule  
22 and reg guide.

23 We feel that enhanced safety can be  
24 addressed both qualitatively and through quantitative  
25 analysis or what we call "regulatory impact analysis."

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1 I'm going to talk about both of these.

2 On the next slide, 17, qualitative basis, we  
3 found there's universal agreement, everyone that  
4 worked on this rule within the staff, industry, ACRS,  
5 that maintenance has a direct impact on plant safety  
6 by affecting both reliability of safety systems and  
7 the frequency of challenge to new safety systems and  
8 to operators. Therefore, we believe that maintenance  
9 is an area appropriate for NRC to consider regulation.

10 Continuing on, on Slide 18, also found  
11 through the maintenance team inspection results to-  
12 date that there is still a variation across the  
13 industry in maintenance program, particularly the  
14 implementation, and the industry has not yet achieved  
15 a uniform good performance in the maintenance area.

16 Although there are industry initiatives  
17 underway to improve maintenance, it is not clear as to  
18 the schedule or pace for improvement. Therefore, we  
19 believe that supporting this rule, it would also  
20 facilitate the Commission's ability to take action to  
21 achieve improvement, by both establishing general  
22 requirements and by setting a schedule for  
23 implementation an achievement of an effective means  
24 for it.

25 Continuing on, Page 19, we believe the rule

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1 will stabilize and better define maintenance  
2 requirements for both licensees and for the staff.  
3 That will help assure good maintenance is achieved and  
4 sustained over the life of the plant.

5 ~~I think the~~ "sustained" should be emphasized  
6 because we're assuming, on the average, there's 30-  
7 year life left for the plants that are operating  
8 today.

9 The rule and the regulatory guide will also  
10 help ensure the effects of aging are considered in  
11 maintenance programs. And we believe it will  
12 facilitate life-extension decisions by having a good  
13 program in place to monitor plant condition and  
14 maintaining appropriate records to document that plant  
15 condition.

16 Regarding the regulatory impact analysis, or  
17 the quantitative support for the rule, as Moni  
18 mentioned, we received many comments on the proposed  
19 regulatory analysis that was published back in  
20 November.

21 Major comments were that there was no  
22 standard which could be used as a measure to judge  
23 where improvements were needed when we estimated the  
24 cost and that the data we used for assessing the plant  
25 performance, changing risk, as well as where industry

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1 maintenance programs needed to improve was outdated.  
2 And we also received a number of specific comments on  
3 the regulatory impact analysis.

4 We revised the regulatory impact analysis to  
5 ~~reflect these~~ major comments and many of the more  
6 detailed comments. And we believe the regulatory  
7 impact analysis now adequately addresses the major  
8 comments received and incorporates appropriately many  
9 of the other comments. And I will discuss these a  
10 little further on in the presentation.

11 The regulatory impact analysis shows an  
12 overall positive net benefit of the rule when it  
13 considers the reduction in public risk, the cost to  
14 the industry to implement the rule, and the industry  
15 cost savings we've estimated as a result of the rule.

16 Costs to NRC were estimated to be small and  
17 that they basically can be ignored in the analysis.

18 COMMISSIONER CURTISS: On that point, before  
19 you proceed, in the draft regulatory analysis, the  
20 staff made the following statement, "A substantial  
21 share of the risk reduction estimated under this rule  
22 will be gained under the status quo even without a  
23 maintenance rule."

24 Is the reduction in risk here attributable  
25 to what would be required under the rule or is it a

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1 reduction that would come about given the progress  
2 that we've seen to-date already on maintenance?

3 MR. KING: The numerical values show up on  
4 Slide 22. Those values take into account the fact  
5 ~~that we have given credit for industry initiatives,~~  
6 which we'll take you a certain distance down the path  
7 in improving maintenance. And I will talk about the  
8 assumptions we use and the reductions, or the credit,  
9 that we have for that.

10 Let me move on to Slide 21. Before I get  
11 into the quantitative results, I just want to  
12 emphasize that while the regulatory impact analysis  
13 was not used as the sole basis for the rule, we  
14 believe that it does determine that a rule can be  
15 implemented in a fashion that enhances safety in a  
16 cost-effective manner. And I would come back to this  
17 point later also, using some numbers for illustration.

18 I next would like to talk about the results  
19 from the regulatory impact analysis, which are shown  
20 on Page 22. I'll spend a few minutes talking about  
21 these numbers, where they came from, some of the major  
22 assumptions we've made.

23 I'll also talk about the ranges. You'll see  
24 a column here called "Ranges." Those numbers were not  
25 in the SECY-89-143, but we did commit in that SECY to

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1 talk about those at today's briefing, and I will talk  
2 about those as well.

3 This is a way of introduction. In arriving  
4 at all of the numbers that you see on this slide, we  
5 used the latest results from the maintenance team  
6 inspections to: one, estimate the number of plants  
7 that were rated as either having good, satisfactory,  
8 or poor maintenance programs; and to identify those  
9 areas that needed improvement. Particularly, that was  
10 useful in trying to estimate where the costs would  
11 come from to implement the rule.

12 I would like to note that if you take the  
13 maintenance team inspection results, they project a  
14 number approximately of six poor plants, plants that  
15 would be rated with poor maintenance programs. And  
16 that's consistent with a number NUMARC gave us in  
17 commenting on this rule of six to eight plants that  
18 they considered having poor maintenance programs.

19 All right. Let me start by talking about  
20 the risk reduction numbers. We estimated our based  
21 case or best estimate at 50,000 person REM reduction  
22 in risk as a result of this rule.

23 This was based upon using actual 1988 plant  
24 data for unplanned scrams and safety system failures  
25 to estimate the improvement possible with plants with

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1 average or below average scram safety system failure  
2 rates, or to improve to that of the top 25 percent  
3 plants.

4 These improvements were then substituted  
5 into probabilistic risk assessment and changes in risk  
6 calculated. I'd like to note that we did not assume  
7 any change in risk as a result of this rule for the  
8 plants that were characterized as having good  
9 maintenance programs.

10 In using the probabilistic risk assessment,  
11 we chose a baseline risk value consistent with the  
12 number that NUMARC provided in their comments on the  
13 proposed regulatory impact analysis.

