

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

**Title: BRIEFING ON PROPOSED RULE ON SAFETY
 EQUIPMENT RELIABILITY DATA - PUBLIC
 MEETING**

Location: Rockville, Maryland

Date: Wednesday, April 26, 1995

Pages: 1 - 42

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7 EQUIPMENT RELIABILITY DATA - PUBLIC MEETING
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10 Nuclear Regulatory Commission
11 One White Flint North
12 Rockville, Maryland
13

14 Wednesday, April 26, 1995
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17 The Commission met in open session, pursuant to
18 notice, at 10:00 a.m., Ivan Selin, Chairman, presiding.
19

20 COMMISSIONERS PRESENT:
21

22 IVAN SELIN, Chairman of the Commission
23 KENNETH C. ROGERS, Commissioner
24 E. GAIL de PLANQUE, Commissioner
25

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1 STAFF SEATED AT THE COMMISSION TABLE:

2

3 JOHN HOYLE, Secretary of the Commission

4 KAREN CYR, General Counsel

5 JAMES TAYLOR, Executive Director for Operations

6 EDWARD JORDAN, Director, AEOD

7 ASHOK THADANI, Associate Director for Inspection and

8 Technical Assessment, NRR

9 PATRICK BARANOWSKY, Chief, Reliability and Risk Assessment

10 Branch, AEOD

11 JOSEPH MURPHY, Special Assistant, RES

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P R O C E E D I N G S

[10:00 a.m.]

CHAIRMAN SELIN: Good morning, ladies and gentlemen.

Before we start our meeting this morning, we along with most of the federal government will observe a minute of silence with respect to the victims of the Oklahoma City bombing.

Thank you.

We are pleased to be here to welcome the staff to brief the Commission on the proposed data rule for equipment reliability. It's very clear that both in the broad sense of providing the advantages of risk-based regulation and in a narrow sense supporting the maintenance rule that good equipment reliability data are needed. So, as I mentioned during last week's IPE briefing, the industry should be taking the initiative in determining the next phase of how PRAs will be used and what's needed to support them. But on the very specific grounds, we have a rule that we believe in. There's no question that all would have been served if the rule and the regulatory framework behind it had all been done at the same time, but it wasn't. So, we're at the point of trying to determine what data are needed and what should the quality of the data be and what should the level of detail be, what will be voluntary and what will be

1 required and how will the data be treated from the public
2 point of view at this point. So, we stand now ready to fill
3 in this gap. The rule must be justified specifically in the
4 basis of the maintenance rule because that's the narrow
5 objective of the proposed rule. Whatever ancillary benefits
6 that would be gained from a broader move to PRA work would
7 be taken as a bonus, but not part of the basic justification
8 of the rule.

9 So, we look forward this morning both to the
10 specific discussions of what kind of data would be
11 collected, how would they be collected, how would they be
12 used, and the broader question of why is this rule needed
13 and why is this the level of detail which the rule should be
14 done.

15 Commissioners?

16 Mr. Taylor?

17 MR. TAYLOR: Good morning.

18 The staff developed this rule in support of the
19 transition towards a more risk and performance-based
20 regulatory program. As we discussed with the Commission in
21 August of last year, the need for plant-specific safety
22 equipment and reliability data is an important element of
23 the staff's probabilistic risk analysis program plan.

24 The staff has expedited development of this rule.
25 The development was led by AEOD, supported by NRR, Research

1 and OGC under the revised rulemaking procedures. The
2 interest and support of NRR and Research in this rulemaking
3 is evidenced by Ashok Thadani and Mr. Murphy's participation
4 here today.

5 The rulemaking was initiated after several years
6 of discussion with industry to obtain plant-specific safety
7 equipment reliability data on a voluntary basis. That was
8 not successful.

9 Mr. Jordan will continue.

10 CHAIRMAN SELIN: Before you go on, I'd just like
11 to make sure that this basic question gets addressed.
12 There's not a health and safety basis to go to performance
13 and PRA-based regulation. We are satisfied that plants are
14 safe today as they are. So, if the only objective of the
15 rule would be to support going to a performance-based
16 regulation, it would be a difficult case to make that this
17 rule should be mandatory.

18 On the other hand, we do have a maintenance rule.
19 We are convinced that the maintenance rule is an essential
20 part of maintaining health, helpful and safe operation of
21 the plants. Insofar as we're collecting the data that are
22 required to make the maintenance rule go, there is a basis
23 for a mandatory as opposed to a voluntary --

24 MR. TAYLOR: We agree with that connection.

25 CHAIRMAN SELIN: So, in the discussion -- quite

1 frankly, that's the weakest part of the document that came
2 out, was this broad justification as opposed to given that
3 we're going to do something, what should we do? So, in the
4 discussion, please be sure to address this point and how
5 this will be addressed, since from the Commission's point of
6 view that's perhaps the key question that we have to answer.

7 MR. JORDAN: Okay. In addition to the principal
8 speaker, Pat Baranowsky, we have behind me Steve Mays who is
9 the section chief who coordinated and managed the
10 development, Dennis Allison, who was directly responsible
11 for the words, assisted by Bennett Brady. So, they're
12 available to respond to any specific questions that Pat and
13 I and others can't answer.

14 Could I have the first slide, please?

15 [Slide.]

16 MR. JORDAN: On the first slide we have a summary
17 of the areas that we plan to cover during the presentation.
18 The staff did recognize the need for reliability and
19 availability data over three years ago and it was in
20 association with the maintenance rule that that recognition
21 came about. This was to support the reliability side of the
22 evaluation.

23 In interactions with industry to obtain data on a
24 voluntary basis, the staff has refined the data elements and
25 identified the applications for the NRC and the industry

1 through the use of this data. I believe that this proposed
2 rule represents a necessary investment by NRC and industry
3 to support and provide real data regarding equipment
4 reliability. We will discuss example systems which are a
5 subset of the safety-related systems within the purview of
6 the maintenance rule.

7 We have received positive comments from ACRS and
8 have performed a regulatory analysis to evaluate the costs
9 and the benefits and the uses. We've initiated
10 considerations of data collection methods in order to
11 minimize the impact and in response to an ACRS suggestion
12 we've initiated pilot tests of collection and use of data
13 with voluntary utilities.

14 The overall schedule was established to coordinate
15 with the effective date of the maintenance rule to minimize
16 impact by the staff and industry with the consistent use of
17 the database and data systems.

18 Could I have the next slide, please?

19 [Slide.]

20 MR. JORDAN: This slide is one of my favorites and
21 drives others to distraction, I suppose. What we intend to
22 show with this slide is the linkage and dependence of risk-
23 based activities on reliability methods and models,
24 equipment performance data, and human performance data.
25 Presently, the state-of-the-art of PRA methods and models

1 has out paced the availability of equipment and human
2 performance data. Human performance data was included for
3 completeness but not to distract this equipment reliability
4 discussion. A separate effort is underway with Research and
5 NRR to identify and obtain appropriate human performance
6 data.

7 Now I'd like to ask Mr. Baranowsky to begin his
8 presentation with a more detailed discussion of NRC needs
9 for reliability and availability data.

