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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Title: Briefing on Status of Maintenance Program and Policy Statement/Advanced Notice of Proposed Rulemaking

Location: Washington, D. C.

Date: Thursday, January 7, 1988

Pages: 1 - 75

Ann Riley & Associates
Court Reporters
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D I S C L A I M E R

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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BRIEFING ON STATUS OF MAINTENANCE

PROGRAM AND POLICY STATEMENT/ADVANCED

NOTICE OF PROPOSED RULEMAKING

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PUBLIC MEETING

Nuclear Regulatory Commission

Room 1130

1717 H Street, Northwest

Washington, D.C.

Thursday, January 7, 1988

The Commission met in open session, pursuant to notice, at 2:00 P.m., the Honorable LANDO W. ZECH, Chairman of the Commission, presiding.

COMMISSIONERS PRESENT:

LANDO W. ZECH, JR., Chairman

THOMAS M. ROBERTS, Commissioner

FREDERICK M. BERNTHAL, Commissioner

KENNETH M. CARR, Commissioner

KENNETH C. ROGERS, Commissioner

STAFF AND PRESENTERS SEATED AT COMMISSION TABLE:

SAMUEL J. CHILK, Secretary

WILLIAM C. PARLER, General Counsel

VICTOR STELLO, JR., Executive Director for Operations

ED JORDAN

JAMES SZNIEZEK

JACK ROE

JOHN ZWOLINSKI

P R O C E E D I N G S

CHAIRMAN ZECH: Good afternoon, ladies and gentlemen.

The purpose of today's meeting is for the NRC staff to brief the Commission concerning the interim policy statement on maintenance of nuclear power plants. I personally believe that the safe nuclear facilities are reliable nuclear facilities, and reliable nuclear facilities are economic nuclear facilities. Proper maintenance programs that are vigorously executed, in my view, make a substantial contribution to safety. They are reliable, and it just makes good economic sense, too.

The results of the staff's maintenance and surveillance program, combined with the events at operating reactors, plus my own visits and those visits of my fellow Commissioners to the power plants in our country and abroad, have convinced us that maintenance is one area where some power reactor licensees could improve substantially, and where virtually every licensee can improve to some degree.

We at the Commission have recently received a paper from our Secretariat that transmits the staff's recommendation concerning an interim policy statement on maintenance of nuclear power plants. I believe that this briefing today will be valuable in assisting us in our review of that policy statement and be useful in our preparation of our action to take on this statement.

During the presentation today, I would like the staff to discuss also their intentions and their schedule for preparing a maintenance rule. I understand that copies of the staff's slides to be used during the presentation today and other papers are available on the table at the back of the room.

Do my fellow Commissioners have any opening comments to make?

[No response.]

CHAIRMAN ZECH: If not, Mr. Stello, would you proceed please.

MR. STELLO: Thank you, Mr. Chairman.

I would like to address one issue that you raised in your opening comments, and then I will quickly turn to Mr. Szniezek and Jack Roe for a briefing on the policy statement.

That is, the idea of when and how to come forward with a rule on maintenance. Our schedule at the moment is to provide to the Commission in March an advance notice for proposed rulemaking for a maintenance program.

The reason for wanting to go to an advance notice is we are not really sure we know how to structure a proposed rule that will do the job that needs to be done and be convinced that we're right, and an advance notice will allow us the opportunity to make sure that that rule is constructed correctly.

But more significantly, what we would like to be able to do is to have the policy statement in place and have that policy statement followed, which we believe will add significantly to our ability to understand how to frame a rule that would be useful for the long term. Whether that needs to be very proscriptive in its nature, or whether it ought to be very general--something as simple as just simply saying that the industry shall develop a comprehensive maintenance plan for the year and submit it to the NRC for its approval, to a rule that describes particular detailed elements of the maintenance plan, is one that we want to consider very carefully, because proscriptive rules very often are a problem. I would rather not take that step now, unless it really turns out to be necessary.

We think we will have the information we need, if the Commission goes forward and agrees to move forward with this policy statement, that will do a good job and, hopefully, if everything goes well we may be able to advance substantially our schedule for getting a rule. Whether that comes to pass or not of course is conjecture at the moment, but I think if the industry is responsive and does do a very good job, which I expect that they ought, the motive--as you've already indicated, in just capacity and reliability of the plants' overall performance--is there, I think we may be able to move much faster. Of course we will have to wait and see.

I would rather have been able to propose something definitive. I really think it would be a mistake to try to move too quickly and make the decision on how to frame that rule right now.

With that, let me turn to Mr. Szniezek to give you a broad overview of where we are, and then we will get into the details of the policy more with Mr. Roe.

CHAIRMAN ZECH: Before you begin, let me just make one brief comment on that statement. I would just ask that you, in the next months, keep an open mind to the possibility of going directly to a rule rather than advance notice for proposed rulemaking, if it does seem like that is the appropriate thing to do.

MR. STELLO: We will do everything we can to try to take that step.

CHAIRMAN ZECH: You will consider it.

MR. STELLO: Yes, we will.

CHAIRMAN ZECH: All right. Thank you, very much.

Mr. Szniezek, you may proceed.

MR. SZNIEZEK: Before Jack Roe begins his detailed briefing on the policy statement, I would like to mention just a few key points.

Historically the NRC hasn't put a great deal of attention and emphasis on integrated maintenance programs. We believe this has been reflected in the status of maintenance in

the nuclear industry today. We believe that from a safety standpoint it is time for us to change that. It is time for us to start exercising a leadership role in the maintenance area.

This leadership role involves a coordinated effort between many NRC offices--NRR, AEOD, Research, and of course the Regions--and we have received this cooperation in going forward up to this point, and we expect it to continue.

In exercising this leadership role, we intend to be the impetus behind a changed maintenance ethic in the nuclear industry, one that we believe will enhance safety and would have the side benefits of increased reliability and increased availability of the plants.

The first step we see in this impetus is telling the industry what we expect. That is, that we expect the plant equipment to be maintained so that it is available to perform its intended function; and if for some reason it does break, to repair it promptly. That is what we really expect out of the industry.

To reinforce this, we believe it is necessary to go out and do multi-discipline maintenance team inspections at the sites to see what is really working out there, to see the extent of safety problems, if any exist, and then to take whatever actions are necessary to correct any safety problems and to make sure that the maintenance was working effectively.

COMMISSIONER BERNTHAL: Does that mean that you don't

feel we have a good understanding of the current status of maintenance in the plants? In other words, doesn't our normal SALP program and normal on-site inspectors and inspections get a good picture of that? Or what are you saying?

MR. SZNIEZEK: I don't believe our normal program today gets a good, integrated picture. Now as part of our inspection program today, inspectors look at maintenance activities. We don't have an integrated program in place to look at everything that impacts on maintenance activities--the health physics interface, the design interface, the interface with operations, things of that nature--and that is what we are really going to be taking a disciplined look at with the multi-discipline team inspections: the interfaces, what really makes maintenance effective at a plant, and see what the utilities have.

COMMISSIONER BERNTHAL: So you are talking more not about the hardware evaluation but about management and systems' evaluation.

MR. SZNIEZEK: And looking at the status of the actual equipment in the plant--how much is broken, if there are leaks.

COMMISSIONER BERNTHAL: I think you just said the opposite of what I said. It sounded like you were saying that we did focus on specific hardware problems in our normal inspections in SALP processes, but that it was the overall

integrated picture, including management and systems analysis, that we didn't do that we were going to do in this program.

MR. SZNIEZEK: We're doing both in the program that we're going to. We focus more on the hardware today. For example, our inspector goes out and watches a maintenance activity being performed to see if the right procedures are followed, but they don't necessarily look at all the planning and the interfaces that went on before that. We are going to correct that in our new program to really make sure we have a good understanding of what makes maintenance tick at a plant.

Also as part of the effort we are going to monitor is what the industry has underway. We are going to monitor them to see if they are effective, and we are going to monitor them through how are they being implemented at the plant; not just paper reviews, but are they actually taking hold in the plant.

In addition, it will be in the process to develop a rule and put a rule in place at the appropriate time, and we believe that we will set the stage with the policy statement. We will start doing these team inspections, which we expect to have underway in about the April time frame, to start them, and that will give us a lot of insights into how we should develop a rule.

With that, I would like to turn it over to Jack Roe who will lead us through a discussion of the details of the policy statement itself.

CHAIRMAN ZECH: Thank you, very much.

Mr. Roe, you may proceed.

MR. ROE: Thank you, Mr. Chairman.

I would like to start first with the background slide.

[Slide No. 1.]

[Slide No. 2.]

MR. ROE: It is important to note that the industry has several initiatives that have been implemented. The most noteworthy for the staff are those conducted by INPO. Of their several initiatives, we find the most interesting are the Guidelines for the Conduct of Maintenance at Nuclear Power Plants, an INPO document that has been sent to all plants, and our understanding is that all plants have committed to conduct a self-assessment against that particular document, or selected portions of that document at their selection.

In addition--

COMMISSIONER CARR: How long has that been in place?

MR. ROE: I believe, sir, that started off in 1985.

In the area of assistance visits, INPO has a special team, a Maintenance Assistance and Review Team, where they have a two-week visit of approximately eight members, of which one is a peer evaluator, one or more could be a peer evaluator, someone who actually conducts maintenance at a plant. So far, we have knowledge that they have conducted 12 of these

particular assistance visits.

In addition, INPO reviews maintenance during their periodic plant evaluations. The staff, from the period of approximately 1985 to 1987, has reviewed the effectiveness of maintenance by 10 site visits, 10 plant visits, and obtaining 66 questionnaires from other operating plants.

From those particular reviews we have found a wide variation in effectiveness. We have determined that needed maintenance is not being accomplished at some of the facilities. For example, overall statistics show that 64 percent of the total forced outage time is due to component failure; 48 percent of 1985 LERs were maintenance-related.

We found a high percentage of failures from improper performance of maintenance. It is noteworthy that 30 percent of the abnormal occurrences since 1975 are maintenance-related. Since 1983, the proportion of maintenance-related and LERs has increased.

We see that the maintenance/operation interface is inadequate in many areas. For example, statistically 65 percent of the loss of safety system functional events were due to human errors--many related to maintenance.

We believe that maintenance-related challenges to safety systems are very excessive. Statistically we found that 75 percent of ESF actuations in 1984 and 1985 were maintenance-related.

[Slide No. 3.]

MR. ROE: Next I would like to discuss the content of the policy statement and a little bit of the philosophy behind the way it was developed.

This particular policy statement was developed to be concise--

COMMISSIONER BERNTHAL: Let me ask one question. I am trying to think of a case where any breakdown of any kind in a plant would not, first of all, be management-related of course, but beyond that--because ultimately everything is management related; if you've got bad maintenance, you could argue it's bad management--but let's get one step down, now.