14 We then made adjustments to those risk  
15 values to account for two things: one, the fact that  
16 not all improvement in risk can be attributed to  
17 maintenance.

18 We used the NUMARC suggested value that only  
19 50 percent of the improvement in risk can be  
20 attributed to maintenance and we gave credit for the  
21 industry initiatives.

22 If they continue, they will achieve  
23 improvement in maintenance and, accordingly, some  
24 reduction in risk. And we gave credit, another 50  
25 percent reduction in our estimated value, to give

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1 credit for the industry initiatives.

2 This resulted in our best estimate risk  
3 value of 50,000 person REMs. To estimate the range in  
4 risk of 0 to 100, we looked at the two extremes,  
5 mainly ~~that the~~ rule causes no improvement in risk,  
6 which equates to 0 and, conversely, that the industry  
7 initiatives cause no further improvement, which  
8 equates to the 100,000 person REM.

9 Turning to the costs to implement the rule,  
10 we estimated a base case of \$658 million. We  
11 considered all 110 plants and discounted costs over 30  
12 years.

13 We followed the structure of the draft  
14 regulatory guide in defining the cost elements. We  
15 used the maintenance tomb inspection results to  
16 identify the areas needing improvement, as well as the  
17 number of plants needing improvement.

18 This resulted in the poor plants having a  
19 higher cost to implement the rule than the  
20 satisfactory, and the satisfactory having a higher  
21 cost than the good plants.

22 We did assume some costs for the good plants  
23 as well, primarily for initial implementation and then  
24 to maintain this feedback corrective action steps that  
25 the reg guide calls for, that the rule calls for.

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1           We tried to use actual data as much as  
2 possible in estimating the costs to implement the  
3 rule. And, similarly, to the addressment made in the  
4 risk calculation, we reduced many of the costs by 50  
5 percent to account for the fact that some of the costs  
6 will be realized as part of implementing the industry  
7 initiatives.

8           To estimate the range in cost, we took two  
9 extremes using data supplied by NUMARC. For the lower  
10 REM cost, we used the results of a recent March 29,  
11 '89 NUMARC survey, which was directed toward updating  
12 the information that went into putting together NUREG  
13 1212.

14          Based upon this survey, NUMARC indicated  
15 that many of the desired improvements in maintenance  
16 were already in place. Therefore, we adjusted our  
17 cost estimates accordingly to remove the costs for  
18 these items that resulted in the lower range cost  
19 number. The upper end cost number was the number  
20 supplied by NUMARC in their comments on the proposed  
21 rule.

22          Cost savings to industry, we assumed that  
23 improvement in maintenance on improved plant  
24 performance would result in reduced down time. We  
25 looked at 1988 capacity factor data to estimate the

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1 improvement possible in going from the poor to the  
2 satisfactory plants to a good plant, plant with a good  
3 maintenance program.

4 We assumed for the best estimate or base  
5 ~~case that the improvement in capacity factor for the~~  
6 four plants was 16 percent and for the satisfactory  
7 plants 1 percent. Again, we gave credit for industry  
8 initiative to 50 percent, and we ended up with a cost  
9 saving to industry of \$1.3 billion.

10 To estimate the range in cost savings, we  
11 assumed for the lower end that no change in down time  
12 or capacity factor would result from this rule.  
13 Therefore, there would be no cost savings.

14 For the high end, we assumed all plants  
15 achieved at capacity factor, each to the upper 25  
16 percent, but gave full credit for industry initiatives  
17 to achieve INPO goals for availability. What this all  
18 boils down to is the rule gets credit for a seven  
19 percent increase in plant capacity factor for the  
20 upper end value.

21 This leads me to the nest slide, Page 23,  
22 which numerically illustrates the sensitivity of the  
23 results to any improvement in capacity factor or,  
24 stating it another way, that this rule would result in  
25 -- just an improvement of one-half of one percent in

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1 capacity factor, it would be cost beneficial to  
2 implement this rule, using the staff's best estimate,  
3 base case cost values.

4 The sensitivity of the results to  
5 improvement in capacity factor also indicates our view  
6 that in many cases, it would be cost beneficial for a  
7 licensee to shoot for and attain a level of  
8 performance in maintenance consistent with the top  
9 performers in the industry.

10 Finally, on the last page, this leads to our  
11 conclusion that, based on the potential of the rule to  
12 affect greater improvement in maintenance and to  
13 prompt industry participation in the development of a  
14 maintenance standard, we recommend that when the  
15 Commission proceed with promulgation of the final rule  
16 and publication of the draft regulatory guide for  
17 comment, that the staff continue development of the  
18 regulatory guide and that industry participation  
19 strictly to develop a standard in third party  
20 certification process continue to be sought.

21 This completes the presentation.

22 CHAIRMAN ZECH: All right. Thank you very  
23 much.

24 Questions, comments by my fellow  
25 Commissioners? Commissioner Roberts?

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1           COMMISSIONER ROBERTS: I have no questions,  
2 just a comment. I think most of the things NRC staff  
3 undertakes, they do quite well, and I think there are  
4 a number of things that the staff undertakes that they  
5 do in outstanding fashion.

6           But, in my observation, assigning dollar  
7 values to claims, such as risk reduction of cost  
8 implement and cost savings, we are imminently  
9 unqualified to do. And I am quite skeptical of these  
10 numbers on Pages 22 and 23 of your presentation.

11           That's all. Thank you.

12           CHAIRMAN ZECH: All right. Commissioner  
13 Carr?

14           COMMISSIONER CARR: Well, I've got some  
15 comments on it. I, too, am convinced that a  
16 maintenance rule is needed, but I'm not any more  
17 convinced that we know how to write a good one than we  
18 did when we started.

19           The rule looks to me a lot like our policy  
20 statement, which is about where we were when we  
21 started. I'm uneasy about the reg guide because I  
22 think it needs a lot of improvement. As I say,  
23 though, I think a rule is needed, and I think we ought  
24 to proceed in that direction.

25           I'm concerned. My personal opinion is you

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1 water down the balance of plant when you've corrected  
2 it in accordance with the industry's request. I think  
3 I would rather you hadn't have done that.