10 CHAIRMAN SELIN: Good morning, Mr. Baranowsky.

11 MR. BARANOWSKY: Thank you.

12 The equipment reliability and availability data
13 are needed to enhance and support the risk-based regulatory
14 applications that we've identified through the PRA plan.
15 The data is one part of a larger framework of risk-based
16 regulations. It's intended to provide help in terms of
17 moving toward a predictable and consistent and objective
18 risk-based safety evaluation and for regulatory decision
19 making. The data would support and improve the efficiency
20 and effectiveness of current NRC activities and it would
21 also support regulatory activity aimed at eliminating
22 unnecessary conservatisms that represent a regulatory burden
23 on licensees.

24 The proposed PRA policy statement indicated that
25 the expanded use of PRA should be implemented to the extent

1 that it's supported by the state-of-the-art in terms of
2 methods and data. It further stipulated that there should
3 be enhanced data collection for all of the Agency's risk
4 assessment applications and that information, including the
5 data that support risk-based regulatory decisions, should be
6 made publicly available.

7 The data as discussed in the PRA plan identifies
8 the need for current plant-specific equipment reliability
9 data, that it should provide for a credible source of data
10 for use in the regulatory process. It also identifies some
11 of the limitations that the current, I'll call it generic
12 data has in terms of the fact that it's sometimes not
13 pedigreed and it can be quite old. In fact, some of it is
14 based on WASH-1400. So, we need better data to increase the
15 role of PRA at the NRC.

16 COMMISSIONER ROGERS: Excuse me. Just before you
17 leave that slide, Mr. Baranowsky, just go back to the first
18 bullet, just if we focus on that. The word there "needed,"
19 I think if you take that very literally to mean that you
20 must have it to support certain applications, could you give
21 me a couple of examples of applications?

22 MR. BARANOWSKY: Actually I have them on the next
23 viewgraph.

24 COMMISSIONER ROGERS: Okay.

25 [Slide.]

1 MR. BARANOWSKY: The next viewgraph identifies the
2 NRC applications where this data would be used and are
3 therefore needed. I'll try to explain how --

4 COMMISSIONER ROGERS: Well, the need is the key
5 word that I'm focusing on.

6 MR. BARANOWSKY: Okay.

7 COMMISSIONER ROGERS: Not that it would be nice to
8 have, but that it's absolutely essential to have.

9 MR. BARANOWSKY: I understood the point.

10 COMMISSIONER ROGERS: Yes.

11 MR. BARANOWSKY: Let me talk a little bit here.

12 As stated previously, the data would help to
13 improve the efficiency and effectiveness of NRC regulatory
14 activities and a number of these activities are shown here.
15 They involve both generic and plant-specific risk-based
16 evaluations which are typically done by the staff or by NRC
17 contractors. Others involve evaluations of risk that may
18 permit the reduction in conservative margins or allow less
19 prescriptive requirements without an adverse impact on
20 safety.

21 Now, in terms of some of these particular
22 applications, for instance for generic issues, the data
23 would be used to improve prioritization of generic issues.
24 It would provide for a better understanding of risk which
25 would result in more risk effective decisions, enhance the

1 public protection while not having unnecessarily requiring a
2 regulatory burden be placed on licensees.

3 For plant performance analysis, the type of data
4 we're talking about would be useful for allowing a risk-
5 based assessment of licensee performance when based on
6 reliability of equipment and systems which would provide an
7 objective indicator that allows us at the NRC to have a
8 risk-based approach for determining increased or decreased
9 attention to some plants. For instance, in some of our
10 senior management meeting deliberations about plant
11 performance.

12 Another area where we --

13 COMMISSIONER ROGERS: Well, one of the points
14 that's been made in some of the material that we've received
15 prior to the meeting was that we're talking about a rule
16 here now which is a generic requirement for everybody.

17 MR. BARANOWSKY: Right.

18 COMMISSIONER ROGERS: We could still get that kind
19 of data for particular plants if we were going to consider
20 some kind of a relaxation of a regulatory requirement for
21 that plant. So, the issue is -- I mean I don't think that
22 the point that you can get it when you need it for a given
23 plant justifies requiring it for all plants.

24 MR. BARANOWSKY: One thing that you need in terms
25 of data is some of it has to be available industry-wide.

1 There are a limited number of actuations and failures of
2 most of the safety systems and the statistical methods that
3 are available for analyzing the reliability of that
4 equipment generally requires some sort of an approach using,
5 say, Bayesian updating in which a data set would be required
6 which gives a prior distribution from industry data and then
7 one can use more limited information from specific plants to
8 tailor that to that particular application. That's one
9 reason why we need an industry-wide data set on some of
10 these things.

11 CHAIRMAN SELIN: I think that argument is pretty
12 strong. For instance, if you were trying to figure out the
13 reliability of a diesel just from a particular plant, you
14 could never do it because the failure rate is so low that
15 the sample would be too low. What you clearly can argue is
16 that we need to know the reliability of the universe of
17 diesels and then try to get enough information to check
18 whether you have a lemon or something that's consistent with
19 the universe. I think once you say we need these data,
20 you've got a pretty good argument about why we need a rule
21 like this. In fact, I would even suggest that -- I think
22 the first part of your briefing is on very shaky ground, to
23 be absolutely blunt about it. I think it would be most
24 useful if we could get into the discussion of the rule
25 itself and say, "If we take as given that we need a rule of

1 roughly this scope, is this a good rule to do it in?" and
2 then we could come back to the question. Otherwise we'll
3 never get to that part.

4 I feel a little bad saying this because I'm the
5 one who's been pushing to say, if we need the data to
6 support the maintenance rule, we need it on a mandatory
7 basis not on a voluntary basis.

8 So, if you want to focus your arguments on
9 something that's mandatory because either we have a rule or
10 there's a health and safety argument, not a "it would be
11 nice. It would reduce the risk or it would save the cost."
12 I think that's worthwhile. Otherwise we might talk about
13 the rule and then come back to the broader context in which
14 that rule is --

15 MR. BARANOWSKY: Let me mention a little bit about
16 the maintenance rule. That has to do with the notion that
17 as part of the maintenance rule licensees are supposed to
18 look at their performance and compare it to the industry.
19 Right now it's going to be fairly difficult to compare
20 performance to the industry if you don't have an industry-
21 wide database of reliability and availability information to
22 benchmark against and also to help perform some of the
23 updating types of analyses that are required to track
24 reliability.

25 Certainly you can't do the analysis just using

1 plant-specific data alone where you have one or two failures
2 over a several year period of time and not very many
3 actuations. I've talked to some people that are working on
4 implementation of the maintenance rule and they raised that
5 issue as one of the most significant problems that they have
6 right now. This would help support that particular
7 application.

8 MR. JORDAN: While you're regrouping, I would
9 think, as an example of a particular action that the
10 Commission took that the staff provided information on is
11 the diesel generator associated rule. We had great
12 difficulty coming up with what is the performance data of
13 equipment and we were talking about diesel engines as
14 opposed to the electrical trains.

15 CHAIRMAN SELIN: Emergency power systems.

16 MR. JORDAN: Yes. And so, we were misleading
17 ourselves with regards to how reliable the equipment is
18 industry and on an individual plant basis. It took NEI's
19 input of information and some fairly detailed evaluations to
20 try to come up with what is the reliability, what is the
21 availability of this equipment and we still didn't get it
22 quite right. This kind of data would get it quite right.
23 So, as an example of how hard it is to work with data that
24 isn't derived on a consistent basis with the same
25 definitions and clear lines within the plant, that was a

1 marvelous example.