What kind of events, when you say numbers like 75 percent maintenance-related, what kind of events where there is a failure could you not ultimately always ascribe to a maintenance breakdown, for example? What kind of failures of hardware of any kind would not be ascribed to maintenance?

MR. STELLO: You're looking for examples of things I would say clearly you can't blame maintenance?

COMMISSIONER BERNTHAL: Yes.

MR. STELLO: Recent events at Palo Verde, the pump shaft.

COMMISSIONER BERNTHAL: Okay, design structural flaws.

MR. STELLO: Cracked shafts at some of the high head

pumps. The TVI diesel generator problems were clearly design problems. The channel box failures in BWRs, vibration problems-- COMMISSIONER BERNTHAL: Design flaws, basically, and manufacturing flaws.

MR. ROE: And some of them a combination of both.

MR. STELLO: The point being clearly that there are a lot of things that no matter what you do with maintenance, you can't preclude the failure. BWR pipe crack problems. You could do maintenance as much as you want. You're going to have them.

MR. ROE: Steam generator tubes are one that can be non-maintenance related.

MR. STELLO: A lot of them are from the design.

CHAIRMAN ZECH: Personnel errors. Don't forget that.

MR. STELLO: Personnel errors, just pure personnel.

COMMISSIONER BERNTHAL: Okay.

MR. ROE: Back to the content of the policy statement. It is important to note that staff's intention of developing this policy statement is to make it to the point, crisp, and make it straightforward.

I would like to address two parts of the policy statement in summary fashion and go into the details of the policy section in the additional information section.

The summary section of the policy statement emphasizes the importance that the Commission places on

maintenance to nuclear safety.

Secondly, it states that we will evaluate industry initiatives for approximately a two-year period. During this two-year period, as Mr. Stello has indicated, the staff intends to issue an advanced notice of proposed rulemaking and, if appropriate, follow it up with a draft rule, and also if appropriate and necessary, to continue with the final rule.

Another point I would like to mention overall in the content of the policy statement is the statement that we have made associated with enforcement. The reason I bring this out is that some of our policy statements recently comes to mind the one on training accreditation, our policy on enforcement was that we would modify in some cases while the industry was improving.

The staff's position in this particular policy statement is that we will continue our particular enforcement policy--that is, that we will take vigorous enforcement action where we find noncompliances with the Commission's regulations.

[Slide No. 4.]

MR. ROE: I would like to go on now to address the actual policy.

MR. PARLER: I have a question, Mr. Chairman. I don't understand that statement that was just made. May I ask a question?

CHAIRMAN ZECH: Certainly. Go ahead.

MR. PARLER: If there are no regulations on maintenance, what is the enforcement going to be based against? I don't understand the statement that was just made. I apologize for asking the question.

CHAIRMAN ZECH: No, that is a good question. Let's have an answer.

MR. PARLER: I have had to testify to that in past sessions.

CHAIRMAN ZECH: I know. What is the response.

MR. ROE: I would not agree with General Counsel's comment that there are no regulations associated with maintenance. There are a multitude of regulations associated with maintenance. Let me give you a few examples:

The tech specs require a significant amount of surveillance activities, and they are based on many industry standards. There is a well-defined program of in-service inspection of nuclear power plant components and in-service testing of nuclear power plant structures and components.

CHAIRMAN ZECH: So you are saying there are regulations.

MR. ROE: Yes, sir; and there are requirements in Appendix B, our quality assurance, that would require certain activity to be taken commensurate with an item's importance to safety.

CHAIRMAN ZECH: I am sure the General Counsel would

like to make a statement.

MR. PARLER: Well, Mr. Chairman, I appreciate the clarification to remove the ambiguity that exists at least in my mind that we are operating completely under a policy statement and we're thinking about some time over the next two years coming out with an advanced notice, perhaps a proposed rule, perhaps a final rule.

The fact is, apparently, that there are a lot of regulations that are already applicable that are codified and that could be enforced. I regret the misunderstanding, and I appreciate the clarification.

MR. ROE: We feel I think that the status of the Commission's regulations on maintenance are fragmented. They are in various sections. There is not an integrated approach to the overall subject of maintenance conducted at nuclear power plants.

CHAIRMAN ZECH: But when you say they're not integrated and that they're fragmented, that's an important differentiation because there are regulations. I think that's the General Counsel's point.

MR. ROE: Yes, there are, but they're fragmented.

CHAIRMAN ZECH: All right.

COMMISSIONER BERNTHAL: Let's see. Is the point then that--it is certainly a useful management thing for us to pull our managing efforts here, our regulatory efforts together to

provide a focus on the perceived problem. Would it also be the objective here in a rule to pull together all these fragmented maintenance things so that they all appear in one place in a tidier list so we know what we are trying to do?

MR. STELLO: That was the reason I said at the beginning of this meeting what I said. It isn't clear which approach we ought to follow during the rule, whether we ought to try to get that very detailed proscriptive kind of rule that integrates all of that, or a very simplistic rule that just says develop a maintenance program plan for your facility using this philosophy, submit it to us for our review, and then we will make binding through some mechanism, whether a license amendment or whatever, a requirement that you follow and adhere to that maintenance plan. That is a very simplistic kind of a rule.

The integration in all of that stuff, then, takes place somehow, but you evolve the actual maintenance program plan. Then that's the thing you make a requirement, and try to develop a way to weave together all of these pieces in our regulations that deal with the issue, and trying to make sure that they are all integrated.

I am not sure which way we ought to go. If I were required to do anything to do anything today, I think I would take the very high road, simplistic road, and just simply say: Develop me a maintenance plan, submit it, and make it a part of

the license.

CHAIRMAN ZECH: But isn't that somewhat similar to the approach that FAA has now?

MR. STELLO: It would be precisely that approach.

CHAIRMAN ZECH: So that is one approach that we could take.

COMMISSIONER CARR: That is the same as we have got for quality control now in Appendix B.

MR. STELLO: In terms of--

COMMISSIONER CARR: Have a program.

MR. STELLO: Yes.

CHAIRMAN ZECH: And let us approve it.

MR. STELLO: But what it would require is the actual maintenance program plan, the details, to be submitted in a document for our approval.

COMMISSIONER CARR: Let me ask a question on enforcement. Are you talking about this last page that says "Nothing in the policy statement shall limit the authority of the NRC to conduct inspections or take appropriate enforcement action when regulatory requirements are not met?

MR. ROE: That is correct, sir.

COMMISSIONER CARR: Well, that sounds reasonable enough.

MR. ROE: And the reason why we put it in there was to be sure that there was no confusion that some of the actions

that the Commission had taken in the past during two-year evaluations, or other similar evaluation periods, was to modify enforcement actions based on an improvement period.

COMMISSIONER CARR: All right.

CHAIRMAN ZECH: All right, you may proceed.

MR. ROE: I would like to address the policy now. The policy is straightforward. We believe and have an expectation that nuclear power plants--that all components, systems, and structures should be available to perform their intended function and, if they are not available to perform their intended function, they should be promptly repaired.

I have to stress that in the policy statement the Commission expects that all the components, systems and structures, not just those that may be in a category associated with some other of the Commission's determinations such as safety-related, important to safety, or other characterizations. They should be all the systems.

They should include those systems that are associated with the nuclear steam supply system through the balance of plant, and even auxiliary equipment. Today, as an example, in the morning report from the regions there was an item that would seem not to be that important to the functioning of the plant to someone who did not have the proper perspective. It was a report where at one of our boiling water reactors the operators noticed that two of the recirculation pump seal

pressure gauges increased from their normal operating temperature--pardon me, normal operating pressure of about 520 up to about 800 pounds per square inch gauge, and the reason was that there was found to be close to freezing temperatures in the areas where these gauges were; there seemed to be an effect on the line; and the reason was that the auxiliary boiler providing heating to that particular space was not in service.

You can see the importance of having a proper maintenance program for all systems, structures, and components in a nuclear power plant.

The second part of the policy is that the Commission expects that each plant should have a prescribed maintenance program that is developed and implemented to include such items as repair, surveillance, diagnostic examinations, preventative measures, post-maintenance testing, and that the program should be developed commensurate with the prescribed functions of the equipment.

When we speak of "prescribed functions," we are really addressing as that the plant, the utility, should take a reasoned approach and analysis of the design basis of that particular item, its mode of operation, the recommendations from the vendor, the designer, the supplier, consider the role that that particular piece of equipment plays in the safety and/or the production of power of the facility, and the failure

modes, effects, and records of that particular equipment to establish a maintenance program that considers those particular points.

For example, in modes of operation areas that should be considered are its actuation. Does it run continuously? Is it intermittent? Is it standby? Taken into consideration should be its environs. Is it in a relatively uncontrolled environment? A controlled environment? Or one that is harsh? Obviously vendor recommendations should be considered. Analysis should be conducted to see if they are adequate, or if they are even available at this particular stage in the plant's life.

Obviously taken into consideration should be the role that it plays in the production of power, and in safety. Consideration should be given to whether it has normal or emergency use. And lastly, consideration should be taken of the failure records to determine whether it has frequent failure history which might indicate an improper design, or a design improvement needed; whether it is failing on a premature basis earlier than it was thought to that might indicate a design fault or an improper maintenance program; and other aspects of its failure.

The next part of the policy statement is one that addresses additional information. In this particular area, we desire to provide the industry additional information on

several areas.

The first thing is the definition of maintenance.

The second is the framework.

Third, is some more information about components, systems, and structures--and especially in that particular area, the NRC's regulatory perspective and regulatory primary approach.

The definition of "maintenance." As you see, the staff has proposed a broad definition of maintenance, one that probably is going to touch about 70 percent of the activities of the nuclear power plant. This particular definition of "maintenance" does not focus on the classical maintenance department, but includes supporting functions.

It goes all the way, in my mind, from design to support of radiation protection during maintenance activities. In the additional information section, we should some elements that have broad applicability to effective maintenance programs. These are the four that are stated on the slide.

The first one is straightforward: A program should be established with objectives based on an analysis of the maintenance requirements for that particular plant.

The program should be developed and implemented that addresses corrective, preventative, predictive, surveillance, post-maintenance, testing, and other supporting actions. In this particular area, you should strongly consider the vendor

recommendations.

In the next area there should be a program evaluation where you develop methods and criteria to evaluate the program.

And lastly, there should be a feedback mechanism. This seems so simple and straightforward, almost academic; however, in our evaluations we found that sometimes very important missing elements of this type of framework are missing. That is why we are going to focus to be sure that each one of these particular areas are covered in a maintenance program.

The next area that we address is the component, systems, and structures. Here, you see that we state that a maintenance program should be developed and implemented for all component, systems, and structures. We wanted to make that point very, very clear. We do not want people to believe that because there are certain categories that we have placed equipment in, that there is an area where you can stop maintenance, where there are no maintenance programs required.