4 It looks to me like you've attempted a weak  
5 definition--of what's important--to safety and haven't  
6 really come up with anything. I don't know who's  
7 going to decide what that significant to safety  
8 section is, and that worries me.

9 If we're going to leave that to the resident  
10 inspectors, we're going to have a compendium in there,  
11 and there's nothing in there that defines it any  
12 further. And if each plant defines their own, I'm not  
13 sure I like that piece of the action.

14 I guess I like least of all the letter  
15 campaign that was generated by industry and NUMARC.  
16 They might as well have sent me a form letter. I got  
17 multitudiness from people I know don't know as much  
18 about maintenance as I do. And that didn't do me any  
19 good from a morale standpoint.

20 I would rather they would have cooperated  
21 instead of deciding to stonewall me. I don't like  
22 being stonewalled, and I almost just voted for a rule  
23 of good or bad. And if they stonewall me for the next  
24 year, they might get a bad rule.

25 I think the maintenance inspections have

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1       been good. I think we're learning a lot from them. I  
2       think they're doing a lot of good for the industry. I  
3       think we should continue those.

4               And when we get through, I think we'll know  
5       more about what we want to write in that rule and  
6       they'll know more about what we're looking at.

7               I think we can write a good rule. I don't  
8       think we have, and I don't know how long it will be  
9       until we can, but I, too, think we need one.

10              CHAIRMAN ZECH: Thank you.

11              Commissioner Rogers?

12              COMMISSIONER ROGERS: Well, a couple of  
13       questions, maybe some observations. In the AEOD  
14       special study report "Maintenance Problems in Nuclear  
15       Power Plants" in May of 1989, you looked at the  
16       quality of plant maintenance and various modes of  
17       common failures due to poor maintenance practices.

18              Have any comparable analyses of plant  
19       maintenance efficacy been undertaken and published by  
20       the industry, such as INPO, NUMARC, or EPRI?

21              MR. JORDAN: Commissioner Rogers, individual  
22       issues have been published, like on motor-operated  
23       valves or on service water systems, by industry, but  
24       no compendium in the fashion that I think you're  
25       asking, to our knowledge.

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1 COMMISSIONER ROGERS: Well, has industry  
2 taken any exception to the data presented in the  
3 findings or the conclusions of the AEOD special study?

4 MR. JORDAN: Not to my knowledge, no, sir.

5 ~~COMMISSIONER ROGERS:~~ What is the staff's  
6 view with regard to the consequences of issuing a  
7 policy statement now? Would, in your view, that  
8 represent the end to rulemaking on this subject?

9 MR. STELLO: Well, no, because the  
10 Commission can, any time it decides, issues a rule.  
11 So it wouldn't necessarily -- it should not signal to  
12 anyone that it's an end.

13 However, I think it would have the side  
14 effect of sort of sensing the heat's off in this area,  
15 maybe easing up a little bit. And that has me  
16 concerned.

17 I agree completely with Commissioner Carr.  
18 I don't think we are really expert at writing such a  
19 rule. That expertise really resides in the industry.  
20 I don't know how we can get their attention and say,  
21 "Sit down. Do a good job. Put together a third party  
22 system. Do it right."

23 Saying it over and over again maybe isn't  
24 going to make it happen, but perhaps having a rule,  
25 maybe a bad one, having that hanging over their head

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1 may make it right and it will go to the third party  
2 certification and we'll get it done.

3 I think if we give policy, it will postpone  
4 that time. I think it will just put it off.

5 COMMISSIONER ROGERS:-- Has industry commented  
6 on the economic analysis contained in the proposed  
7 rule? -- Mr. Roberts had some skepticism about it. I  
8 don't have any basis for judging the quality of it one  
9 way or the other, but my understanding is that you  
10 have looked at this again, haven't you, on the basis  
11 of comments?

12 MR. STELLO: The numbers really are not that  
13 mysterious in terms of what benefit do you get out of  
14 an increased capacity factor of "X" percent? We've  
15 done an awful lot of studies on --

16 COMMISSIONER ROGERS: Normally, it has to do  
17 with the cost.

18 MR. STELLO: -- the replacement power costs,  
19 and they range anywhere from -- somebody help my  
20 memory -- a quarter of a million to three-quarters of  
21 a million dollars per day per plant as a range. Is  
22 that about right?

23 MR. MORRIS: I think it's about right,  
24 depending on location.

25 MR. STELLO: Depending on location, that

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1 would be. If you take 100 plants, you know, 1 percent  
2 change is equivalent to 1 plant.

3 COMMISSIONER ROBERTS: I raised the issue.  
4 I have less problem with the accuracy of that number  
5 ~~than the numbers on Page 22.~~ Certainly, if you can  
6 posit we're going to increase capacity factor by "X"  
7 percent, I think you can come up with a reasonably  
8 accurate number for that. I question the numbers on  
9 Page 22.

10 MR. STELLO: Okay. But I think the real  
11 number that drives the system is the end result of do  
12 you get any increased availability of capacity as a  
13 result of improved maintenance? I am convinced beyond  
14 any doubt you will.

15 And you can see that the number is driven  
16 basically by that fundamental conclusion. If I do a  
17 good job at maintenance in those plants that have done  
18 a good job at maintenance, in fact, operate their  
19 plant at much higher availability capacity than  
20 others.

21 And that's an inevitable conclusion. And  
22 that number itself drives the cost benefit.

23 COMMISSIONER ROGERS: I think that's very  
24 clear. There shouldn't be any argument on that one.

25 You've been looking at maintenance

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1 inspections and with a view toward plant life  
2 extension possibilities. What is your view with  
3 respect to the adequacy of the maintenance equipment  
4 history data as to whether it's in sufficient detail  
5 ~~that reliable trending can be made to support a plant~~  
6 life extension proposal right now?

7 MR. STELLO: I think we have enough  
8 information where we could start to answer, but I  
9 don't think we've done that yet. I think we ought to  
10 probably put off definitive about an answer until  
11 we've actually done it. We haven't.

12 A good maintenance program will clearly go a  
13 long way in helping it because it will, almost  
14 inevitably, include the very answer to that question  
15 as part of the implementation and program.

16 If a component wears out, you start to track  
17 it. You know it. You know when it wears out, and you  
18 know when it needs to be replaced.