2 Do you want to pick up like slide 8 with that?

3 MR. BARANOWSKY: Yes. Let me move into what we're
4 talking about so that we can understand the nature of this
5 rule. It's number 8, page 8.

6 [Slide.]

7 MR. BARANOWSKY: We're looking for a fairly simple
8 rule that's limited. It has a requirement for annual
9 reporting of information primarily at the train level,
10 although some equipment that's at a unit smaller than the
11 train could possibly be reported and looking for information
12 like the demands, the failures and for a very limited number
13 of components, hours of operation, unavailability and some
14 information about concurrent train outages. The concurrent
15 train outages is important when looking at things like
16 voluntarily performing maintenance at power and different
17 trains for different functions are taken out of service at
18 the same time which are allowed by tech specs, but in a risk
19 context tend to give you a situation of --

20 CHAIRMAN SELIN: So you're talking about
21 configuration in operational data?

22 MR. BARANOWSKY: Yes.

23 CHAIRMAN SELIN: The concurrent outage isn't
24 necessarily a random outage, it's just the way you operate
25 the plant, how often, is this the only train up and how

1 often did it fail?

2 MR. BARANOWSKY: Right. Most PRAs assume it's a
3 random occurrence and if it's a systematic occurrence it can
4 change the --

5 CHAIRMAN SELIN: It could be systematic either
6 because you have a common fault failure or because you have
7 an operational regime that doesn't necessarily guarantee --
8 and you're trying to collect data that would go to both
9 problems.

10 MR. BARANOWSKY: Yes, both problems. The intent
11 is to have a fairly limited amount of information provided
12 to the NRC routinely, but that the licensees would have on
13 site records that support the data that they would use for
14 their applications. We skipped over some on a prior
15 viewgraph. The NEI folks came in with an applications guide
16 identifying 15 or 20 risk-based types of applications where
17 they're looking for primarily regulatory relief, to be
18 honest with you. The data would support that type of
19 application too.

20 In fact, to give you an idea of the extent of what
21 we're talking about, let's look at slide 9 where we see some
22 example systems and maybe I can explain this.

23 [Slide.]

24 MR. BARANOWSKY: The systems that would be covered
25 have been divided into two groups. The basic systems are

1 those that we think would be applicable to all licensees of
2 that type of reactor. For instance, for PWRs I've got the
3 four or five systems listed there. Then we would use a
4 plant-specific PRA to determine if any other equipment
5 should fall within the envelope of this particular rule.

6 It's also interesting to note that the way we're
7 trying to collect data on a train basis, it's possible to
8 get some support system data through the front line systems.
9 For instance, if an auxiliary feedwater system is dependent
10 on DC power, then if DC power makes part of the auxiliary
11 feedwater system unavailable, that would automatically be
12 collected. So, even though we might have listed DC power
13 here as a separate system, it's really a subset and through
14 that sort of a parent-child type of approach or support
15 system, dependent system layering, we would expect to be
16 able to get a number of systems covered here that have risk
17 significance at particular plants.

18 We've drawn up the same list of basic systems, a
19 list of basic systems for BWRs and then other systems that
20 might be covered either through the support system mechanism
21 or there may be a few components or equipment sets that are
22 risk significant in their PRA that would be covered also.

23 CHAIRMAN SELIN: That brings up a very interesting
24 question. When you get away from this sort of arbitrary
25 safety significant, safety related destination when you

1 start looking at risk, a lot of the challenges obviously
2 arise outside of the other -- and I would suggest that the
3 relevant systems would not be so-called safety systems.
4 Those are not in large number on this list. Are there other
5 systems that you would wish to collect data on because of
6 their prominence in neither of the analyses that come out of
7 the IPEs or the overall PRAs as being significant to risk
8 even if they're not what we now call safety systems?

9 MR. JORDAN: Well, the analyst wants all the data
10 he can get.

11 CHAIRMAN SELIN: We're not going to leash the
12 analyst.

13 MR. JORDAN: This set in discussions with industry
14 as well as our own PRA folks seems to be the minimal and
15 right set. We get the initiators, like the actual feedwater
16 system for the plant, we get those through the initiating
17 events.

18 CHAIRMAN SELIN: You get them already.

19 MR. JORDAN: So, we collect initiating data
20 already and now this is the safety systems to mitigate
21 one's --

22 CHAIRMAN SELIN: One doesn't have the same
23 argument to get the initiating data by train. You just need
24 to get that by overall system.

25 MR. JORDAN: This would be at the train level.

1 CHAIRMAN SELIN: This is not initiations, this is
2 mitigation?

3 MR. BARANOWSKY: The rule does not cover
4 initiating event data. I think we've got that pretty well
5 now in hand through LERs.

6 CHAIRMAN SELIN: Thank you.

7 MR. BARANOWSKY: And again, the basic systems
8 would be for all plants and then in some way these other
9 systems would feed in there, either directly or indirectly,
10 depending on their risk significance in say a plant-
11 specific PRA like IPE.

12 COMMISSIONER de PLANQUE: Can I infer from what
13 you said, Ed, that this is the kind of list that either you
14 or NEI would come up with and reasonably agree to?

15 MR. JORDAN: Yes.

16 MR. BARANOWSKY: Let me also mention that this
17 list of systems is a subset of those that are required to be
18 looked at as part of the maintenance rule. They're not a
19 different set of systems, they're a subset. We went and
20 looked at whether or not the maintenance rule had a
21 different envelope and it's just a larger envelope because
22 it isn't as risk-based as we're trying to make this
23 particular activity.

24 [Slide.]

25 MR. BARANOWSKY: The next viewgraph indicates that

1 we went to the ACRS and discussed this with them. They felt
2 that there is a need for plant-specific reliability and
3 availability data for risk-based regulation for both
4 improving safety and reducing the burdens on licensees.
5 They also discussed the issue about whether the information
6 should be publicly available, which is a point of contention
7 between the NRC and industry representatives. The ACRS is
8 supporting the notion that this should be publicly
9 available. They recommend publishing the rule for comment
10 and that we should, as part of our public comment process
11 and we're going to have some workshops, go over some
12 specific applications of the data so that the industry
13 understands it and better supports it.

14 COMMISSIONER de PLANQUE: When you had your
15 discussion with ACRS, was there any tie-in with the
16 maintenance rule along the lines that the Chairman is
17 suggesting? Was that discussed at all as the rationale as
18 opposed to the end point being PRA and risk-based
19 regulation?

20 MR. JORDAN: We identified a spectrum of need with
21 the maintenance rule being among the spectrum, but not a --
22 we did not advise the ACRS that that was the one and sole
23 basis.

24 CHAIRMAN SELIN: I'd like to just follow-up a
25 little bit on this public part. Insofar as the rule can be

1 shown to be a necessary both in terms of its existence and
2 in terms of its breadth from the point of view of the
3 maintenance rule or other health and safety regulation that
4 we now have on the books, then there's no question about the
5 public availability of the data. I mean we have a
6 longstanding principle that the public, given sufficient
7 technical support, should be able to recreate the licensing
8 and inspection basis from publicly accepted data.

9 But insofar as the data are beyond what we need to
10 support the maintenance rule and then you get into it would
11 be nice if we could do PRAs, et cetera, then they become
12 legitimate questions of -- well, they're always legitimate
13 questions, but they become broader questions of public
14 availability.