The example I would give, which was a perfect example this morning, is the boiler. The boiler is important. Everything in that particular plant should receive the proper maintenance attention.

COMMISSIONER ROBERTS: I don't want to draw this out, but you say that the gauges were registering a high pressure because?

MR. ROE: There was freezing in the lines.

COMMISSIONER ROBERTS: Because the auxiliary boiler was not lit off?

MR. ROE: Because the heat was not supplied to the rooms where these gauges where the lines were located, and the temperature went to the freezing point and solidified the lines.

COMMISSIONER ROBERTS: Was the source of heat inoperable? Or had it not been turned on?

MR. ROE: It was inoperable. It was not in service, sir.

COMMISSIONER ROBERTS: Thank you.

MR. ROE: We have discussed the next point, which is commensurate with its function. We should note that in our policy statement we talk about a priority, and we use the approach here that the priority of maintenance activities should be commensurate with its importance to safety.

Next, we show in this particular policy statement where the NRC's primary focus will be. Our primary focus is going to be on those structures, systems, and components that have the most regulatory or safety significance. However, we are going to follow through and our secondary attention is going to be placed on those particular items which don't fall into that particular category. We plan to look at both particular areas.

I think the most important part of the program in maintenance that the staff desires to undertake is the leadership program, which Mr. Szniezek and Mr. Stello have addressed. This is where the NRC staff is going to conduct special team-type inspections at selected sites. Our current thinking on selected sites is probably the majority of sites may be even greater than 75 percent of those throughout the Nation.

We hope to conduct these particular special team inspections with emphasis on maintenance in approximately two years. We plan to start with a pilot program in the April time frame. We would like to take an opportunity to try the program out, to develop the guidance, to utilize the guidance, and also to have an opportunity for the industry to see how we are carrying out this first stage of the program, and give them an opportunity to address what we have done at that particular site, the guidance that we've used, so that we can get their input when we go on to implement the program--a very similar approach as we are taking in the operator requalification issue, allowing there to be an appropriate amount of industry comment into the process. After we have completed our pilot program, we plan to implement throughout the Nation in all the regions team leaders and team members--team leaders essentially from the regional organization, team members from various components of the NRC, including the NRR headquarters, the

other regional offices, AEOD, and research.

We plan to have a significant amount of advance preparation for these particular visits. We plan to have approximately seven or so days on site on inspection time, and we are going to provide the results of these particular assessments and inspections in formalized reports so that when the time is appropriate staff will have a firm basis for their findings, and the recommendations to the Commission on going forward with a rule or not.

In these particular assessments, you can see that in the next slide, that we've got several areas that we plan to focus on.

[Slide No. 5.]

MR. ROE: As I indicated, we are developing an assessment plan and guidance at this point. I would like to point out some of the areas that we would be focusing on in the specific areas of review.

For example, and not to be all-inclusive, in the management commitment area we would be looking at the corporate level oversight, the tracking of performance, and the funds and focus allocated by management.

In work control we would be looking at such areas as procedure, job approval, and maintenance backlog probably with the focus on what we believe is the proper priority. Is the maintenance being addressed and worked off associated with the

most important safety functions?

In the area of facilities and equipment, we pay particular attention to the material condition of the plan, and also to such areas as the spare parts and material management and facilities such as shops.

In the personnel area, we plan to look at such things as training and qualification, and performance, communication, and actual staffing. As you are aware, there has been a significant INPO effort in the training and qualification of the maintenance-oriented crafts.

In the area of technical support, we plan to specifically focus on the utilization of the facility of the NPRDS system. Is it actually working there? Is it being utilized? Is it an effective system?

We also plan to take a look at how they carry out their preventive maintenance, their predictive maintenance, how they keep their maintenance history, how they go about post-maintenance testing and design changes.

That concludes the briefing on the maintenance policy statement and the staff's assessment activities, sir.

CHAIRMAN ZECH: All right. Thank you very much.

Questions from my fellow Commissioners? Commissioner Roberts?

COMMISSIONER ROBERTS: No.

CHAIRMAN ZECH: Commissioner Bernthal.

COMMISSIONER BERNTHAL: I don't really have very many questions, I guess. Gee, this could be a short meeting.

Two questions, short ones. If you decided--and this is speculative at this point--but if you should decide that, based on public comment, or based on your own observations as you go through some of these inspections, that the rule that we might consider here should be a rather detailed rule, as opposed to the rule that Mr. Stello apparently prefers at this point, how would that differ in fact from what we used to refer to as "General Operating Criteria" here?

Now I realize that General Operating Criteria would have been a more inclusive volume, by far, but presumably General Operating Criteria would also have encompassed this kind of detail with respect to maintenance, would they have not?

MR. STELLO: For maintenance itself, yes.

MR. ROE: Yes, sir.

MR. STELLO: But it obviously wouldn't include all of their aspects.

COMMISSIONER BERNTHAL: No. I understand that.

MR. STELLO: This would be one element of that, if you try to get into that great detail.

COMMISSIONER BERNTHAL: So as you go back and look at what I gather was a fairly extensive study and program laid down for General Operating Criteria, are you suggesting that we

could almost lift the maintenance elements of that and you would have a very strong running start on a detailed maintenance rule?

MR. ROE: I don't know if we know enough at this point to make that judgment.

MR. STELLO: That study that you're talking about detailed all of those things which are already a part of our requirements, and what you would be looking at is what to fill in. Remember, that study said we already have quite a bit that we require.

COMMISSIONER BERNTHAL: That's what you just told us here, though, about maintenance, as well.

MR. STELLO: Now what is it that you have to fill in?

COMMISSIONER BERNTHAL: Right.

MR. STELLO: And how do you have to integrate that in its detail? So there would be quite a bit to add to that.

COMMISSIONER BERNTHAL: So it would go beyond the proposed operating criteria in detail.

MR. SZNIEZEK: Very possibly.

COMMISSIONER CARR: What you've told us is they're meeting the requirements now, and it is not satisfactory.

MR. STELLO: Well, I don't think they're all meeting it.

MR. ROE: We're not convinced that they're meeting them.

MR. STELLO: There are a lot of plants that we really are having--have cited them for maintenance problems. But even those that we aren't citing that are meeting them, it is clear that substantial improvement can be made. I think a lot of it has to do with where we have put our emphasis. We have put so much of that emphasis on the nuclear steam supply part of the plant that you do see an awful lot of the balance of plant that just simply--the industry I think has followed the regulatory lead. Where we have put emphasis, they have; and where we haven't, they haven't.

COMMISSIONER BERNTHAL: Okay. Well that answers the first question.

The second one, getting back to the other scenario where we do something very, very simple, which I gather would be similar in intent, if not in detail, to what we did for the proposed fitness for duty policy statement, more or less you say that you shall be drug and alcohol free, and in some sense be able to show it. That was sort of the sum and substance, and you would propose something similar here.

What about the Japanese model? Have you considered what benefits might accrue from the Commission simply mandating a periodic shutdown for maintenance? That seems to have worked--

MR. STELLO: What I have described is the Japanese system.

COMMISSIONER BERNTHAL: The Japanese, by law, require a shut down of three months per year.

MR. STELLO: Forget that.

[Laughter.]

COMMISSIONER BERNTHAL: Why should I forget that?

MR. STELLO: Because what they also require is what you do during those three months. You will do this maintenance stuff that we agree with.

COMMISSIONER BERNTHAL: And how detailed, then--

MR. STELLO: And that is what I am describing.

COMMISSIONER BERNTHAL: How detailed--

MR. STELLO: How long it takes is another matter.

COMMISSIONER BERNTHAL: How detailed are the prescriptive requirements that Japan has for those three months of maintenance?

MR. STELLO: Very.

COMMISSIONER BERNTHAL: And so you would propose to emulate something like that?

MR. STELLO: And that is similar to the FAA system, where the FAA goes to the airline and gets the airline to get from the air frame manufacturer, get from the engine manufacturer, give me a complete maintenance program for all of this equipment, and gets the airline to propose that in a document, and then the FAA incorporates it into its regulations.

COMMISSIONER BERNTHAL: Okay. I want to get back to the question, though, and I am not going to forget the three months' shutdown. Why wouldn't we, then, do something like that do, however prescriptive it gets in detail?

MR. STELLO: Because they don't care how long it takes. What you want is to get the program--

COMMISSIONER BERNTHAL: We don't care how long it takes?

MR. STELLO: No. We want a good maintenance program.

COMMISSIONER BERNTHAL: Why do the Japanese care about how long it takes?

MR. STELLO: Well, they are also caring enough now to come back and ask the question whether they ought to be cutting back, and they're looking to cut back on it.

COMMISSIONER BERNTHAL: And indeed they were very conservative, but they apparently are not about to change the requirement for a fixed shutdown time.

MR. STELLO: Well, they're looking at it right now.

COMMISSIONER BERNTHAL: A change in the time, but not the overall requirement for a period of time.

MR. STELLO: Oh, no. It is how long. That is what I said.

COMMISSIONER BERNTHAL: Right.

MR. STELLO: It isn't so much of a concern as to how long it ought to be to do this maintenance.

COMMISSIONER BERNTHAL: Maybe I am not making myself clear. Why would we not propose a required, however long it is, a required period of time for shutdown as a reasonable time to perform the required maintenance?

MR. STELLO: I guess I'm not communicating. I am answering your question. If you in fact prescribe a particular maintenance program plan that Thou Shalt Follow, it will tell you that you have got to shut down the plant and do this amount of maintenance, and however long that is is however long that is. You have got to do the maintenance in that program plan.

A great deal of it will require the plant to be shut down to do it. When you have to overhaul the feedwater pump, would you have to pull out the isolation valves and lap valves and tear the valves down? All that is going to be spelled out in the maintenance plan.

COMMISSIONER BERNTHAL: Okay. Presumably--

MR. STELLO: However long it takes is how long it takes.

COMMISSIONER BERNTHAL: Of course.

MR. ROE: Commissioner, I think I can give you an answer that shows the approach that the NRC has taken versus the approach that the Japanese have taken.

The Japanese have taken, from what my understanding is, a time period. After so many calendar months or days, there is a shut down. And there are certain types of

surveillance testing and other maintenance activities conducted during that time period shut down.

The NRC has not as much in that particular area of when the plant shuts down requirements. We do have requirements that necessitate the plants being shut down to accomplish them. But we allow it to take place on the normal refueling cycle. There are a considerable amount of requirements in the Standard Technical Specifications that have to be conducted at the refueling outages.

COMMISSIONER BERNTHAL: So you think what the Japanese are doing is unnecessary; that they should simply require their list of things, and not require a specified period of time? Isn't that what you're telling me, that if they've got the list and it is complete, that they shouldn't care how long it takes?

MR. STELLO: That is my view. As long as the maintenance is done properly.

COMMISSIONER CARR: I don't think that's right.