19 COMMISSIONER ROGERS: Well, I believe we  
20 need a rule, but I also am not sure that we're all  
21 together on what we think a rule ought to look like  
22 and what it ought to do. And we're having a great  
23 deal of difficulty with that.

24 I myself feel very strongly that a rule  
25 should be a non-prescriptive rule and that the

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1 ultimate responsibility has to be with the licensees  
2 for how they carry out a maintenance program, but that  
3 it should perform in a way which is satisfactory to  
4 us.

5 In other words, I think we should be  
6 measuring outcomes and not process, a point that was  
7 made at the workshop, I think, at least that we  
8 shouldn't be measuring process, at any rate.

9 However, I must say that I agree with  
10 Commissioner Carr that the industry's reaction here  
11 has been less than exemplary. I've read the comments  
12 in the proposed rule. And I must say that I have to  
13 shake my head at many of them for the lack of  
14 substance to them and that issues, important issues,  
15 are reduced to absurdities and then dismissed.

16 I'm very disappointed to see how little  
17 assistance that we've gotten in trying to take a step  
18 which, in my view, is a very necessary one, namely to  
19 be able to assure ourselves that maintenance is  
20 adequate.

21 And I don't think we've gotten any help with  
22 this at all, and I hope that if we in the months  
23 ahead, to whatever we do, that we will not be -- our  
24 actions will not be interpreted as a lack of forceful  
25 attention to the importance of maintenance.

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1           Now, it's certainly true that the smarts for  
2           doing this reside in the industry. I think we all  
3           agree on that, and we need help on it. But we also  
4           have a job to do for the American people here, and  
5           that is to watch very carefully and to be able to  
6           assure them that, in our opinion, plants are being  
7           maintained safely.

8           And I don't know that we're getting any help  
9           whatsoever in discharging our responsibility in that  
10          direction. And I must say I'm very disappointed.

11          CHAIRMAN ZECH: Commissioner Curtiss?

12          COMMISSIONER CURTISS: Well, I guess I'm  
13          puzzled about a number of aspects of this whole  
14          initiative, and I'm not even quite sure where to  
15          start. Let me just roam through my thoughts that I've  
16          written down in this briefing.

17          I'll just go out to a point that Mr. Stello  
18          made at the outset. I gather the undertone that  
19          exists here is a concern that if the Commission should  
20          back off the initiative in its present form -- in  
21          fact, you pretty much said this at the outset -- that  
22          the progress that we've seen to-date in the industry  
23          that's been documented as recently as the May report  
24          that Commission Rogers referred to in the maintenance  
25          team inspections, that progress will flag and that we

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1 won't see the kind of improvement, either in the  
2 development of plans, which I gather are coming along  
3 pretty well, or in the implementation of those plans,  
4 which may not be coming along quite as well as we  
5 would like.

6 I guess I'd like to ask two questions on  
7 that point. One, if you were able to wave a magic  
8 wand over the maintenance program today and to assure  
9 that the progress that we have seen to-date in the  
10 industry on maintenance, both plans and implementation  
11 of programs, were to continue at its current pace,  
12 would you recommend a maintenance rule if that were a  
13 predictable and certain outcome?

14 MR. STELLO: You tell me -- and I want to  
15 make sure that I understand your assumption -- that  
16 maintenance will continue to improve and all plants  
17 will do a good job, independent of whether we have a  
18 rule or not; therefore, would I still recommend a  
19 rule?

20 And the answer is obvious: No, I won't.

21 COMMISSIONER CARR: You already said if they  
22 were to continue to improve at the current rate of  
23 improvement, which you --

24 MR. STELLO: At that current base.

25 COMMISSIONER CARR: -- that they have

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1 improved over the last three years.

2 MR. STELLO: I said if it clearly continues  
3 to where they all get very good --

4 COMMISSIONER CARR: At that rate.

5 MR. STELLO: --- at that rate, I'd be happy.

6 COMMISSIONER CURTISS: We're not  
7 dissatisfied with the progress that the industry has  
8 made or the pace of the progress that they've made and  
9 the projections.

10 And I gather, with a few exceptions, you  
11 estimate that there are 6 bad plants, 81 satisfactory  
12 plants, 23 or 22 --

13 MR. STELLO: We haven't been to all of them.

14 COMMISSIONER CURTISS: -- excellent plants.

15 MR. STELLO: 25 or 26, something like that.

16 COMMISSIONER CURTISS: But if you were able  
17 to lock in the progress that is being made, that's the  
18 curious thing about the rule, that it's almost the  
19 threat of the rule.

20 We all agree that we don't know how to write  
21 a very good rule. I think the staff's done a good job  
22 trying to put together its best effort. And I, too,  
23 am disappointed that we haven't seen more progress  
24 from the industry, but I guess I'm almost on the fence  
25 on this question of whether we're likely to see the

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1 progress in the industry flag if the Commission takes  
2 note of, recognizes, and applauds the industry for the  
3 progress they've made and crosses its fingers and  
4 hopes that it will continue.

5 ----- What do you think is the basis for the  
6 conclusion that the industry will flag in its progress  
7 in the future if the Commission doesn't move forward?

8 MR. STELLO: Twenty-three years' worth of  
9 the AEC, NRC. It's been my experience that those  
10 things that we emphasize and regulate, we see the  
11 industry respond and they start to do a good job.

12 Those things that we take or let alone, they  
13 tend to let alone. It's just my experience, my  
14 observation that's the way the solution seems to work.

15 COMMISSIONER CURTISS: Although I guess it's  
16 not clear that we're just going to leave the issue  
17 alone, we do have the SALPs and the maintenance team  
18 inspections and the SSFIs, and we have a considerable  
19 effort in the maintenance area at this point.

20 And let me add to that, as the maintenance  
21 team inspections have shown, the shortcoming is really  
22 on the implementation side, which suggests, at least  
23 to me, that maybe there's an enforcement shortcoming.

24 Maybe what we need to do is recognize that  
25 the plans are pretty sound and, through the

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1 enforcement mechanism that we have, and, I take it, if  
2 used under Appendix B and elsewhere, the SALP process,  
3 the maintenance team inspections, do what needs to be  
4 done to bring about improvement on the implementation  
5 -- side-of-maintenance.