15 There's a second question of public availability
16 and that's just the economic impact of the different parties
17 providing the data in such a way that they could be easily
18 accessed by the public, but that really is a separate
19 question.

20 So, in my mind at least, the tightness of the
21 justification of the rule has an impact on all of these
22 subsidiary questions.

23 COMMISSIONER de PLANQUE: Following up on that
24 point, noticing that you refer to the policy statement on
25 PRA on the public issue, the wording there is, I think,

1 rather significant because it says PRA evaluations in
2 support of regulatory decisions should be as realistic as
3 possible and appropriate supporting data should be publicly
4 available for review. It doesn't seem to say that data
5 gotten in a generic sense to look at general problems or
6 trends necessarily has to be individually identified with
7 the plants, which I think is one of the main concerns. So,
8 I'm not even sure how to interpret this section if your end
9 point is PRA. I'm not sure necessarily that data has to be
10 individually identified with plants, but perhaps can be used
11 in a generic sense.

12 MR. JORDAN: Well, there are both plant-specific
13 risk performance and industry-wide and then cut by system or
14 equipment. So, we're looking for a way of being able to
15 examine this array from each of its aspects.

16 CHAIRMAN SELIN: Well, I assume your argument is
17 you can't take a diesel from Salem and a feedwater system
18 from Hope Creek and come up with an average probability for
19 the plant. In order to get overall risks for a plant you
20 need to be able to hook real trains to other real trains.
21 So, one way is your vertical slice. On the other hand, we
22 also want to know what do we know about diesel systems in
23 general and that's the train data. So, you need to be able
24 to hook them both vertically and horizontally, I assume.

25 MR. THADANI: I think, if I may comment, first of

1 all, in terms of the maintenance rule, the licensees have to
2 have the same kind of information. A rule does not require
3 the licensees to submit that information to NRC, but it is
4 on site available for inspection purposes. One element of
5 the rule, as Ed mentioned earlier, is that the licensees
6 need to get some understanding of industry performance and
7 evaluate that at some intervals to make sure they have an
8 understanding on the performance of the components that they
9 have at their plant in relationship to those at other plants
10 and basically for the reason, Mr. Chairman, you mentioned,
11 few failures. It's very difficult to assess reliability of
12 components that way.

13 But I think the key part is we're talking about
14 not only generic applications which means it's useful to
15 pool appropriate data properly and try and understand on
16 some national basis performance. We have to do it
17 carefully. Again, we can't mix apples and oranges. But the
18 more important part as we go forward is, in fact, a number
19 of plant-specific applications that the licensees have
20 proposed making use of. To be able to do that, the quality
21 of data and methods become critical in those decisions. Not
22 only that the quality needs to be good, but it should be
23 available, it seems to me, publicly so that people can see
24 how we've made those decisions.

25 COMMISSIONER de PLANQUE: I think having made the

1 decision is the critical wording, however. If it's a plant-
2 specific item, surely then the data that backed that
3 decision should be publicly available. But that's different
4 from looking at generic data and looking at trends or trying
5 to weave it more into a PRA type of risk-based regulation.

6 MR. THADANI: But one element of looking at this
7 information as a regulatory body is to try and get an
8 understanding, some understanding of plant performance and
9 this is a very good way. So, that, it seems to me, would be
10 a natural outcome.

11 CHAIRMAN SELIN: Let me answer -- at least
12 respond, answer is the wrong word, to a couple things you've
13 said. First of all, I personally believe we need these
14 data. I also don't believe the document has made the case
15 very well. So, let me just put those two aside in terms of
16 full disclosure. The arguments you make about the data are
17 available at the plant, that's the same arguments we heard
18 about the maintenance rule in the first place. Now that we
19 have a maintenance rule we see a lot of virtues in that.

20 If we need to know industry wide information so
21 that we can regulate the health and safety of plants, that's
22 the basis for requiring it. If we need to know the industry
23 information so that the individual members of the industry
24 can do the analyses that the rules call for them to do,
25 that's a basis for requiring the data. But if we need to

1 know the industry-wide data so that an individual plant can
2 come in and say, "I'm probably okay," that's not a basis for
3 requiring the other people to come in. You can't require
4 one utility to provide data because another utility might
5 want to do a cost beneficial action.

6 So, as nice as it would be to have it and as
7 important as it would be if we're going to do a good and
8 elegant job of our thing, that still falls short of the
9 basis for the mandatory submission of data. I don't see
10 that kind of analysis in the paper. There's a statement of
11 a number of good things which we all agree with. We don't
12 always agree on what are good things, but these are good,
13 and then that these data would allow us to do these good
14 things. I really do think we have to be more rigorous about
15 what is our safety requirement for doing that.

16 On the other hand, I promised I wasn't going to
17 make that argument.

18 COMMISSIONER de PLANQUE: Let me just say I agree
19 with what the Chairman is saying. I think we need to
20 separate out what's actually needed, be it for carrying out
21 maintenance rule or whatever, what's actually needed and
22 have that in the rule. If there is further data that both
23 we and the industry would like to see used and collected
24 somehow to advance the possibility of using more risk-based
25 regulation, then perhaps that needs to be handled some way

1 outside of a rule. I realize we haven't gotten to any good
2 agreement on how to do that yet, but I don't know that
3 that's impossible. Perhaps not all mechanisms for doing
4 that have yet been exhausted.

5 CHAIRMAN SELIN: I wouldn't go quite that far.
6 I'm not convinced that we don't need all the data you're
7 asking for, but I am convinced you haven't convinced me that
8 we need the data needed in the legalistic sense of it's
9 required on our basis. I think it's very plausible that
10 you'll end up with an argument that supports not only a part
11 of the data you're asking for, but all of the data. I just
12 don't think we're there yet.

13 MR. TAYLOR: We may need to go back and look at it
14 to undergird and separate the need issue a little more
15 clearly from all the benefits. They're sort of all mixed up
16 together. This does give you a lot of hopefully benefit to
17 the industry, benefit to us in trying to understand how to
18 do our job. Out of the maintenance rule, of course, we all
19 recognize the enormous variability of the equipment across
20 the industry too. That's one of the -- you know, the direct
21 comparison of information gets very difficult because of the
22 lack of standardization at the component level and at the
23 train level.

24 So, you're dealing with a large population of
25 equipment. Some people have huge governor problems over and

1 over and over again. Others seem to have even with similar
2 equipment to have whipped that problem. So, I think out of
3 this briefing we're getting a very clear signal we need to
4 undergird the supporting need question versus all of the
5 potential benefits.

6 COMMISSIONER ROGERS: Yes. I think the problem
7 is, just in a nutshell, it comes over as really we need this
8 to do PR, a regulation. If you come back to the point the
9 Chairman made in the very beginning, if we really feel
10 plants are safe now, do we have to do that? It might be
11 nice. I'm very enthusiastic, I like it all those sort of
12 things, but do you need it for safety? The answer to that
13 is fuzzy. When you come back to the maintenance rule, we
14 believe we needed the maintenance rule for safety. That's
15 why we did it. If we need this data or these data for the
16 maintenance rule, that by itself may be sufficient. But all
17 the other things that might be nice to have that come along
18 with it just simply can't be justified by themselves, I
19 think. They are enhancements of something, but if you come
20 back to the basic question what is absolutely needed to
21 maintain a level of safety in the plants that we feel is
22 there today, then make your case on that basis.