COMMISSIONER BERNTHAL: Don't you think it is an appropriate discipline to ensure that shortcuts aren't taken to do what they do?

MR. STELLO: Well, I am more interested in getting the job done right. If that takes a week--

COMMISSIONER BERNTHAL: We all are.

MR. STELLO: --fine. If it takes a month, fine. But

to get the right maintenance done, however long it takes, it takes; and what the Japanese are looking at is whether or not they can still do all of what needs to be done in a shorter period of time, and they think they can.

Now whether or not it will turn out that they can't shorten it, that is their judgment. But I don't think that one can sit here and decide, well, let's just shut the unit down for a month a year. If you look at reality, our units on the average are shut down more days by close to a factor of 2 than the Japanese are now.

Our average plant availability capacity factors run, as I recall, roughly 20 to 25 percentage points lower than the Japanese. Or another way to say that--

COMMISSIONER BERNTHAL: Yes, but that's got all the unplanned shutdowns in it. That is not planned.

MR. STELLO: But the total amount of time the plant is shut down per year is longer in the United States than it is in Japan.

COMMISSIONER BERNTHAL: But those are unplanned shutdowns, in many cases. They are not--

MR. STELLO: During those unplanned shutdowns, they are fixing things.

COMMISSIONER BERNTHAL: Indeed.

MR. STELLO: That is what they do. And the total amount of time that the plants are shut down in Japan to fix

things is shorter than it is in the United States, on average.

COMMISSIONER BERNTHAL: Let me try it this way. For all the list of things that you think need to be done, would any reasonable person expect it to take at least a week?

MR. STELLO: I think it would take considerably more than a week.

COMMISSIONER BERNTHAL: Okay. Would any reasonable person expect it would take a month?

MR. STELLO: I think it would take more than a month. I think the typical average is on the order of six weeks.

COMMISSIONER BERNTHAL: I would think so, too. So why, for example, then would one not mandate--I'm just asking whether you've looked at this carefully--why would one not mandate, as a minimum, six weeks, as the minimum amount of time that could reasonably be expected to be required for maintenance? That is really what we are talking about.

MR. ROE: I think our approach really accomplishes that.

COMMISSIONER CARR: But Fred, do you think that ought to be six weeks in a stretch? Or six one-week periods? You don't care, do you?

COMMISSIONER BERNTHAL: That is a separate question. I am not sure that matters.

COMMISSIONER CARR: Well, it is not separate because I think what Vic said is they are shut down doing the same

amount of maintenance, whatever the reason they shut down.

MR. STELLO: I think what I said--

COMMISSIONER BERNTHAL: I don't care whether it is cumulative or whether it is broken out.

COMMISSIONER CARR: And they are getting the same amount of time.

MR. ROE: Let me see if I can clarify--

MR. STELLO: Let me answer the question directly. I don't think we ought to specify time. I don't think that's what we're trying to do is specify time, but rather a maintenance activity that is proper. If they can do it in six weeks, fine. If they can do it in four weeks, fine. If it takes them twelve weeks, so be it.

I think the issue is: What is a good maintenance program for the facility? And that is what we ought to be striving for, and however long it takes, in my view, it takes. And if they can be innovative, if they can find ways to do things efficiently, or plan things very well--

COMMISSIONER BERNTHAL: The question is not however long it takes; the question is however short it takes, and whether that should be considered adequate, it seems to me, and you're basically saying it works both ways?

MR. STELLO: I don't mean to pursue the point, but I am more interested in the quality of the maintenance activity, and that that be done correctly.

COMMISSIONER BERNTHAL: That is what we are all interested in.

MR. STELLO: And I think that focusing on time detracts from that. So I would prefer not to, but you have raised the point. I think we ought to think more about it--

COMMISSIONER BERNTHAL: You have not considered this possibility.

MR. STELLO: --we have not thought very carefully about it, and I think the total discussion on the issue has been here at this Commission meeting. But my instincts tell me that what we really want to focus on is a good, solid maintenance program that is implemented, and implemented well, rather than being concerned with trying to decide.

COMMISSIONER BERNTHAL: Well, I don't disagree with that. The point I was trying to make is that this system, whether it is too long or not, there is a minimum reasonable time I think under any circumstance. It seems to be one that has worked extraordinarily well for Japan, and if we are going to get serious about this, it seems to me it behooves us at least to look at what they have done and consider whether something like that should not be a part of this policy. Enough said.

CHAIRMAN ZECH: Commissioner Carr.

COMMISSIONER CARR: The briefing is all right, but can we get into the policy statement itself?

CHAIRMAN ZECH: Go right ahead.

COMMISSIONER CARR: On the front page, why do we call it an "interim policy statement," if it is going to be a policy statement?

MR. ROE: Simply because it would allow public comment and then it is written in final stage after the public has had an opportunity to give their comments, and we want to assure that we start using it right away. That is why we have used the term "interim," sir.

MR. STELLO: What we are asking the Commission to do-

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COMMISSIONER CARR: Is that the way we have to do it?

MR. STELLO: No. You could issue it for comment, and then issue it--

COMMISSIONER CARR: Why can't we just issue it as a policy statement?

MR. STELLO: Right now? Today?

COMMISSIONER CARR: Yes.

MR. STELLO: And make it enforced? You could.

COMMISSIONER CARR: Well, there is nothing to enforce.

MR. STELLO: Well, it is telling the--

MR. SZNIEZEK: It will be in force the day it is issued, but it is interim because we are going to be implementing it while we are going to the public comment stage.

COMMISSIONER BERNTHAL: There is nothing to enforce. I repeat what Commissioner Carr just said.

MR. STELLO: I think it is asking the Commission to speak and, until the Commission agrees, this is what its policy is.

COMMISSIONER CARR: Oh, if it is just interim until we approve it, I can understand that.

MR. STELLO: It is interim because what we are suggesting to the Commission is we want you to agree to tell the industry: This is the Commission's policy. We would like your comments on it. When we get your comments from the public, we may wish to change this--it may be a substantial change; it may not. And then when we make a change, we will issue it and say: This is now the Final Commission Policy Statement on this matter. This is what we always do. It is not unusual.

The reason for saying "interim" is because we are suggesting to the Commission to tell the industry this is our policy.

CHAIRMAN ZECH: You want to make it effective, and you also want to have comments on it.

MR. SZNIEZEK: Yes, sir. That is exactly right.

MR. STELLO: And that is the reason for the "interim."

COMMISSIONER CARR: But all we are telling them is

that they ought to have a maintenance program.

MR. STELLO: That is right.

COMMISSIONER CARR: And that is a good policy. I don't see why it has to be "interim."

MR. STELLO: Well, it has a few more things in it. There are a lot of utilities that are not now doing those things.

COMMISSIONER CARR: Well, look at page 2. I would like--"appropriate to its prescribed function" bothers me. I would like to just put a period after "level" and say "maintain at a proper level." Everybody is going to look at "appropriate to its prescribed function" and read that in a different sense, if you are on the same policy page as I am.

MR. SZNIEZEK: Yes, sir.

COMMISSIONER CARR: That same thing in the last paragraph there.

MR. STELLO: Yes.

COMMISSIONER CARR: Some guys may not think they need that "off-site boiler" there to keep their--they may think the heating is going to come some other way, by sunshine or something. It wasn't put in there to keep the place warm, probably.

On the next page on definitions, I think you need to include "post-repair testing and post-repair records." The whole thing of whether this thing is going to work or not is

whether you are going to have a good machinery history so you can get reliability in the maintenance. We don't want them to be doing maintenance for maintenance sake. We want them to be doing maintenance on the things that require repair, or require being looked at before they break.

So that is equally important to have the records and the post-repair testing in the definition.

MR. ROE: That particular definition in the "for example" section of "repair surveillance" was not meant to be all-inclusive. It was just a list, but we will put those in.

COMMISSIONER CARR: And I was just giving you another idea.

The same on the next page. I think "reliability centered maintenance" belongs in that program for the development and implementation.

On Commissioner Bernthal's point there, the Japanese when I visited them are doing an extensive review now because they keep opening up things in this mandatory period looking at them, that don't require any repair, and putting them back together again, and they've done that time and time again. Now they're thinking, why do we do this?

COMMISSIONER BERNTHAL: That's right.

COMMISSIONER CARR: So I think we need to make sure that doesn't occur.

I am uneasy when you get to the "component, systems,

and structures" list. I was going along great with this policy statement when we were talking about "all systems," and then you say: Well, but we're going to prioritize and make sure that we give more emphasis to those "safety systems."

I, as you know, don't believe you can have two maintenance philosophies. You've either got a good maintenance program and it extends throughout the plant, or you don't have. I would like to delete the list of what they need to maintain and make sure they maintain it all. You've said "all systems."

MR. STELLO: We mean that, too. But I think in fairness--

COMMISSIONER CARR: Well, having said that, why do you say, but "these" are really important?

MR. STELLO: Because we want to tell them we have to be careful of how we're going to allocate resources, and we're going to be emphasizing those things that have the most important safety impact. That's all.

COMMISSIONER CARR: We can emphasize that if we want to. We can tell them to emphasize everything.

MR. ROE: I think that's what it says, sir.

MR. STELLO: We have.

COMMISSIONER CARR: It didn't say that to me.

MR. STELLO: Oh, okay. That's the intent.

MR. SZNIEZEK: We have not relayed the right signal, then.

MR. STELLO: Our intent is to do what you said. They've got to do everything, but we're going to be prioritizing where we've spent a lot of resources, depending on the safety significance.

COMMISSIONER CARR: Yes, but if we find out something in the secondary plant is shutting them down all the time, we'll emphasize that.

MR. STELLO: You bet.

MR. ROE: You bet.

COMMISSIONER CARR: Okay. But they won't get that message from this, because it's not one of the things you listed.

MR. STELLO: Okay. We will fix it.

COMMISSIONER CARR: Now when you say you are going to inspect licensee maintenance programs at "selected sites," what is the criteria for selection?

MR. SZNIEZEK: Let me address that. We didn't want to say "all," because there might be a couple where we've done a safety system functional inspection that looked at maintenance, so we're not going to go back maybe in that two-year period. Like Jack said, it will probably be 75 or 80 percent or so. We just didn't want to commit to all of them, to say that in this document.

COMMISSIONER CARR: So what is the criteria for selection of the 75 percent, then?

MR. ROE: It is more of a deselection. For example, we are going to do a maintenance inspection this coming month at the Perry Nuclear Power Plant, and we will probably not put them in there because we will have already looked at them. We have done some detailed looks at Rancho Seco before restart. We probably will not go back and put them in the particular pool. It is more the ones that--

COMMISSIONER CARR: I am not sure we can afford to do that from a resource standpoint. You realize that they top each other. If you go and look at one plant, pretty soon everybody will call them up and say, what did they look at? It isn't as if they're going to--the word is going to get around on what you're going to go look at when you go look at these maintenance programs.