6 MR. STELLO: If we don't have a rule, that's  
7 the only course we can follow and surely one we will.

8 COMMISSIONER CARR: Have we detected any  
9 maintenance programs that have gone downhill and they  
10 were better than they are now?

11 MR. STELLO: Well, there are some that I'd  
12 say over the years, I can't get ecstatic that they've  
13 gotten very good or any better, like Turkey Point.

14 COMMISSIONER CARR: Yes, but I think --

15 MR. STELLO: I think I would -- from recent  
16 experience --

17 COMMISSIONER CARR: There wasn't much room  
18 for them to go.

19 MR. STELLO: Well, they stayed pretty much  
20 the same, not improved.

21 Calvert Cliffs would be probably an example  
22 of a plant where it's a little frustrating of recent  
23 experience overall, including maintenance.

24 COMMISSIONER CARR: From my personal  
25 feeling, I think that --

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1 MR. STELLO: If you really had some time, I  
2 probably could come up with others, and I think maybe  
3 there has been a slide.

4 COMMISSIONER CARR: My personal feeling on  
5 whether- they'll get-better or-not if we don't do  
6 anything is they will finally realize that's where the  
7 money is.

8 If they maintain their plants and stay on  
9 the line, they make more money than they would, but I  
10 don't think that they will do it as rapidly as they  
11 would if we urged them on.

12 MR. STELLO: That's been so obvious for so  
13 long that that's where the money is to really run the  
14 plant well, and you get your money back, that we think  
15 that that would have been enough to have caused this  
16 turnaround by itself over the last 10 or 15 years.  
17 And it certainly didn't get done.

18 Yes. My best shot, or my best judgment, is  
19 that if we back off, I just sense I see the industry  
20 back off.

21 COMMISSIONER ROGERS: We certainly have seen  
22 some plants that have been good performers at one time  
23 that are on our black list. We certainly have seen  
24 that, that what was an excellent performing plant 10  
25 years ago or so is suddenly -- not so suddenly, but

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1 has slipped into a condition where we're really  
2 concerned about it and have taken some rather severe  
3 action against some of these.

4 I don't really see any reason why  
5 maintenance is any--different from any other part of  
6 managing the plant. If it goes sour in one area, why  
7 shouldn't it go sour in maintenance? Bad decisions,  
8 bad management can lead to a slippage.

9 I'm concerned. I'm very pleased to see the  
10 improvements that industry has been making in  
11 maintenance. I think they're excellent. I think we  
12 have seen very good progress.

13 My concern, however, is: Where's the  
14 backstop to this? Where's the break that's going to  
15 stop it from slipping back down again? If there's  
16 some change in the management of a particular company,  
17 or something like this, and somebody gets a bright  
18 idea of how to save some money and start deferring  
19 some maintenance and it becomes a way of life, then  
20 you're back down again on something.

21 And yes, it is our responsibility to watch  
22 for that and blow the whistle when it happens. But it  
23 would be better to have a more systematic way of the  
24 organization itself coming to that conclusion. That  
25 gives us confidence. It's a question, again, of

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1 accountability in a certain sense.

2 CHAIRMAN ZECH: Commissioner Curtiss, do you  
3 have any other comments?

4 COMMISSIONER CURTISS: No, I think that's  
5 all. Thank-you.

6 CHAIRMAN ZECH: Well, my views are  
7 reasonably well-known, I believe. I, too, am very  
8 disappointed in the utilities' response to this  
9 rulemaking effort that we have had out. I feel  
10 somewhat responsible for beginning this initiative  
11 some time ago.

12 I, frankly, do believe it's in the  
13 utilities' best interest to do a good job in  
14 maintenance. Clearly, it's a safety matter, in my  
15 judgment.

16 Maintenance improves safety. I don't think  
17 anyone can doubt that. Maintenance improves  
18 reliability. I think that's very clear. Maintenance  
19 certainly should improve capacity factor. And I think  
20 we can all agree that that should be an evident  
21 conclusion.

22 Therefore, it seems to me that if I were a  
23 utility executive, no-one would have to tell me how  
24 important its maintenance is. Now, the fact that this  
25 Agency has gone to the extent we have to develop a

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1 maintenance rule should be a very clear signal to the  
2 utilities that this Agency believes, because of our  
3 safety responsibilities, that maintenance is important  
4 and to our being able to carry out our mission for  
5 ~~public health and safety and protecting the public.~~

6 On the other hand, it is very disappointing  
7 to me to recognize that the utilities themselves have  
8 banded together so uniformly in opposing something  
9 that makes such plain common sense to me. It's been a  
10 big disappointment to my tour, I must say, on the  
11 Commission to get such a negative response from the  
12 utilities.

13 And it's an even bigger disappointment  
14 because, as you know, I visited every plant in our  
15 country. I've talked to most all of the senior  
16 management people, senior executives, as well as the  
17 operational people at the plant. And I just simply  
18 don't understand the position that they have taken so  
19 uniformly in this regard.

20 So I'm not impressed with that and I'm  
21 disappointed in it. It is in their best interest, in  
22 my judgment, clearly in their best interest. Setting  
23 aside the safety considerations and thinking only of  
24 economics, if I were a utility executive, I would have  
25 a very difficult time trying to explain to my board of

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1 directors why I didn't support a strong maintenance  
2 program in my plant.

3           Setting aside safety again, if you only  
4 considered economic factors, I think we all know that  
5 ~~the formula has been discussed~~ earlier that if we  
6 increase one percent capacity factor in all the plants  
7 in our country, that would be the same as having one  
8 more power plant in our country, essentially, roughly,  
9 1,000 megawatts a year in our country for 1 percent  
10 capacity factor.

11           My conclusion -- I don't refute your figures  
12 on the cost benefits. I think they're reasonable.  
13 But whether they are or not, the point is, I think, it  
14 makes good common sense to conclude that increased  
15 maintenance is going to increase not only the safety  
16 of your plant and your reliability, but increase your  
17 capacity factor, therefore increase your profit of  
18 your company.

19           From that standpoint, it's very difficult  
20 for me to understand why that kind of an investment  
21 doesn't make sense to utility executives.