23 CHAIRMAN SELIN: Or you could do a backfit
24 analysis that said that there'd be sufficient reduction of
25 risk, but I don't think you have to do that. One thing that

1 Ed has convinced me of in this year of discussion is how
2 tough it is to get good data to support the maintenance
3 rule. That's a big deal. It's not just send in your safety
4 system actuations once a year and tell us how you're doing.

5 Why don't you continue discussing the rule.

6 MR. JORDAN: Could I comment because I'm afraid
7 I'm guilty of being the architect that sort of set the
8 arguments. In terms of the set of data, the set of data is
9 really geared for the maintenance rule support. It's a very
10 minimum set of the order of six systems and two trains per
11 system and then specific discreet elements about those that
12 are from a PRA definition and description. So, the
13 community agrees reasonably well on that set and those
14 elements. How we actually get the data is still maybe a
15 difficulty.

16 So, for support of the maintenance rule, to
17 understand on a plant-specific basis whether the safety
18 equipment has the reliability that the utility projected in
19 their PRAs strung across systems and then whether the
20 industry across the industry has achieved the kind of
21 reliability that they expect, that in fact maintenance and
22 smart operation derives, those are the elements. There's no
23 fluff in that set.

24 Now, where maybe we have fluffed is in saying the
25 broader reason for wanting these data are, in fact, to

1 support a transition to risk-based regulation. I feel very
2 strongly that you can't do it without real data. We can
3 pretend and we can use handbook values, but we're not going
4 to get there unless we have real data. So, I guess I'm
5 personally of the view that it is a compelling argument to
6 have that data for those purposes.

7 CHAIRMAN SELIN: It's a convincing argument, but
8 it's not a compelling argument.

9 MR. JORDAN: Okay. Only for me.

10 COMMISSIONER ROGERS: There's no compulsion about
11 a risk-based regulation. That's the fundamental point.

12 MR. JORDAN: That's the problem. My view is that
13 we will improve safety substantially through that process.

14 CHAIRMAN SELIN: Okay. Either or both of those
15 arguments would be adequate. But you can improve safety,
16 but you don't need it. Then you had to do a backfit
17 analysis, which you haven't done. If you need this to
18 support the maintenance rule, which we have convinced
19 ourselves is required for an adequate level of health and
20 safety, then you don't. So, that's --

21 MR. JORDAN: We have mixed the arguments. I
22 agree.

23 CHAIRMAN SELIN: Furthermore, getting more back to
24 the technical point, I would like to tell you that from my
25 point of view you need industry data to be satisfied that

1 any given train is safe enough. You can't just rely on the
2 data that come from that train. So, I'm not even pushing it
3 to the point of saying, "Why do we need industry data to
4 support plant-specific analysis?" The answer is the data
5 that are generated by the plant are not adequate in general
6 to support an evaluation of the reliability of the systems
7 in the plant. The level of reliability requires too high,
8 the number of events is too small, the uncertainty is too
9 great in less than a thousand years. We're not setting an
10 unreasonably high level of proof that we're asking for on
11 these data. At least I don't think we are.

12 You do have a very interesting section on
13 consideration to minimize impact. You described what you're
14 going to ask for. Maybe it would be useful to go on and do
15 that part.

16 MR. BARANOWSKY: I might mention, since we're
17 talking about that, the regulatory analysis really talks
18 about the impact too. The impact is minimized as far as we
19 can tell by the activities that we've undertaken over the
20 last few years to work with industry to discuss what are the
21 minimum types of data that should be collected and then also
22 to try and understand how difficult it is to collect certain
23 types of information, like for instance demands. When you
24 talk about the demands on valves and circuit breakers and
25 things like that, if you try and collect every demand and

1 count every demand if that's a requirement, then it can be
2 extremely expensive. But if you allow yourself to do more
3 of a sample on some of these things, then it gets more
4 reasonable.

5 Also, we looked at the NPRDS and INPO's safety
6 system performance indicator, the latter of which is being
7 revised to be more like a reliability indicator. I don't
8 know anymore details than that, so I can't say whether it
9 really is. But we're trying to parallel those things so
10 that to the extent practical whatever definitions that we
11 come up with would match those that are already in place in
12 industry. The data plant-specific basis that would be
13 collected to support the maintenance rule is also a subset
14 of what we're talking about the data for this particular
15 rule so that if we take a number of activities like the
16 maintenance rule, NPRDS and safety system performance
17 indicator and we have enough interaction with the industry
18 people to understand why it's costly sometimes to collect
19 information the way the NRC likes to have it done without
20 having gone and seen the difficulties, then I think we can
21 really reduce the burden.

22 What we're hoping is that we would get down to a
23 situation where any information that would be reported to
24 the NRC would be nothing more than transferring information
25 and data that's already in a database that's on-site and the

1 cost may be formatting and electronic transmission or
2 something like that. That would be our objective. We'd
3 like to have some workshops to make sure we reach that
4 objective too.

5 CHAIRMAN SELIN: Could you explain this line about
6 implementation period without backfitting data? I don't
7 understand what that means.

8 MR. BARANOWSKY: Yes. One discussion that we had
9 amongst ourselves is how costly it is to go back through
10 records that aren't organized in a way that allows you to
11 easily extract information on reliability.

12 CHAIRMAN SELIN: This rule is a prospective rule,
13 isn't it?

14 MR. BARANOWSKY: It is a prospective rule, but we
15 do have even more sparse, I would say, LER data that over a
16 fairly long period of time gives us some prior information
17 with which we could then use more currently collected
18 information to update reliability results for particular
19 events.

20 CHAIRMAN SELIN: But are we requiring any
21 retrospective data to be submitted as a part of this?

22 MR. JORDAN: No, we're not.

23 CHAIRMAN SELIN: Okay. Do you have some kind of a
24 time constant or relaxation constant built in how we're
25 going to accumulate these data over time so that we don't

1 give early data the same weight as more recent data a few
2 years down the line? Do you follow what I'm saying?

3 MR. BARANOWSKY: Yes. The data will be identified
4 by its time, its date. Generally what we do is we look at
5 how things change in time say industry-wide so that we can
6 determine when a trend has been occurring and we can take
7 that into consideration.

8 CHAIRMAN SELIN: You're not going to average data
9 over years.

10 MR. BARANOWSKY: No. No.

11 CHAIRMAN SELIN: You're going to say the
12 reliability for this year, for the next year, for the next
13 year.

14 MR. BARANOWSKY: No. There are a number of
15 statistical tests that we would ourselves perform in order
16 to make sure that the current data is given more weight, for
17 instance. I don't know if this is the right place to
18 discuss them.

19 CHAIRMAN SELIN: If you don't average over the
20 time, then you've answered the question. Are you going to
21 take reliability as a characteristic of a given time period?
22 But you didn't say you were going to do it. I said I
23 thought you were going to do that.

24 MR. BARANOWSKY: Over a short period of time you
25 would have. I mean you'd have to pick some period of time.

1 I'm saying that we can use statistical tests to figure out
2 the size that that time interval has to be. I think what
3 we're talking about for plant-specific types of analyses is
4 something like three to five years. When you get to 10 to
5 15 years old, just forget statistics, just on qualitative
6 grounds you can believe things have changed enough that the
7 data are not representative anymore. That's where some of
8 our current generic data is.