MR. SZNIEZEK: There is no way, Commissioner, they can prepare for one of our inspections. There is no way that they can prepare. When we go in and look, what we look at from the sampling basis changes. We select different components. At one plant we may look at auxiliary feedwater pumps. In another--

COMMISSIONER CARR: Well, then, you won't get a comprehensive look at any plant.

MR. SZNIEZEK: Oh, yes, we will. You can't look at every component, but you look at their program; you select components, and those component listings can change from plant

to plant.

COMMISSIONER CARR: All the more reason I don't see why you should go to every plant, but that's--if we can afford it, fine; but I am worried about the resources. It is going to take a lot of people.

COMMISSIONER ROGERS: You said 75 to 80 percent, did you not?

MR. STELLO: Yes, in two years.

MR. ROE: In two years.

COMMISSIONER ROGERS: That is a lot of resources.

COMMISSIONER CARR: Well, if I might make a suggestion, I would say we ought to hit those plants that are three in maintenance, first.

MR. ROE: There's no doubt about that.

COMMISSIONER CARR: And then we ought to hit a couple that are willing to see what we can learn. But, you know, the idea that you've got to hit 75 percent of the plants to get a feel for what is going on out there seems to be overkill. But having said that, I will move on.

MR. STELLO: Maybe there is a point that I would like to make, that I think as part of what we do in inspection is not just getting information, but the fact that we go in there--we find out what the weakness and the problems are, and we get the utility to fix them. Our whole idea of going through this cycle is to get the maintenance programs to be improved. And

as part of the inspection, we will find out where the weaknesses are and get them fixed.

COMMISSIONER CARR: Well, that is separate from trying to write a rule, which I thought--

MR. STELLO: Oh, yes.

COMMISSIONER CARR: --I thought the explanation you gave me was we're going out to look at all these plants so we will know what to put in the rule.

MR. ROE: No, that is just a secondary effect.

COMMISSIONER CARR: Maybe I didn't understand what you told me.

MR. STELLO: We want to go out there and do these inspections to make sure that the plants get their maintenance programs fixed.

COMMISSIONER CARR: What maintenance programs?

MR. STELLO: The maintenance that they do at the facilities.

COMMISSIONER CARR: We don't require them to have one.

MR. STELLO: They all are required to perform maintenance.

COMMISSIONER CARR: You're right.

MR. STELLO: This policy is going to tell them that they'd better have a good maintenance program for everything, and we are going to go out and inspect and find out if they've

got that. If they don't, we're going to point out where they don't and they'll have to fix it.

COMMISSIONER CARR: Well, then we ought to just put out a rule saying you'll have a maintenance program, and then we can go in and enforce it. If that is the plan for the inspection, we ought to just do it.

MR. STELLO: Well, if we knew how to write that rule, that is what we would be proposing today.

COMMISSIONER BERNTHAL: Well, it isn't hard to write a rule saying: You shall do a maintenance program.

COMMISSIONER CARR: And then if there is something breaks, we can enforce it. Obviously you didn't maintain it if it broke due to lack of maintenance.

MR. SZNIEZEK: Yes, but look. We can write a rule that says you've got a maintenance program, and they can write garbage out there. We envision a rule that says: Run a maintenance program that encompasses elements. We want to review it and approve it.

Now we can spend two or three years reviewing paper and not get out in the plants and see what they're really doing, to see if there are safety problems. That is why we are sending out teams. Are there safety problems? If there are, how severe? We can take corrective actions when we find problems out there that are impacting safety.

COMMISSIONER CARR: Okay. I don't have any problem

with that. In fact, you led right in to my next question on page 7. "It is envisioned that the regulatory approach embodied in the rule will be to review each licensee maintenance program plan for adequacy." If we don't want to look at paper, why don't we change "program plan" to "results"? So it will read: "To review each licensee's maintenance results for adequacy."

MR. STELLO: I would prefer to put "plan" and "results" both.

COMMISSIONER CARR: Well, all right, but you said you didn't want to go out and just look at a bunch of paper. They could have the plan there.

MR. SZNIEZEK: Right now we want to find out if there are any safety problems in the plants being caused by maintenance. We are going to go out and look at the plants.

COMMISSIONER CARR: I thought we were doing that already.

MR. SZNIEZEK: Well, we haven't done a good job of that.

COMMISSIONER CARR: Well, let's go do that.

MR. SZNIEZEK: That's what we intend to do.

COMMISSIONER CARR: But you don't need this policy statement to do that.

MR. SZNIEZEK: I agree. It is part of the overall push we're taking to beef up maintenance.

COMMISSIONER BERNTHAL: Then why are we sitting here today if we agree on that?

COMMISSIONER CARR: Well, as you can tell, I am interested in maintenance.

[Laughter.]

COMMISSIONER CARR: And I think we do a lousy job of giving those people the impression that we are going to be there looking at what they're doing and how their maintenance program is working. I quit.

CHAIRMAN ZECH: Commissioner Rogers.

COMMISSIONER ROGERS: Well, I was curious as to how many people you expect to have on this interdisciplinary team, and just what this whole thing is going to cost. What are your estimates of the number of people on each team, and roughly what you think on an annual basis this program is going to cost you?

MR. SZNIEZEK: We envision about six to eight people on the team, and on an annual basis it should be about 25 to 30 FTE, which we would take from areas that we don't feel are quite as important as the maintenance area. We're not asking for additional resources. We are reorienting our programs to focus on maintenance over the next two years.

COMMISSIONER ROGERS: Well, what does that translate into in dollars? Do you know?

MR. SZNIEZEK: We're going to do it with our own

staff, primarily, with very little contractors, so we're not talking--

MR. ROE: If we're talking salary and benefits, on the order of $2.5 million.

COMMISSIONER CARR: A six-man team on how many days at a site?

MR. ROE: Seven inspection days.

MR. SZNIEZEK: Seven to eight days, on average.

MR. ROE: On-site, sir.

COMMISSIONER CARR: You won't get done in two years, then.

MR. ROE: We will get it done in two years.

MR. SZNIEZEK: We did a health physics' appraisal program a few years ago in one year with a five- to six-man team. We did every site in the country in one year.

COMMISSIONER BERNTHAL: How many plants did we have, and what was the agency's budget at that time?

MR. SZNIEZEK: A rough answer is about half what we have now.

COMMISSIONER BERNTHAL: Half the plants, and what was the budget?

MR. ROE: The budget at that time, in equivalent dollars is really hard to address because there was such a large research component and such a small research component now to make the correlation.

MR. SZNIEZEK: We had maybe half the plants, but we had more than half the units. We wrote, as I recall, about 60 inspection reports.

COMMISSIONER CARR: Seven days at a site for those?

MR. SZNIEZEK: It was two weeks. We put together a lot of teams and we went out and did it. But that is where we started to turn around the health physics program at these plants, not through additional--

COMMISSIONER CARR: Oh, I am a firm believer in inspection. Don't get me wrong. I think inspection will do 99 percent of the work.

MR. ROE: I agree.

MR. SZNIEZEK: And that is why it is in here, to let people know we are coming out and looking.

COMMISSIONER CARR: Well, I had better rewrite the policy statement to tell them that. Instead of being an assessment team, it is an inspection.

MR. ROE: I agree.

COMMISSIONER BERNTHAL: How many people are going to be on each team, if I may ask?

MR. SZNIEZEK: Six to eight.

MR. ROE: Six to eight.

COMMISSIONER BERNTHAL: So you've got 80 plants you're going to do. You take a week per plant, and you've got 6 to 8 people in the space of 2 years?

MR. ROE: We do it by sites. We don't do it by plants, like Oconee 1, 2, 3.

COMMISSIONER BERNTHAL: A week per site?

MR. SZNIEZEK: Approximately.

COMMISSIONER BERNTHAL: I'm sorry. Go ahead.

COMMISSIONER ROGERS: Well, it will be interesting to see how you've got it worked out to do it in that period of time. I feel a little uncomfortable about that.

But my concern is a little bit along the same lines as Commissioner Carr, that the emphasis seems to be on programs rather than results. I hope that this doesn't look as if somehow or other we are taking the responsibility when it is the licensee that is to take the responsibility.

MR. ROE: Sir, if I could address those two points, the first thing is that specifically the staff's intention is to get away from paper reviews and to look at the performance of these programs in the field.

If we were to use the standard approach, they would submit us a paper plan, we would review a paper plan, we would write them back a request for additional information, they would send us additional information; we would never know whether it was performing at the plant.

We want a balanced view. Obviously there will be a look at the paper when we are out there at the site, but there will also be a look at the performance. There will be a look

at how they conduct maintenance. Actually, maybe even to follow one job. We found some very interesting things when we have gone out there and just said, you are going to do this particular pump seal. The last one that was addressed in the staff meeting in this particular plant was the pump seal. We got ready, set up all the procedures, and unfortunately they hadn't drawn the proper seal from stock. So they had everything ready to go except for they couldn't do the job.

Those are important things to know about the performance of maintenance. That shows a problem with spare parts' management--something that would not be seen in just a paper review. So we expect to have a focus on a broad spectrum of activity so we can get an integrated look.

I do not believe the staff has any intention of releasing the burden of proper maintenance programs from the utilities. As a matter of fact, I hope these maintenance inspections enhance that particular responsibility.

COMMISSIONER ROGERS: It is just that all the time I am concerned that we don't start taking the initiative that really should be the licensee's; that we should be evaluating them and holding them accountable, but I am just concerned about that always, and maintenance is something that they have to do and we will never do. You can look at it, but you won't do it, and they are the ones that have to actually do it.

MR. SZNIEZEK: Our philosophy in maintenance is

another area that has to be directed. The licensee is responsible for the safety of that plant, but we are here to make sure they carry out their responsibilities.

MR. PARLER: Mr. Chairman?

CHAIRMAN ZECH: Yes.

MR. PARLER: That is not only a question of philosophy, but it is a matter, at least in my interpretation, of a statutory requirement. That is really fundamental. It is their responsibility and it always will be their responsibility. This is a regulatory really overview or oversight agency.

CHAIRMAN ZECH: I certainly agree with that.

COMMISSIONER ROGERS: Well, but you can enhance or diminish that sense of responsibility by your posture. What I am saying is I want to make sure our posture is something that reminds the licensee all the time that they have to take the initiative; it isn't because we are coming for an inspection that it is necessary to do something. It is necessary to do it to maintain a safe system.

Therefore, I think that that message should really be in here to a greater degree than I see it in this policy statement. It doesn't really say that, and I think it is something that should be said, and said, and said until it is just automatic.

The other point is that in the feedback area it is a

little detailed, but I don't think there is any sense in here that I picked up that the use will be made of information with respect to maintenance from other sites, and from other plants' experience.