22           A rule is coming. I feel confident of that.  
23 It's just a matter of time. My only advice to the  
24 utilities would be: Let's get with it. Just because  
25 it's not coming, maybe not now, it's going to come

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1 some day.

2 And if I were the utilities, I would take  
3 the lead and recognize that it truly is in their best  
4 interest and improve their own maintenance to the  
5 ~~point where they could be proud of it~~ and certainly  
6 prouder than I think most of them can be now.

7 Well, let me thank the staff for their fine  
8 work and for this excellent presentation. I would  
9 like to personally thank all of you staff members; Mr.  
10 King, you, in particular, and your colleagues who  
11 directly worked on this particular matter with so  
12 little support from the utilities.

13 You did conduct a workshop, which was very  
14 meaningful. It's my understanding you conducted it  
15 with a great deal of dignity, a great deal of  
16 statesmanship, with very little cooperation from the  
17 utilities, but you did that with good grace,  
18 integrity, competence. And I commend you for that,  
19 all of you who participated in that workshop.

20 Mr. Stello, you and the Agency leadership  
21 who have participated in this difficult effort, I  
22 commend you, too, Mr. Jordan, Mr. Miraglia, and others  
23 who have participated in this effort.

24 I think the staff deserves tremendous credit  
25 for taking on this very important issue. And I think

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1 they've brought great credit to this Agency in this  
2 effort. Anyway, I'm proud of the all of the staff for  
3 the effort they've done in this regard.

4 And I would encourage my fellow  
5 Commissioners--to give careful--consideration of the  
6 proposal that I have made, and I make it with great  
7 reluctance, to defer rulemaking at this time, but I  
8 believe it's the right thing to do.

9 When we vote on the maintenance rule that  
10 the staff has brought to the Commission, I would  
11 recommend to my colleagues that we at that time state  
12 your individual views with respect to the proposal  
13 that I have made to defer rulemaking.

14 I support, and I fully support, a rule on  
15 maintenance. I believe, though, that the rule should  
16 be developed by the staff to be the best rule we can  
17 make it. I think it can be improved. I think it  
18 should be improved. It would have been improved if  
19 you had had utility assistance.

20 Should the Commission adopt my proposal for  
21 deferring the rulemaking and, in place, put out a  
22 strengthened policy statement, I would recommend that  
23 we retain the basic elements of the present policy  
24 statement with the appropriate revisions that are  
25 based on the staff's efforts in this rulemaking.

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1           Because of the direct impact of maintenance  
2           on operational safety, I would further revise the  
3           current policy statement to encourage expanded  
4           industry use and participation in the nuclear plant  
5           reliability—data—system; to encourage the further  
6           development and use of maintenance performance  
7           indicators; to emphasize the need for continued  
8           improvement in maintenance of nuclear power plants; to  
9           indicate the Commission's intention to further refine  
10          a uniform standard for maintenance; to indicate the  
11          Commission's intention to closely monitor the  
12          utilities' improvements in maintenance through our own  
13          maintenance team inspections, routine inspections and  
14          maintenance performance indicators; to acknowledge the  
15          importance of well-executed and documented maintenance  
16          programs to the Agency's efforts for plant life  
17          extension program; and to state the Commission's  
18          resolve to issue plant-specific orders to those plants  
19          that need specific improvements in maintenance. I  
20          would ask you to take those thoughts into  
21          considerations in developing the policy statement.

22               A good rule, in my judgment, on maintenance  
23               for custom-built plants, like we have in our country,  
24               is very difficult, in any case, to come up with. And  
25               without the support of the utilities, a good

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1 maintenance rule for these custom-built plants is  
2 extremely difficult, if near impossible, for our own  
3 staff to conclude that we can come up with confidence  
4 with a rule.

5 And for that reason, although I continue to  
6 support a rule, I'm willing to defer the rule at this  
7 time in place of a policy statement.

8 I do believe that the utilities should  
9 recognize that the Commission is serious about that.  
10 I hope that the utilities will not take a deep breath  
11 and think it's going away. I don't think it should go  
12 away. I think this Agency, this Commission, has a  
13 responsibility in due time to issue a rule that can be  
14 satisfied with.

15 I would ask my fellow Commissioners, in  
16 reflecting on this matter and in casting your votes on  
17 the maintenance rule and using it as a vehicle to  
18 bring forward your thoughts on this, that you proceed  
19 reasonably promptly to conclude this issue so that we  
20 can get on with the effort, hopefully, of developing a  
21 stronger policy statement and continuing to develop  
22 the reg guide, which would be required for the  
23 rulemaking effort in the future.

24 Those are my thoughts. And I say, with  
25 great reluctance, that I think I've come to this

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1 conclusion. I think what we need is a good rule, a  
2 solid rule, a rule that can be very confidentive.  
3 That does not mean that I detract in any way from the  
4 staff's effort to develop such a rule.

5 Again, I commend the staff for what they've  
6 done in this regard. I think we'll all feel better in  
7 the future when we can put a rule out on maintenance,  
8 that we recognize the impacts on safety, reliability,  
9 as well as capacity factor, that will serve our  
10 Agency, the American people, as well as the utilities.

11 That's what I look forward to some day, and  
12 I feel confident that this Commission will bring that  
13 forth in the not too distant future.

14 Any other comments?

15 (No response.)

16 If not, thank you very much for an excellent  
17 presentation. We stand adjourned.

18 (Whereupon, the foregoing meeting was  
19 adjourned at 3:32 p.m.)

20

21

22

23

24

25

CERTIFICATE OF TRANSCRIBER

This is to certify that the attached events of a meeting  
of the United States Nuclear Regulatory Commission entitled:

TITLE OF MEETING: COMMISSION BRIEFING ON THE FINAL RULEMAKING  
AND MAINTENANCE OF NUCLEAR POWER PLANTS

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: MAY 31, 1989

were transcribed by me. I further certify that said transcription  
is accurate and complete, to the best of my ability, and that the  
transcript is a true and accurate record of the foregoing events.