9 CHAIRMAN SELIN: And what about the train data to
10 keep track of diesel trains?

11 MR. BARANOWSKY: Yes.

12 CHAIRMAN SELIN: You could do that on an annual
13 basis?

14 MR. BARANOWSKY: Yes. I mean that's easy to do
15 because licensees keep track on equipment by equipment basis
16 and it's actually more work to homogenize things together
17 than to just take the information item by item and keep
18 track of it. With computers and database systems, that's
19 easy to do.

20 MR. JORDAN: And so, if I understand your
21 question, we've in the rule proposed to compile on a
22 quarterly basis and submit annually. So, that would be
23 the --

24 CHAIRMAN SELIN: So, we have the tags both by time
25 period and by system or train --

1 MR. JORDAN: Yes.

2 CHAIRMAN SELIN: -- to aggregate whatever way
3 seems appropriate.

4 MR. JORDAN: Correct.

5 MR. BARANOWSKY: Let me move to number 15. That
6 also supports this notion in which we actually went out to a
7 couple of plants as part of the maintenance rule pilot
8 inspections and we found that in different programmatic
9 areas, you might say, that the data was generally available,
10 whether it's specifically tagged for maintenance rule usage
11 or for the licensee's own PRA support programs. We found
12 actually more information than we would be interested in
13 collecting under this rule. We're planning on using the NRR
14 pilot tests for PRA applications to make sure that the
15 specifications that we're developing for collecting the data
16 are both useful and not onerous at the same time.

17 COMMISSIONER de PLANQUE: At the two sites that
18 you went to, was it similar in terms of the ease of access
19 of the kind of data we're talking about?

20 MR. BARANOWSKY: I'm not sure if the ease of
21 access was similar. I don't think it was difficult. We
22 went a person there for a day or two and they went through a
23 number of data systems that licensees have as opposed to
24 hard copy records and was able to find the type of
25 information.

1 COMMISSIONER de PLANQUE: Well, let me put it this
2 way. If the data were to be submitted to us in accordance
3 with what you would expect from the rule, would it be more
4 difficult from one plant than the other or --

5 MR. BARANOWSKY: Oh, I think it would vary.

6 COMMISSIONER de PLANQUE: It varies.

7 MR. BARANOWSKY: Mainly it would vary because of
8 inconsistency of format. One thing we've learned in doing
9 PRAs is that the way different plants have their records it
10 can make a difference in how easy it is to extract
11 performance information.

12 COMMISSIONER de PLANQUE: Okay. So when you take
13 into account how difficult it would be for plants to do
14 this, you have to take this variability into account?

15 MR. BARANOWSKY: Yes. And our most -- part of the
16 regulatory analysis I think we assumed that it would be the
17 most difficult situation.

18 Okay. That really brings us to the schedule which
19 involves a few things here. You have the statement of
20 considerations which we have and are getting some comments
21 on and we're planning on, depending on how things go,
22 publishing something in the Federal Register in a month or
23 so, and at the same time doing whatever we can to get
24 started with pilot applications.

25 Importantly, I'd like to mention that we wanted to

1 have public workshops, one this summer and another one
2 during the winter, probably early 1996. So that would give
3 us a fair amount of time to continue to work with industry
4 and discuss in public the nature of regulatory guides and
5 specifications and things like that and also understand the
6 pilot applications to assure that we've achieved our goal of
7 trying to minimize the burden. The rule would become
8 effective shortly after the maintenance rule is implemented.
9 One of the theories here is that we should do this while the
10 maintenance rule is going through the pre-implementation
11 phase in order to economize on any activities licensees
12 might make or do to set up data systems to support the
13 maintenance rule.

14 COMMISSIONER de PLANQUE: Given the uneasiness
15 about all of this, what are your plans for having even a
16 draft reg guide available when you do workshops or along the
17 line?

18 MR. BARANOWSKY: The workshop in August would have
19 the basic elements of the reg guide laid out for comment.
20 We wouldn't want to go out and say, "This is the reg guide,"
21 at that point, but we're fairly certain that in the June,
22 July time frame we at the NRC will have laid that out, give
23 us a little time to work on it and then present the
24 concepts, definitions, sort of straw man, if you will, for
25 the workshop.

1 CHAIRMAN SELIN: The schedule seems very sensible.
2 When you get down to what you want to collect and how you
3 want to collect it, you've clearly spent a lot of time and
4 effort thinking about both what you want to do, have the
5 discussions with the industry and then go ahead with these
6 pieces. That strikes me as being workman-like, very well
7 done.

8 MR. THADANI: I might just make a comment, that
9 we're planning to have a workshop on the results that we've
10 got from the pilot studies we've done for the maintenance
11 rule implementation. That workshop is going to be -- I
12 believe it's June 27th. At that workshop, we also expect to
13 talk about the whole issue of implications of data as far as
14 the maintenance rule is concerned.

15 CHAIRMAN SELIN: That seems to be only fair
16 because as people are figuring out how they're going to
17 implement the maintenance rule they ought to know what the
18 data implications are as well as the operational
19 implications.

20 Commissioner Rogers?

21 COMMISSIONER ROGERS: Well, just on this question
22 of the reg guide, we've talked many times in connection with
23 other rules about the desirability of having a reg guide
24 available for comment at the same time you're getting
25 comment on the rule. I guess I tend to feel that that would

1 be desirable here. I understand the schedule that you're
2 trying to make with the rule, but it does seem to me the reg
3 guide is a very important aspect of this. I feel a little
4 bit more comfortable when we're getting public comments on
5 the reg guide in the context of a given statement of a rule,
6 rather than getting public comments on the rule and then we
7 come up and do the reg guide separately.

8 So, I don't know. I don't know how decoupled
9 these things have to be in order to meet your schedule, but
10 I for one would be a little bit more comfortable if we could
11 get public comments on the reg guide in the context of the
12 proposed rule rather than as a separate issue.

13 MR. JORDAN: Well, the reg guide needs industry
14 input into it. I mean ideally it would be an industry
15 standard with a small S that we would be endorsing. So,
16 what we're trying to stimulate is an industry response to
17 given that we're proceeding in this direction, these are the
18 elements, the guidance and it would be more industry
19 guidance than NRC guidance. So, we're trying to provide a
20 stimulation much as the maintenance rule itself was done.

21 COMMISSIONER ROGERS: Well, I just hope that you
22 keep that reg guide activity going apace as you --

23 MR. JORDAN: Indeed. It's an essential part.

24 COMMISSIONER ROGERS: It really, it seems to me,
25 very important, and not let that become -- take on a life of

1 its own in a certain sense. It really has to fit the rule
2 and the rule has to fit the reg guide. So, I think they
3 should be hooked together as much as you can.

4 MR. JORDAN: As a performance based rule, which
5 we're designing this to be a simple performance based rule
6 with a standard that goes along with it, we're looking for
7 the extensive industry interaction in actual development of
8 those guidance elements.

9 COMMISSIONER de PLANQUE: But that's precisely why
10 a reg guide should certainly be available during a public
11 comment period on the proposed rule.

12 CHAIRMAN SELIN: What I hear you saying is we need
13 to get the rule out and then talk to the affected people to
14 do a draft of a reg guide.