Now I know that that is expected, but somehow the lessons learned seem to be related to the lessons learned at that particular site. It seems to somewhat imply that. It is not necessarily so, but it should be an obligation of course to the licensee to make sure that they are totally informed about any kind of maintenance procedures that evolve from experience elsewhere in the world, and that ought to be part of it.

MR. STELLO: I think that this is an area where we and INPO need to focus on that very hard.

COMMISSIONER ROGERS: Yes.

MR. ROE: We have seen some positive steps taken by INPO in this area. The peer evaluator program, obviously in going to another plant when it is your responsibility back at your particular plant to see how others do it, and the experience is very positive also; there are initiatives in the area of maintenance managers workshops. It is good to provide this type of lessons learned back and forth, and we have seen that it has been fairly effective.

COMMISSIONER ROGERS: And just a comment, that the covering memorandum from Mr. Stello on this policy issue seems to indicate a much greater degree of uncertainty as to whether

a rule will actually be issued or not than the policy statement seems to indicate itself. The thrust of the covering memorandum says that there will be a two-year period to evaluate the effectiveness, and to decide whether a maintenance rule is required, and if so what form the rule should take; whereas this policy statement simply says, as I read it, that we are going to get started on writing that rule, period. It really doesn't say that there is an uncertainty as to whether that rule will ultimately be put into effect.

So I would read the covering memorandum from Mr. Stello as a much weaker commitment to put in place a rule than the interim policy statement would indicate. And of course it is the interim policy statement which will become the public document. So that I think we should be clear on where we stand on that, because I would read your covering memorandum to indicate that, well, we're going to test this idea of a rule by putting this policy statement out and consider it, and at the end of the evaluation period the NRC will decide whether a maintenance rule is required and, if so, what form the rule should take.

Whereas, I would say in reading the interim policy statement it seems much more of a firm commitment to put the rule into place; it's just that we don't know how to write it now. So there is a difference in emphasis there, and I think we should be clear on how we are proceeding.

I would say that there may be a little uncertainty here as to just where we do stand on this. Are we ready to go for a rule, and we need two years to on how to write it? Or are we really genuinely uncertain as to whether a rule is the best way to go or not?

MR. STELLO: We intend to provide to the Commission the first step in that process, which is an advance notice, in March and that will make it clear to everyone that it is the Commission's intent to go forward on rulemaking in this area.

Now whether at the end of that process the Commission decides to issue a rule or not, it is the Commission's decision. We are going to initiate a process that will lead us down the rulemaking path.

COMMISSIONER CARR: I have a little problem with the criteria for evaluation, that you're going to decide whether it is good or not, you know, because they don't know what the criteria is and neither do I on how you are going to say whether they've got a good maintenance program or not. You have got some criteria in mind?

MR. STELLO: I think at the end of a week, with seven or eight people, I would expect that you ought to be able to get from them a fairly good judgment of, is the maintenance at that facility good, bad, or indifferent, and if it has weaknesses, what are those weaknesses, and what needs to be fixed to make it okay.

COMMISSIONER CARR: Is that going to help me make the rule, then?

MR. STELLO: Well, I think it tells you all of the things that you might want to consider if you try to write a proscriptive rule for developing a plan. I am not sure that that is the way to go, but I think it would, yes, give you the kinds of things that would be very detailed and prescriptive that need to be in the plan. It could get as prescriptive as to say you shall do testing, tear down, overhaul every X. There are maintenance rules that are that specific.

COMMISSIONER CARR: Right, and as broad as "you shall keep it running."

MR. STELLO: Right, which maybe it ought to be. I don't know.

COMMISSIONER ROGERS: Well, this comes back to another question I had, which is where do you stand on the concept of performance indicators for maintenance. Is that part of your thinking here on program evaluation, to try to develop performance indicators?

MR. STELLO: The Commission has directed that the staff look at developing a suitable performance indicator. I just asked Mr. Jordan. Our schedule for that is to try to have something proposed by February.

COMMISSIONER ROGERS: On maintenance?

MR. STELLO: The Commission has already directed us.

COMMISSIONER BERNTHAL: Yes. If I may interject on that point, one of the comments which I don't guess the majority supported, but one of the things which I had wondered prior to the staff "developing suitable performance indicators," one of the things I had hoped they would do is feed back to the Commission at some interim point what in your judgment could be considered suitable performance indicators. That is not proceeding on the presumption that there are suitable performance indicators, because I have no doubt that if the Commission tells you to find some, you will come back with some; but rather to indicate to us what you might think would be such indicators.

I don't want to interrupt Commissioner Rogers here, but perhaps before the end of this meeting we could get an interim report, if Mr. Jordan or someone has a few words on that subject.

MR. STELLO: If the Commission desires, Mr. Jordan is here and can ad lib the status of that.

COMMISSIONER ROGERS: I would be interested in hearing that.

COMMISSIONER BERNTHAL: Yes. I think it relates very much to this question of program evaluation and how you are going to be looking at evaluating programs, and on what kind of a basis. Performance indicators is coming to grips with that question. Trying to develop performance indicators is

certainly the first step towards being able to evaluate a program, in my opinion.

CHAIRMAN ZECH: Let's ask Mr. Jordan to step up to the microphone and give us a very brief status report. Would you, please.

MR. JORDAN: Yes, sir. Ed Jordan at EOD.

The performance indicator that we have found to be most practical at this time for maintenance is a cause Code across the existing performance indicators that would include maintenance as one of the causes. Jack Roe alluded to that by saying that in identifying some of the plants with poor maintenance, the cause of significant events for instance was maintenance in many cases. So when we look at scrams, significant events, safety system failures, those kinds of existing performance indicators with a cause code and we find a particular plant that has maintenance as a cause predominant over the other causes, then we have a case to say that there is perhaps a problem with maintenance at that plant.

So the staff has collected a great deal of data. We do expect to come to the Commission in late February or March with a proposal for that kind of an indicator.

CHAIRMAN ZECH: All right. Thank you, very much.

Anything else, Commissioner Rogers?

COMMISSIONER ROGERS: No. That's all.

CHAIRMAN ZECH: Just let me make a couple of

comments, and maybe a couple of questions, and perhaps my fellow Commissioners will have other comments or questions on this very important issue.

First of all on criteria, it seems to me that although this has been mentioned at the meeting, before you go out on your first inspection that you really ought to have a criteria developed so that you will have some kind of a standard to go on. I am aware of the fact that INPO has been involved in maintenance programs and evaluations and assessments, and they use what they call "guidelines." It seems to me that we need what I would term "criteria" so that your people going out really have a good idea what to look for.

It also leads me to the concern about qualified inspectors and team members. We are taking on a rather focused area. I would hope that we would have people that have credibility and maintenance background so that we can be confident that their assessment is a proper one.

Are we going to do any specific training? Could you speak for just a few minutes on the type of people we intend to send out, and perhaps their background?

MR. ROE: Sir, I can address two of the comments you have made so far. The staff understands the need for a criteria and an assessment or inspection plan. We have one under development now. It is going to take a logical approach. There will be specific types of worksheets and logic flow

diagrams so that we are able to cover the areas in the sampling basis that we think is important and things that show relevant in one area to be sure that we follow up if there is a relationship to another.

With respect to qualified individuals, based on our knowledge of the capabilities of the Headquarters staff and the region-based staff, we believe that we have sufficient numbers of qualified people to carry out the program. We do intend to provide them training on the program on what we expect to be looked at, and how we expect to find these to be sent back in to us, sir.

CHAIRMAN ZECH: I would suggest that you might want to look at the regions, and perhaps the residents. We have a lot of talent out there, too, and I am sure we have some of our people in those areas that could be really helpful, and you might want to put them with your teams if they have a certain expertise that you feel is valuable.

It also might be worthwhile to use the peer approach. I wouldn't see anything wrong with getting an expert to go with you from perhaps outside our agency that would be able to provide expertise that might be valuable.

In other words, my view is that we need the criteria. We need competent, credible inspectors; and it also concerns me that we are only going to make a single visit. I recognize there are tremendous resources involved in this really, and I

appreciate the fact that you are going to refocus resources, and I don't think we can do it any other way. But this is a big commitment, and with only making one visit to the site I guess my concern would be that the first few visits I'm sure you're going to learn a lot. But with only one visit to the site, it is going to perhaps be a challenge to make sure that we can be confident of our own evaluation and our own assessment, especially on those first few visits.

So I would ask that you go into perhaps some special planning, or even your own training period, before you launch off on this very significant effort.

MR. ROE: I agree with you. I think that one of the benefits that we have at this time in the maintenance team that is going to carry out this program from the Headquarters is the branch chief that will be in place when we carry out this program has extensive regional experience, including being a member of the Performance Appraisal Team.

The two section chiefs that I have involved in this particular area, one of them that is principally involved has had experience in a multitude of these particular assessments already. The other one that I have that provides us expertise and assistance was a senior resident inspector and has a strong background not only in operations but in construction, so he understands a great deal about the codes and requirements of maintenance from that aspect.

So we believe that we have strength there. But certainly we will heed your words and make sure that we provide the training that is necessary to do a competent job.

CHAIRMAN ZECH: Just a word on maintenance performance indicators. It is my understanding that we have a program--you can call it a performance indicator program I think--that is going to affect a lot of data, anyway, that we have been collecting for many years. It seems to me that perhaps that is being used in your attempt to come up with a performance indicator for maintenance.

But isn't it true that we do have a considerable amount of data that we have available to us maybe over a five-year period that could give you at least some kind of a benchmark for establishing criteria for maintenance? Is that true? That is my understanding, but I would appreciate your educating me if that's not correct.

MR. ROE: There is a fairly reasonable basis of information. One of the shortcomings is that a lot of the reporting requirements the Commission has does not take a look at the balance of plant and other important systems, and that is extremely important to the staff now.

In the policy statement, in our approach, we have told you that we believe that maintenance has got to be carried out for all the systems.

CHAIRMAN ZECH: Well, but isn't it true that the

NPRDS system--

MR. STELLO: Oh, yes. Yes.

MR. ROE: Yes.

CHAIRMAN ZECH: --that INPO has, we have all that information at the Commission available to us?

MR. STELLO: Yes.

CHAIRMAN ZECH: Do we not?

MR. STELLO: Yes. Absolutely.

CHAIRMAN ZECH: So that is a tremendous amount of bank, I would believe, of relevant information.

MR. STELLO: And I think in addition you have a rather significant summary of overall maintenance in the SALP reports over the years. While they did focus on particular aspects, they nevertheless are also an indicator. But the NPRDS detailed component failure is available.

CHAIRMAN ZECH: All I am saying is that when you are setting up really a very aggressive and new program like this, we want to get together and use as much available data as we can.

MR. STELLO: Yes.