Reporter's name: Miles Anderson

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COMMISSION BRIEFING ON THE  
FINAL RULEMAKING ON MAINTENANCE  
OF NUCLEAR POWER PLANTS

MAY 31, 1989

### OUTLINE OF BRIEFING

- 0 BACKGROUND
- 0 SUMMARY OF PUBLIC COMMENTS
- 0 OBJECTIVES OF RULE/REG. GUIDE
- 0 SUMMARY OF FINAL RULE
- 0 SUMMARY OF DRAFT REGULATORY GUIDE
- 0 SUPPORTING BASIS FOR RULE/REG. GUIDE
- 0 RECOMMENDATION

### BACKGROUND

- 0 PREVIOUS REVIEWS OF MAINTENANCE  
(SALP, NUREG-1212, ETC.)
- 0 POLICY STATEMENT - MARCH 23, 1988
- 0 WORKSHOP - JULY 11-13, 1988
- 0 PROPOSED RULE - NOVEMBER 28, 1988
- 0 CLOSE OF COMMENT PERIOD -  
FEBRUARY 27, 1989
- 0 PROPOSED FINAL RULE AND DRAFT REG.  
GUIDE - 4/28/89 (SECY-89-143)

PUBLIC COMMENT SUMMARY

<u>COMMENTERS</u>	<u>PRIOR TO</u> <u>2/27/89</u>	<u>AFTER</u> <u>2/27/89</u>
- UTILITIES	19	44
- INDUSTRY GROUPS	3	2
- VENDORS	0	3
- FEDERAL AGENCIES	2	0
- STATE GROUPS	2	0
- PUBLIC INTEREST GROUPS/INDIV.	10	3
	<u>      </u>	<u>      </u>
TOTAL	36	52

PUBLIC COMMENT SUMMARY (CONT'D.)

	PRIOR TO <u>2/27/89</u>	AFTER <u>2/27/89</u>
- FOR RULE	7	0
- AGAINST RULE	29	52

### MAJOR PUBLIC COMMENTS

- 0 PROPOSED RULE IS UNBOUNDED
- 0 NO DEMONSTRATION THAT RULE INCREASES  
SAFETY
- 0 MAY HAVE NEGATIVE IMPACT BY DIVERTING  
INDUSTRY RESOURCES
- 0 INDUSTRY HAS BEEN IMPROVING; INDUSTRY  
IMPROVEMENT PROGRAMS ALREADY EXIST



MAJOR PUBLIC COMMENTS (CONT'D.)

- 0 NRC SHOULD CONCENTRATE ON THE FEW  
POOR PERFORMERS
- 0 JUSTIFICATION ON BASIS OF ADEQUATE  
PROTECTION QUESTIONED
- 0 COST-BENEFIT ESTIMATES IN REGULATORY  
IMPACT ANALYSIS QUESTIONED
- 0 NO COMMITMENT FROM INDUSTRY TO  
DEVELOP A STANDARD

OBJECTIVES OF RULE/R.G.

- 0 DEFINE BASIC MAINTENANCE STANDARD,  
INCLUDING SCOPE OF ACTIVITIES AND  
STRUCTURES, SYSTEMS, AND COMPONENTS  
(SSC)s COVERED.
- 0 IMPROVE LICENSEE MAINTENANCE PROGRAMS,  
WHERE NECESSARY, AND SUSTAIN GOOD  
PERFORMANCE.
- 0 FACILITATE NRC TAKING ENFORCEMENT  
ACTION, WHERE NECESSARY, TO IMPROVE  
MAINTENANCE.

OBJECTIVES (CONT'D.)

- 0 PROVIDE FLEXIBILITY AND RESPONSIBILITY FOR LICENSEE TO ESTABLISH DETAILS OF MAINTENANCE PROGRAM.
- 0 PROVIDE OPTION FOR INDUSTRY PARTICIPATION THROUGH DEVELOPMENT OF A STANDARD AND THIRD PARTY CERTIFICATION PROCESS

### SUMMARY OF FINAL RULE

BASIC APPROACH UNCHANGED FROM PROPOSED  
RULE:

- NONPRESCRIPTIVE
- PERFORMANCE ORIENTED
- EMPHASIS IS ON IMPLEMENTING  
AND MAINTAINING A PROGRAM AND  
UTILIZING EFFECTIVENESS MONITORING  
WITH APPROPRIATE CORRECTIVE ACTION  
TO MAKE IMPROVEMENT, WHERE WARRANTED

### MAJOR CHANGES FROM PROPOSED RULE

- 0 SCOPE OF SSCs COVERED HAS BEEN  
EXPLICITLY DEFINED.
- 0 IMPLEMENTATION SECTION MODIFIED TO  
INCLUDE TWO OPTIONS:
  - 1. INDIVIDUAL LICENSEE CERTIFICATION
  - 2. UTILIZATION OF NRC APPROVED THIRD  
PARTY CERTIFICATION IN  
CONJUNCTION WITH INDUSTRY  
DEVELOPED MAINTENANCE STANDARD

### SCOPE OF RULE

PROGRAM SHOULD ADDRESS SSC'S:

- 0 DESCRIBED IN DOCUMENTS REQUIRED BY  
10 CFR 50.34 (E.G. FSAR) AND
- 0 WHOSE FAILURE COULD SIGNIFICANTLY  
AFFECT SAFETY OR SECURITY

IMPLEMENTATION

	<u>REG. GUIDE+</u> <u>INDIV. CERT.</u>	<u>IND. STANDARD+</u> <u>3RD PARTY CERT.</u>
° RULE EFFECTIVE	12/89	12/89
° STANDARD EFFECTIVE	12/89	12/90
° COMPLIANCE	12/91	12/92
CERTIFIED		