15 MR. JORDAN: Yes.

16 CHAIRMAN SELIN: So, you can meet that objective
17 by getting the rule out early in the reg guide and the
18 schedule if you didn't try to tie up the rule in final form
19 until you get the comments on the reg guide. So, it's not
20 so much when you start, but how much --

21 COMMISSIONER de PLANQUE: But that both are
22 available while the comment period is still open.

23 COMMISSIONER ROGERS: I think that's really the -
24 -

25 MR. TAYLOR: Let us -- I think we can handle that.

1 COMMISSIONER ROGERS: Yes. Right.

2 MR. TAYLOR: We'll have to look at the schedule.

3 COMMISSIONER ROGERS: Yes. The comment period on
4 the rules shouldn't end before the comment period on the reg
5 guide. They've got to be in parallel.

6 MR. TAYLOR: So they're coupled.

7 COMMISSIONER ROGERS: Yes.

8 COMMISSIONER de PLANQUE: Has there been any
9 discussion with OMB on this?

10 MR. JORDAN: We have not had a discussion with OMB
11 at this point.

12 COMMISSIONER de PLANQUE: I have nothing further
13 to add. I think we've said it all.

14 MR. TAYLOR: That will have to happen. No
15 question about that.

16 CHAIRMAN SELIN: You basically have to do -- I
17 mean you sort of have two tracks. One is what are we going
18 to do and the second is why are we doing it? The "what are
19 we going to do?" I think is on quite solid ground and "why
20 are we doing it?" needs some work. I, for instance, am
21 quite comfortable with the idea of just putting out this
22 issue about the public availability of the information, but
23 it can't be meaningfully commented on until we have a basis
24 for the rule better. So, I wouldn't push to determine the
25 answer to the public question at this point. I think you've

1 handled that well in the draft rule. In fact, the statement
2 of considerations needs some work. The draft rule looks
3 pretty good. That's my one line summary of it, of the
4 piece.

5 This represents what could be a very, very big
6 step forward. I don't wish to have the fact that I focused
7 on where the work is needed to cloud what is sort of 80
8 percent of the way to quite an extraordinary achievement.
9 You've been under a lot of pressure to get this done quickly
10 and maybe in retrospect going through a more formal process
11 where you do a -- you spend a little more time with the
12 General Counsel, you float it to the Commission and then you
13 come back and draft it. We might have served you better if
14 we'd done it that way. But I think this is a big step
15 forward and I don't think it's that far from an acceptable
16 draft rule with an acceptable justification, but it has to
17 be done before it can go out and I think the Commission is
18 pretty unanimous on that approach.

19 Fine. Thank you very much.

20 MR. TAYLOR: Thank you.

21 MR. JORDAN: Thank you.

22 [Whereupon, at 10:58 a.m., the meeting was
23 concluded.]

24

25

CERTIFICATE

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

TITLE OF MEETING: BRIEFING ON PROPOSED RULE ON SAFETY
EQUIPMENT RELIABILITY DATA - PUBLIC
MEETING

PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: Wednesday, April 26, 1995

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

Transcriber: Carol Lynch

Reporter: Peter Lynch



PROPOSED RULE FOR RELIABILITY AND AVAILABILITY DATA

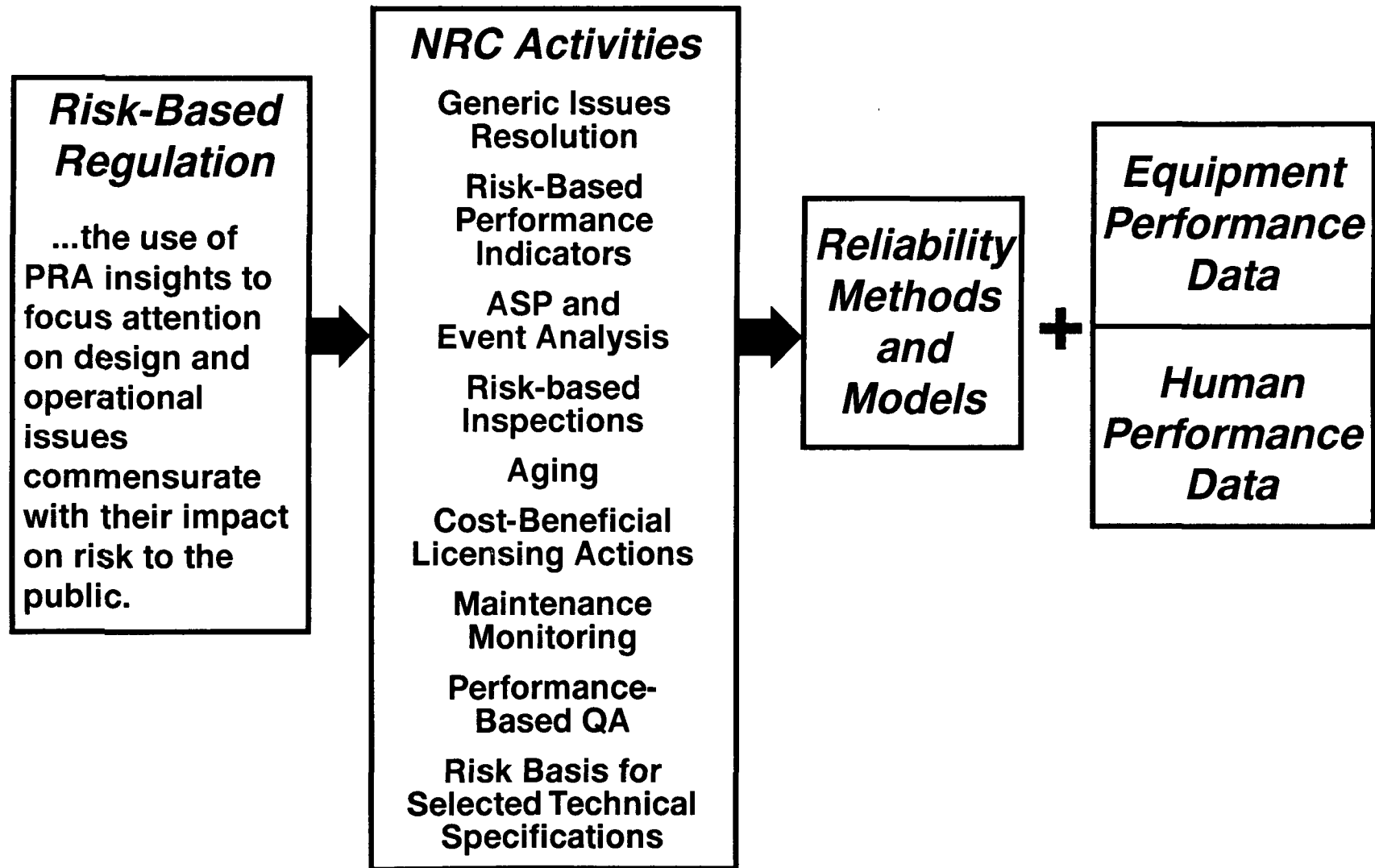
April 26, 1995

**Edward L. Jordan
Patrick W. Baranowsky**

DISCUSSION

- **NRC need for reliability and availability data**
- **NRC applications and industry uses**
- **Previous actions**
- **NRC goal of simple, performance-based rule**
- **Example systems**
- **ACRS briefings**
- **Regulatory analysis**
- **Considerations to minimize impact**
- **Pilot tests of application of data**
- **Schedule**