CHAIRMAN ZECH: My concern is that you have credible people, that you have criteria, that you really start out on this adventure with a fair amount of confidence and background that you can make a good assessment because an awful lot of resources are involved in this, and we want to make sure that

we accomplish something. As we discussed earlier, it is results we are looking for, and we are looking for improvement.

My view is that there is room for improvement in maintenance, and in some plants there is room for a lot of improvement. Generally speaking at least, to some degree there is room for improvement in almost all of them.

So I certainly commend the program. I do think that we probably want to move, my view is, eventually toward a rule. That is certainly what I have in mind. But I think that we must walk before we can run here because it is the utility responsibility for safety of operation, as well as for maintenance, and we are the regulator and not the operator. That has been pointed out earlier, and I think we must continue to be mindful of that.

On the other hand, if we are going to regulate safety properly, maintenance is an area that I think is important that we get into in a vigorous sort of way.

Well, let me just ask--

COMMISSIONER ROGERS: Excuse me, Mr. Chairman.

CHAIRMAN ZECH: Yes. Go ahead.

COMMISSIONER ROGERS: If I could just follow up on a point that I think you opened there, and I think it is a very interesting one that hadn't occurred to me.

CHAIRMAN ZECH: Please.

COMMISSIONER ROGERS: That is, that we are committing

considerable resources to this effort, this inspection effort. It may very well be that we might decide that this should be a continuing activity of the Commission; that it is not just to write the rule, but it is the way things ought to be done in the future. And that might or might not be the case, but I think we should anticipate that as a distinct possibility.

It seems to me that we are changing the situation, perhaps in a very significant way in terms of commitment of resources and our expectations from that commitment, and I think we ought to have something we can measure. I think that some thought should go into--it probably has already--but trying to start off with a base here that we know where we are, and then as a result of this program and whatever resources we are committing to it, some results should be apparent. They won't be apparent immediately. They will be apparent particularly if this performance indicator that Mr. Jordan spoke about is the best one, then that is a delayed reaction indicator. You are not going to see a big change in those numbers immediately, even if you have a big change in maintenance, or you might not.

So I would say that it will take several years before that indicator is one that is going to really give you definitive numbers that you really feel that this thing really has made a difference. So I think that it is important to think of this as not only a program to accomplish something,

but also in a sense an experiment that should yield us some data as to what our investment here produced.

So you want to start off with some kind of a common base of data that then you will start to compare to three, four, five years down the road. I think it is very important at the outset to give some thought to designing this program not only in terms of what you hope to accomplish, but how you are going to measure what you think might take place.

So from the standpoint of experimental design, I would say I would encourage you to give some thought at the very beginning that when you start this clock going, these inspections and results and so on and so forth, that three, four, five years later whenever it is appropriate to make a comprehensive measurement, you can go back and look at the situation that you started with, the situation you wound up with, and try to see whether in some sense this program really did accomplish something in a very measurable way.

Now that is always going to be hard because you are dealing with very complex system, and a lot of other things are changing, kind of isolate the variables and so on and so forth to the degree that you would like, but as much as possible I would encourage you to design the measures of performance of this program, this new program, at the very outset.

CHAIRMAN ZECH: And that is exactly what I had in mind, too, and I thank you, Commissioner Rogers, for those

comments. Because when I am thinking of criteria to start with, and so forth, as Commissioner Rogers pointed out, too, another way to say that might be to start with a benchmark so we can measure it, so we can measure performance and results.

So I think the criteria should be very well thought out and be considered kind of a benchmark to start with so that we can measure progress as we go along. In other words, I think we should try to make this as professional, thoroughly credible ambitious program that it is, but credible and professionally recognized as something that really can be measured to the extent that you can measure these difficult areas.

But also I think it has the opportunity, the possibility, of even going perhaps beyond the maintenance and can allow us to be aware, for example, of the problems we mentioned earlier of conditions that might cause the plant to shut down, or whatever.

For example, we really should be thinking about is it really right to continue to run surveillance and testing while the plant is operating, to the extent that we do? Are there maintenance that we allow and encourage now when the plant is operating, even at 100 percent power, that we really should change that policy?

My view is that we do an awful lot of tinkering with plant, well meaning though it might be, in testing,

surveillance, and maintenance while the plant is operating that causes problems, as you've mentioned earlier in the briefing. So in other words, it is not just maintenance, although we are focusing on that. But I would hope that perhaps we could step back as we look at these programs and measure from the benchmark up, measure what has happened in results of plant operations, of course always focusing on safety because that is our business.

But it seems to me that this does have the potential for making our regulatory responsibilities--for improving our regulatory responsibilities, and at the same time contributing to safer operations. At the same time, hopefully, making the plants operate more reliably and more efficiently.

But I do think that this is a very important endeavor. I recognize that my personal view is we are coming to this emphasis on maintenance awfully late in the game, but better late than never, and I commend the staff for the efforts you have made so far.

I would ask my fellow Commissioners, too. We have had some specific comments to make on the policy. We have the policy statement. I would respectfully ask their input as promptly as they can give it to us so we can correlate comments they may have and get back to the staff soon with our own decision on the policy statement.

I know my other Commissioners may have other

questions. Commissioner Bernthal, you indicated you had.

COMMISSIONER BERNTHAL: I had only the performance indicator one. I think we have beat that up pretty well now. I would say one thing. I am encouraged by the apparent early-on thing that you plan to do--that is, to tag events and label clearly those that are maintenance-related. In fact, I think all of our performance indicators really are a focus on data we already had and just weren't compiling and tabulating and using them statistically perhaps in the way that we could have been, and I think this is a good start, subject of course to the reservation that Commissioner Rogers mentioned.

One quick question. Was the policy statement proposal run by the ACRS. Have they looked at it, yet?

MR. ROE: It hasn't been proposed to them yet.

COMMISSIONER BERNTHAL: When are we going to do that? Shouldn't they look at it?

MR. STELLO: The proposal was that they would look at it as part of the comment period.

MR. ROE: As part of the comment period, and if my memory serves me it is about the 11th or 12th of February where we are going to brief them.

COMMISSIONER BERNTHAL: Do we have a comment over here?

MR. ZWOLINSKI: Jack is correct.

COMMISSIONER BERNTHAL: All right. Well, a minor

point, I guess I am not sure that it has been normal practice that the ACRS is considered as part of the public comment period. I would think that they would normally look at these things perhaps in tandem with the Commission looking at them, if not before the Commission looks at them.

In any case, I would like to have the ACRS comments on the policy statement proposal at it stands right now and any subsequent policy statement draft. I think that is important.

MR. STELLO: Well, you understand that it will probably be several months before we will be able to issue anything, even a policy statement.

CHAIRMAN ZECH: The point is, if we do that, and I think it is appropriate that we do that, should we wait for those comments before we execute the interim policy statement. Maybe that is a decision the Commission should consider while the we're looking over the statement itself.

I think definitely we want the ACRS' comments. I guess the point is, is it better to get them before we issue the initial statement, or get them during the comment period as we go along. So why don't my fellow Commissioners consider that kind of a decision here in the next few days as we are looking over the comments, at the same time we look at the statement itself.

Are there any other comments from anybody?

COMMISSIONER CARR: Well, I would like to say one

thing about that. There are some utilities out there who are doing an excellent job of maintenance and it is not all bad. They have all got a program of some sort. I think they are all beginning to realize it is important to do it, and what we are trying to do is encourage them. But I think it is important that we be on record. As I say, what it is going to do is cost them money, but in the long run they're going to get it back.

CHAIRMAN ZECH: Any other comments?

COMMISSIONER BERNTHAL: Well, again I want to stress that I would hope and expect to see a serious look at the Japanese system, being as it is probably the most successful maintenance system in the world for a program of its size.

CHAIRMAN ZECH: All right.

Let me just conclude, then, by thanking the staff for a very excellent presentation, and also to just emphasize that there is, at least in my view and I think my fellow Commissioners would agree with me fully, that there is a clear and direct relationship between maintenance and plant safety, and we should look at our regulatory framework to see whether and where we can improve this.

Certainly we recognize that maintenance is a utility responsibility, but safety is our business. And if it does have a direct application to safety, that is why we are concerned.

Let me just say again, I would ask my fellow

Commissioners to take whatever actions they can on the policy statement so that we can come back to the staff promptly. I think this is a very important program that we should move on as quickly as we feel confident that we can.

If there are no other comments, we stand adjourned.

[Whereupon, at 3:35 p.m., the Commissioners meeting was adjourned.]

REPORTER'S CERTIFICATE

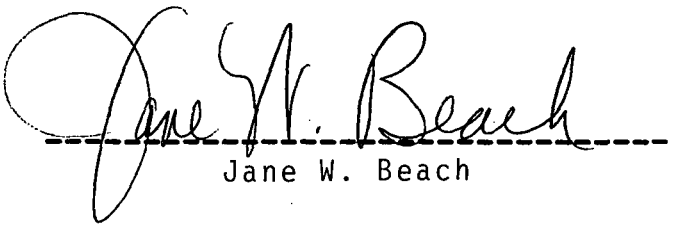
This is to certify that the attached events of a meeting of the U.S. Nuclear Regulatory Commission entitled:

TITLE OF MEETING: Briefing on Status of Maintenance Program and Policy Statement/Advanced Notice of Proposed Rulemaking

PLACE OF MEETING: Washington, D.C.

DATE OF MEETING: Thursday, January 7, 1988

were held as herein appears, and that this is the original transcript thereof for the file of the Commission taken stenographically by me, thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing events.



Jane W. Beach

Ann Riley & Associates, Ltd.