### SUMMARY OF DRAFT REG. GUIDE

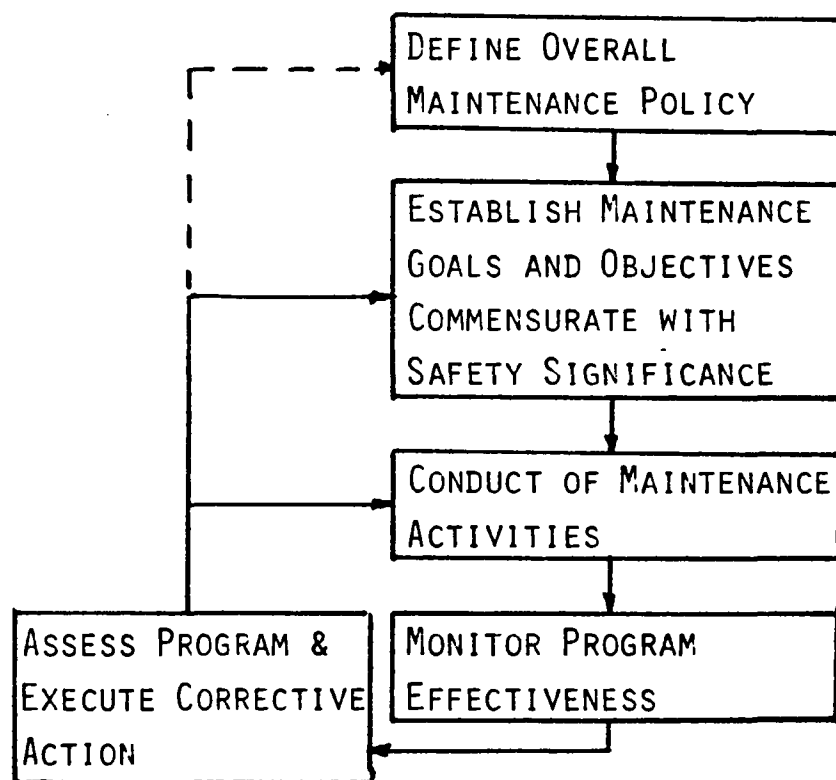
- 0 PROVIDES BASIC GUIDANCE - NOT  
DETAILED MAINTENANCE PRACTICES
- 0 CLARIFIES NRC POSITION REGARDING  
MAINTENANCE OF BOP
- 0 STRESSES SELF ASSESSMENT AND  
FEEDBACK OF OPERATING EXPERIENCE TO  
ACHIEVE IMPROVEMENT



SUMMARY OF DRAFT REG. GUIDE (CONT'D.)

- 0    ALLOWS FLEXIBILITY FOR LICENSEE TO  
     DETERMINE SPECIFIC MAINTENANCE  
     PRACTICES APPLICABLE TO HIS PLANT  
     COMMENSURATE WITH THEIR SIGNIFICANCE  
     TO SAFETY.
- 0    ALLOWS USE OF INDUSTRY GUIDES AND  
     PROGRAMS FOR DETAILS OF PRACTICES
- 0    LITTLE OR NO IMPACT ON LICENSEES WITH  
     EXISTING GOOD MAINTENANCE PROGRAMS

SUMMARY OF DRAFT REG. GUIDE (CONT'D.)



SUPPORTING BASIS FOR RULE AND REG. GUIDE

0 JUSTIFIED ON THE BASIS OF ENHANCED  
SAFETY:

- QUALITATIVE BASIS
- QUANTITATIVE BASES (REGULATORY  
IMPACT ANALYSIS)

### QUALITATIVE BASIS

O MAINTENANCE HAS DIRECT IMPACT ON PLANT  
SAFETY:

- RELIABILITY OF SAFETY SYSTEMS
- CHALLENGE TO SAFETY SYSTEMS AND  
OPERATORS

THEREFORE, IT IS APPROPRIATE FOR NRC  
TO CONSIDER REGULATING IN THE  
MAINTENANCE AREA.

QUALITATIVE BASIS CONT'D.)

- 0 MAINTENANCE TEAM INSPECTION (MTI)  
RESULTS TO DATE CONFIRM VARIATION  
ACROSS THE INDUSTRY IN MAINTENANCE  
PROGRAM IMPLEMENTATION.
- 0 RULE WILL FACILITATE COMMISSION'S  
ABILITY TO TAKE ACTION TO ACHIEVE  
IMPROVEMENT

QUALITATIVE BASIS (CONT'D)

0 RULE WILL STABILIZE AND BETTER DEFINE  
REQUIREMENTS TO:

- HELP ENSURE GOOD MAINTENANCE IS  
ACHIEVED AND SUSTAINED
- HELP ENSURE THE EFFECTS OF AGING  
ARE CONSIDERED IN MAINTENANCE  
PROGRAMS
- FACILITATE LIFE EXTENSION  
DECISIONS

### REGULATORY IMPACT ANALYSIS (RIA)

- 0 MANY COMMENTS RECEIVED ON PROPOSED RIA
- 0 RIA REVISED TO REFLECT SIGNIFICANT  
COMMENTS AND MTI RESULTS
- 0 RIA SHOWS OVERALL POSITIVE NET  
BENEFIT CONSIDERING:
  - REDUCTION IN PUBLIC RISK
  - INDUSTRY COSTS
  - INDUSTRY COST SAVINGS

RIA (CONT'D.)

- 0 RIA NOT USED AS SOLE BASIS FOR RULE,  
BUT AS CONFIRMATION THAT RULE CAN BE  
IMPLEMENTED IN A FASHION THAT ENHANCES  
SAFETY IN A COST-EFFECTIVE MANNER.



SUMMARY OF RIA RESULTS

	<u>BEST EST.</u>	<u>RANGE</u>
0 RISK REDUCTION (50,000 PERSON-REM)	\$50M	0 TO \$100M
0 COST TO IMPLEMENT (30 YR. DISCOUNTED)	-\$658M	-\$283 TO -4,000M
0 COST SAVINGS (30 YR. DISCOUNTED)	\$1350M	0 TO \$12,000M
NET	<hr/> \$742M	

SUMMARY OF RIA RESULTS CONT'D.)

NOTE: 0 ALL VALUES BASED ON 110 PLANTS  
0 1% IMPROVEMENT IN CAPACITY  
FACTOR CORRESPONDS TO:  
- \$160 - \$240M/YR-1988 DOLLARS  
- \$1500 - \$2260 M/30 YR-DISCOUNTED

### RECOMMENDATION

- 0 THAT COMMISSION PROCEED WITH  
PROMULGATION OF FINAL RULE AND PUBLISH  
DRAFT REGULATORY GUIDE FOR COMMENT.
- 0 THAT STAFF CONTINUE DEVELOPMENT OF  
REG. GUIDE.
- 0 THAT INDUSTRY PARTICIPATION (STANDARD +  
3RD PARTY CERTIFICATION) CONTINUE TO  
BE SOUGHT.