NRC NEED FOR RELIABILITY DATA SUPPORTING RISK-BASED REGULATION



NRC NEEDS FOR RELIABILITY AND AVAILABILITY DATA

- **Equipment reliability data needed to enhance and support risk-based regulatory applications**
 - **Data are part of framework for risk-based regulation**
 - **Need for data to improve current NRC regulatory applications**
 - **Applications where it would reduce regulatory burdens**
- **Proposed PRA policy statement indicates**
 - **Expand PRA use**
 - **Enhance data collection**
 - **Make information available to public**
- **PRA Plan**
 - **Current, plant-specific equipment reliability data are needed to provide a source of credible performance data for NRC use in the regulatory process**

NRC APPLICATIONS

- **Generic issue identification and resolution**
- **Risk-based indicators of plant performance**
- **Accident sequence precursor and events analysis**
- **Risk-based inspections**
- **Aging**
- **Cost-beneficial licensing actions**
- **Maintenance monitoring**
- **Performance-based QA**
- **Risk-basis for selected technical specifications**

INDUSTRY USES

(From NEI Draft PSA Applications Guide)

- **Evaluation of risk significance**
 - **Technical specifications improvements**
 - **Backfit evaluations**
 - **Plant change assessment (i.e., 10 CFR 50.59)**
 - **Design options studies**
 - **Significant event evaluations**
 - **Justification for continued operation (JCOs)**
 - **Operability evaluations (OEs)**
 - **Evaluation of inspection findings**

INDUSTRY USES (Continued)

- Evaluation of equipment out-of-service
- Evaluation of non-routine maintenance at-power
- Generic issue evaluations
- Risk-based prioritization/ranking
 - Prioritization of plant changes
 - Prioritization of test requirements
 - Identification of risk-significant SSCs
 - Risk-based inspection and testing guidance
 - Maintenance prioritization
 - Procedure/training improvement programs

PREVIOUS ACTIONS

- **For two years, NRC staff worked with INPO and industry on recommendations to modify NPRDS to provide PRA-type reliability data for risk-significant components**
- **For one year, NRC/NEI/INPO discussions on modifying and expanding INPO's safety system performance indicator (SSPI)**
- **In this process, NRC staff has consolidated and focused on data elements to meet NRC needs and still minimize burden on industry**
- **EDO approved initiation of rulemaking in October 1994**
- **Additional meetings with NEI have occurred to exchange views**
- **Public availability of data is an issue**

NRC GOAL OF SIMPLE, PERFORMANCE-BASED RULE

- **Rule is a simple, conceptual statement of data to be reported**
 - **Annual summary report of quarterly, train-level data for risk-significant systems and equipment**
 - **Demands, failures, hours of operation, unavailability, component failure information, and concurrent train outages**
 - **Supporting documentation and records maintained on site**
- **Regulatory guide will provide further guidance such as**
 - **Minimum set of basic systems for all plants**
 - **Method for selecting additional systems based on plant-specific risk significance**
 - **Definitions of risk-significant safety functions, failures, train-level demands**
 - **Guidance on defining system and train boundaries**

EXAMPLE SYSTEMS

- **PWR basic systems**
 - **Auxiliary feedwater system**
 - **High pressure safety injection system**
 - **Reactor protection system**
 - **Emergency AC power system**
 - **Low pressure safety injection system**
 - **Power operated relief valves (as needed for feed and bleed)**
- **PWR potential additional systems**
 - **DC power system**
 - **Main steam isolation valves**
 - **Secondary pressure relief system**
 - **Intermediate head safety injection system**
 - **Chemical and volume control system/charging system**
 - **Service water system**
 - **Component cooling water system**
 - **Containment spray system**
 - **Containment fan cooling system**
 - **Vital equipment HVAC**

EXAMPLE SYSTEMS (Continued)

- **BWR basic systems**
 - **Reactor core isolation cooling system**
 - **Isolation condenser, high pressure coolant injection or high pressure core spray**
 - **Reactor protection system**
 - **Emergency AC power system**
 - **Low pressure coolant injection or low pressure core spray**

- **BWR potential additional systems**
 - **DC power system**
 - **Automatic depressurization system**
 - **Containment vacuum breakers**
 - **Main steam isolation valves**
 - **Safety/relief valves**
 - **Containment spray system**
 - **Essential service water system**
 - **Reactor building closed cooling water system**
 - **Standby liquid control system**
 - **Vital equipment SW pump room ventilation**

ACRS BRIEFINGS

- **March 9 briefing on conceptual rule**
- **April 7 briefing on proposed rule and regulatory analysis**
- **ACRS letter of April 12, 1995, indicates:**
 - **High quality, plant-specific reliability and availability data are needed for risk-based regulation to fully reach its potential**
 - **Staff has taken the correct position on public availability**
 - **ACRS recommends publishing the proposed rule for public comment**
 - **Public comment process will be enhanced if, at scheduled workshops, staff presents examples of how data on reliability and availability will be applied**

REGULATORY ANALYSIS

- **No action alternative - status quo**
 - **When critically needed, NRC would take action to obtain data by inspection or generic letter**
 - **NRC would not have reliability data for trending performance**
 - **Implementation of risk-based regulation would be limited by lack of data**
- **NRC collect reliability data**
 - **Not analyzed in detail - NRC costs prohibitive**
- **Voluntary submission of data**
 - **Not analyzed in detail - NRC/industry have not reached agreement after several years of discussion**

REGULATORY ANALYSIS (Continued)

- **Preferred alternative - collect reliability data by rule**
 - **NRC benefits - reduced cost for regulatory activities and more risk-focused and risk-effective regulatory decisions**
 - **Industry benefits - potential large savings as part of move to risk-based regulation, reduced regulatory burden, regulatory attention focused on risk-significant performance and issues, and improved plant availability**
 - **NRC costs - Implementation - \$1 million
 Operation - \$0/yr (offset by other programs)**
 - **Industry costs - Implementation - \$8 million
 Operation - \$4 million/yr**

CONSIDERATIONS TO MINIMIZE IMPACT

- **Several information exchange meetings with industry to sharpen focus on data needs, data collection problems, and related issues**
- **Systems and equipment for which data would be reported are a subset of systems and equipment within scope of maintenance rule**
- **Definitions of data elements and system boundaries consistent with industry databases (NPRDS, SSPI) to the extent practical**
- **Request comments on sunset provision and grandfather provision**
- **Comment process, workshops, and pilot tests**
- **Implementation period without backfitting data**
- **Reassessment of regulatory guide with experience**
- **Staff will review 50.72/50.73 reporting requirements**

PILOT TESTS OF APPLICATION OF DATA

- **AEOD visited two sites with maintenance rule teams**
 - **Data elements appear readily retrievable from plant records**
 - **Some plant data systems more aligned with component-level data**
- **NRR plans pilot tests of applications of risk-based concepts to specific regulatory initiatives - e.g., IST requirements, graded QA**
- **AEOD to work with NRR on pilot studies**
- **Evaluate collection and use of proposed data**

SCHEDULE

- **Commission approval of proposed Rule - 5/15/95**
- **Publish proposed rule in Federal Register - 5/30/95**
- **Pilot applications - start Spring 1995**
- **First public workshop - 8/95**
- **Issue draft regulatory guide for comment - 11/1/95**
- **Second public workshop - 2/96**
- **Commission approval of final rule - 5/15/96**
- **Issue Federal Register notice of final rule - 5/30/96**
- **Licensees begin collecting data 1/1/97 and submit first annual report 1/31/98**