MAINTENANCE POLICY STATEMENT
COMMISSION MEETING
JANUARY 7, 1987

BACKGROUND

- INDUSTRY INITIATIVES ARE BEING IMPLEMENTED
- WIDE VARIATION IN EFFECTIVENESS
- NEEDED MAINTENANCE NOT BEING ACCOMPLISHED OR NOT PERFORMED EFFECTIVELY AT SOME PLANTS
- HIGH PERCENTAGE OF FAILURES FROM IMPROPER PERFORMANCE OF MAINTENANCE
- MAINTENANCE/OPERATIONS INTERFACE INADEQUATE
- MAINTENANCE-RELATED CHALLENGES TO SAFETY SYSTEMS IS EXCESSIVE

CONTENT OF THE POLICY STATEMENT

SUMMARY

POLICY

- BACKGROUND
- POLICY STATEMENT

ADDITIONAL INFORMATION

- DEFINITION OF MAINTENANCE
- FRAMEWORK FOR MAINTENANCE PROGRAMS
- COMPONENTS, SYSTEMS AND STRUCTURES
- NRC ASSESSMENT ACTIVITIES

ENFORCEMENT

POLICY

POLICY STATEMENT

ALL COMPONENTS, SYSTEMS, STRUCTURES

-- AVAILABLE TO PERFORM INTENDED FUNCTION

-- PROMPTLY REPAIRED

PRESCRIBED MAINTENANCE PROGRAM

ADDITIONAL INFORMATION

DEFINITION OF MAINTENANCE

- AGGREGATE OF FUNCTIONS TO ASSURE SAFETY AND RELIABILITY
- INCLUDES SUPPORTING FUNCTIONS

FRAMEWORK

- ESTABLISH PROGRAM OBJECTIVES
- DEVELOP AND IMPLEMENT PROGRAM
- PROGRAM EVALUATION
- FEEDBACK

COMPONENTS, SYSTEMS AND STRUCTURES

- MAINTENANCE PROGRAM FOR ALL COMPONENTS, SYSTEMS AND STRUCTURES
- COMMENSURATE WITH ITS FUNCTION
- NRC FOCUS PRIMARY ATTENTION ON LISTED ITEMS

NRC PLANT ASSESSMENT

- EXISTENCE/DEVELOPMENT OF MAINTENANCE PROGRAM PLANT
  - FOUR ELEMENTS

- SPECIFIC AREAS OF REVIEW
  - MANAGEMENT COMMITMENT
  - WORK CONTROL (E.G., PLANNING AND SCHEDULING, BACKLOG, WORK CLOSE-OUT)
  - FACILITIES AND EQUIPMENT (E.G., SPARE PARTS, TOOLS, PLANT MATERIAL CONDITION)
  - PERSONNEL (E.G., TRAINING, STAFFING, PERSONNEL PERFORMANCE)
  - TECHNICAL SUPPORT/INTERFACES

POLICY ISSUE
(Notation Vote)

December 30, 1987 SECY-87-314

For: The Commissioners

From: Victor Stello, Jr.
Executive Director for Operations

Subject: INTERIM POLICY STATEMENT ON MAINTENANCE OF NUCLEAR POWER PLANTS

Purpose: To provide the Commission with an Interim Policy Statement on Maintenance (Enclosure).

Background: Since 1985, when the NRC Maintenance and Surveillance Program Plan was developed, the staff has provided the Commission with several reports and briefings to describe the status of maintenance in the U.S. nuclear industry. The staff's findings presented in these communications clearly established the relationship between maintenance and plant safety. In April 1987, the Commission directed the staff to develop a Policy Statement to formalize the Commission's position on maintenance.

Discussion: The Policy Statement on Maintenance (1) defines maintenance in a comprehensive manner; (2) describes a framework for effective maintenance programs; (3) states the Commission's position on structures, systems, and components to be included in maintenance programs; (4) specifies future NRC action, and (5) recognizes industry initiatives.

The Policy Statement has been developed, in part, to assure that various rules, regulations and requirements are fully integrated within each utility's organization. The underlying philosophy of the proposed Policy Statement is that corrective, preventive and predictive maintenance should be conducted on all plant equipment.

CONTACT: John P. Jankovich, NRR
49-24892

The Interim Policy Statement specifies a two-year period to evaluate the effectiveness of industry initiatives. The staff will conduct team inspections at selected sites over the next two years, commencing in Spring 1988. At the end of the evaluation period the NRC will decide whether a maintenance rule is required and, if so, what form the rule should take.

To prepare for that decision, the staff will develop an Advance Notice of Proposed Rulemaking (ANPR) and develop a proposed rule during the evaluation period. The ANPR will recognize the variability of designs and vendor components and systems, and emphasize the importance of developing a comprehensive maintenance program plan. Each licensee is envisioned to have a maintenance program plan which accounts for plant-specific differences in designs, vendors, and maintenance practices. It is expected that the regulatory framework for the ANPR will include a review of the individual licensee maintenance program plans similarly to those utilized in other regulated industries or other countries (e.g., the maintenance programs of the airline industry in the United States or nuclear power industry in Japan).

During this trial period, the NRC will continue to take action to ensure that existing regulatory requirements are met.

Resources: NRC will carry out team inspections at selected licensed facilities to assess industry progress. Resources for the team inspections will be reprogrammed from existing NRR programs.

Recommendation: That the Commission approve the Interim Policy Statement on Maintenance and note that it will be published in the Federal Register with a comment period of 60 days.

Schedule: Recommend affirmation at an open meeting.

Victor Stello, Jr.
Executive Director
for Operations

Enclosure:
NRC Interim Commission Policy Statement on
Maintenance of Nuclear Power Plants

Commissioners' comments or consent should be provided directly to the Office of the Secretary by c.o.b. Friday, January 15, 1988.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Friday, January 8, 1988, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

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ENCLOSURE

[7590-01]

NUCLEAR REGULATORY COMMISSION

INTERIM COMMISSION POLICY STATEMENT ON MAINTENANCE OF NUCLEAR POWER PLANTS

AGENCY: Nuclear Regulatory Commission.

ACTION: Interim policy statement.

SUMMARY: This interim policy statement is to inform the industry of the expectations of the Commission regarding the maintenance of nuclear power plants. With this interim policy statement, the Commission intends to emphasize the importance of maintenance in nuclear safety and to evaluate the industry initiatives underway to upgrade maintenance programs during a two-year evaluation period.

EFFECTIVE DATE: This interim policy statement is effective upon publication in the Federal Register. However, the public is invited to submit comments by _____. On the basis of the submitted comments, the Commission will determine whether to modify this interim policy statement.

FOR FURTHER INFORMATION CONTACT: Jack W. Roe, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555, telephone (301) 492-4803.

SUPPLEMENTARY INFORMATION:

POLICY

Background

The Commission has a program to evaluate continually the operational performance of nuclear power plants. Analysis of operational events has shown that, in many cases, nuclear power plant equipment is not being maintained at a level appropriate to its prescribed function. A limited examination of nuclear power plant maintenance programs has found a wide variation in the effectiveness of these programs. Inadequate maintenance at some plants has been a significant contributor to plant reliability problems and, hence, is of safety concern. It is for this reason that this policy statement is being issued.

Policy Statement

It is the objective of the Commission that all components, systems and structures of nuclear power plants be maintained so that they are available to perform their intended functions. In order to accomplish this objective, each licensee should develop and implement a maintenance program which includes repair, surveillance, diagnostic examinations and preventive measures and which provides for the availability and prompt repair of plant components, systems and structures appropriate to their prescribed function.

ADDITIONAL INFORMATION:

Definition of Maintenance

The Commission defines maintenance as the aggregate of those functions aimed at preserving or restoring safety, reliability, and availability of plant structures, systems, and components. As such, maintenance includes not only activities traditionally associated with identifying and correcting actual or potential degraded conditions, i.e., repair, surveillance, diagnostic examinations, and preventive measures; but extends to include all supporting functions for the conduct of these activities. For example, each of the following supporting functions has an integral role in maintenance: engineering analyses and technical support; organization; planning, scheduling, and work control; reporting, trending, and analysis activities; staffing and qualifications for mechanical, electrical, electronic, instrumentation and control, and chemistry functions; supervisory control; parts and tool management; interface with operations, review groups, and similar activities; and radiation exposure control.

Framework for Maintenance Programs

Each commercial nuclear power plant should develop and implement a well-defined and effective program to assure that maintenance activities are conducted to preserve or restore the availability and reliability of plant structures, systems and components. Although licensees are organized and

managed in different ways, the following elements have broad applicability in any framework for an effective maintenance program:

1. Establish program objectives. It is important to analyze plant maintenance requirements including technical, management and organization needs and establish maintenance program objectives. The objectives should include those requirements necessary to ensure that all plant components, systems and structures are maintained so that they are available to perform their intended functions.

2. Develop and implement program. The maintenance program should accomplish the objectives. An adequate program should consider: technology in the areas of corrective maintenance, preventive maintenance, predictive maintenance and surveillance; engineering support and plant modifications; quality assurance; equipment history and trending; management of parts, tools and facilities; procedures; post-maintenance testing and return-to-service activities; maintenance management and organization in the areas of planning, scheduling, shift coverage, and resource allocation; quality control; radiological exposure control; staffing, qualification and training; interface with plant operations; and interface with plant and corporate management. Maintenance recommendations or requirements of individual vendors must receive appropriate attention in the development of the maintenance program.

3. Program evaluation. Licensees should develop methods and criteria to evaluate the effectiveness of maintenance activities on a periodic basis to assure that the objectives are being met.

4. Feedback. Evaluation results should be fed back into the program objectives and the maintenance program to assure that lessons are learned and shortcomings are corrected.

Components, Systems and Structures

Maintenance programs should encompass all plant components, systems and structures. However, the Commission's position is that priority attention should be devoted to components, systems or structures commensurate with their importance to safety. Although the Commission expects maintenance programs to cover all aspects of plant operations, the Commission will focus primary attention to those items..

(a) Relied upon to remain functional during and following design basis events to ensure:

(1) The integrity of the reactor coolant pressure boundary;
(2) The capability to shut down the reactor and maintain it in a safe shut down condition; or
(3) The capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to the 10 CFR Part 100 guidelines;

(b) Whose failure could lead to:

(1) A reactor scram, or

(2) A transient, or

(3) A condition outside the design basis of the plant, or

(4) Being in an unanalyzed condition that compromises safety, or

(5) An uncontrolled release of radioactive material;

(c) Utilized in emergency operating procedures;

(d) Utilized in monitoring the status of reactor parameters;

(e) Utilized in fire protection;

(f) Utilized in the prevention or monitoring of radiation exposure; and

(g) Utilized in plant security.

NRC Activities

In order to monitor industry progress in meeting the expectations of this policy statement, the NRC staff will conduct assessment efforts. During the two-year evaluation period, the NRC assessment efforts will include:

(a) Direct inspections and assessments of licensee maintenance programs at selected sites.

(b) Review of the licensee's use of the Nuclear Plant Reliability Data System (NPRDS) reporting program and related activities concerning trending and analysis of failure data.

(c) Review of the INPO plant and corporate evaluation programs and evaluation reports in the area of maintenance.

During the two-year assessment period, the Commission intends to issue an Advance Notice of Proposed Rulemaking and develop a draft rule on maintenance. It is envisioned that the regulatory approach embodied in the rule will be to review each licensee maintenance program plan for adequacy. This approach is expected to be similar to those existing in other regulated industries (e.g., maintenance programs of the U.S. airline industry) or in other countries (e.g., the nuclear power industry in Japan).

Industry Activities

The Commission recognizes that the industry has made progress in developing and implementing programs intended to improve nuclear power plant maintenance. The Commission realizes the importance of these initiatives and wishes to encourage further self-improvement, including the development of consensus standards.

Enforcement

Nothing in this policy statement shall limit the authority of the NRC to conduct inspections or to take appropriate enforcement action when regulatory requirements are not met.

Dated at Washington, DC, this ____ day of _____, 1988.

For the Nuclear Regulatory Commission.

Samuel J. Chilk,

Secretary of the Commission