

ORIGINAL

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

**Title: NRC STAFF BRIEFING ON PROBABILISTIC RISK
ASSESSMENT IMPLEMENTATION PLAN
PUBLIC MEETING**

Location: Rockville, Maryland

Date: Tuesday, September 7, 1999

Pages: 1 - 84

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1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION
3 OFFICE OF THE SECRETARY

4 ***

5 NRC STAFF BRIEFING ON
6 PROBABILISTIC RISK ASSESSMENT
7 IMPLEMENTATION PLAN

8 ***

9 PUBLIC MEETING

10
11 Nuclear Regulatory Commission
12 One White Flint North
13 Building 1, Room 1F-15
14 11555 Rockville Pike
15 Rockville, Maryland
16 Tuesday, September 7, 1999

17 The Commission met in open session, pursuant to
18 notice, at 9:17 a.m., the Honorable GRETA J. DICUS, Chairman
19 of the Commission, presiding.

20 COMMISSIONERS PRESENT:

21 GRETA J. DICUS, Chairman of the Commission
22 NILS J. DIAZ, Member of the Commission
23 EDWARD McGAFFIGAN, JR., Member of the Commission
24 JEFFREY S. MERRIFIELD, Member of the Commission
25

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1 STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

2 MALCOLM KNAPP, Deputy Executive Director for

3 Materials Research, & State Programs, NRC

4 ASHOK THADANI, Director of the Office of Research

5 TOM KING, Director of the Division of Risk

6 Analysis and Applications in Research

7 PAT RATHBUN, Division of Industrial and Medical

8 Nuclear Safety, NMSS

9 MARTY VIRGILIO, Deputy Director of NMSS

10 GARY HOLAHAN, Director of the Division of Systems

11 Safety and Analysis, NRR

12 SCOTT NEWBERRY, Deputy Director of the Division of

13 Regulatory Improvements, NRR

14 SAM COLLINS, Director, NRR

15 BRIAN SHERON, Associate Director, NRR

16 KAREN D. CYR, General Counsel, NRC

17 ANNETTE VIETTI-COOK, Secretary, NRC

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P R O C E E D I N G S

[9:17 a.m.]

1
2
3 CHAIRMAN DICUS: Let me apologize for starting a
4 little bit late. It was my fault. I was the late one this
5 morning. I am leaving on travel; I probably will not be
6 able to stay through the whole briefing and Commission Diaz
7 will take over and I appreciate that, but when I have got to
8 go on travel, I have got to stop in the morning and take my
9 dog to the kennel and then I get into this awful traffic and
10 I remember why it is I come in so early, staying out of
11 traffic.

12 Well, let us not delay any more than I have
13 already delayed us, so good morning, ladies and gentlemen.
14 I welcome all of you to the Staff's briefing of the
15 Commission on the status of our PRA Implementation Plan.
16 The use of this plan has been an integral part of the
17 agency's transformation into a more risk-informed regulatory
18 framework. It contains not only specific technical
19 activities in which risk-informed initiatives are underway
20 but it also provides a comprehensive structure to evaluate
21 all the programs and processes that are necessary to support
22 a risk-informed regulatory environment.

23 Much has been accomplished but there is much more
24 to be done, as we all know from activities related to the
25 maintenance rule and review of the IPEEE evaluations to the

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1 development of regulatory guidance and identification and
2 resolution of policy issues involved in risk-informing 10
3 CFR Part 50.

4 The Staff has planned a rather ambitious
5 presentation for us this morning, which I think we can get
6 through hopefully in a timely fashion, so therefore do any
7 of my fellow Commissioners have any opening comments they
8 would like to make or any clarifying statements?

9 [No response.]

10 CHAIRMAN DICUS: Then with that I believe we are
11 ready to start, so if you would start, Mr. Knapp, we are
12 ready.

13 MR. KNAPP: Certainly. Good morning, Chairman,
14 Commissioners.

15 CHAIRMAN DICUS: Good morning.

16 MR. KNAPP: I would like to begin by introducing
17 the Staff on this side of the table. To my immediate right
18 is Ashok Thadani, Director of the Office of Research; to his
19 right is Tom King, Director of the Division of Risk Analysis
20 and Applications in Research; and to his right is Pat
21 Rathbun, with the Division of Industrial and Medical Nuclear
22 Safety, NMSS; to my left, Marty Virgilio, Deputy Director of
23 NMSS; to his left Gary Holahan, Director of the Division of
24 Systems Safety and Analysis within NRR; and to his left
25 Scott Newberry, Deputy Director of the Division of

1 Regulatory Improvements within NRR.

2 The briefing that we are bringing you today will
3 focus principally on the last six months. The last PRA
4 implementation briefing which we presented was in January of
5 1999. The purpose is to both summarize our accomplishments
6 over the last six months and focus on the major activities
7 which are now underway. This work underway represents a
8 fundamental reassessment of our current programs and
9 practices, not only on reactors but also on materials and on
10 nuclear waste.

11 We are building on the previous work that we have
12 done and the successes that we have had in risk-informing
13 some of our activities. I think it is important to note
14 that as we continue this work licensees can utilize the
15 existing risk-informed approaches that we have and our work
16 will build on broader applications.

17 I will now turn the meeting over to Mr. Thadani,
18 who will carry the ball.

19 MR. THADANI: Thank you, Mal. Good morning. May
20 I have viewgraph number two, please.

21 As you can see from the outline of the
22 presentation, we do have a number of important issues that
23 we intend to discuss at this briefing. After a fairly brief
24 description of some of the recent accomplishments including
25 the use of risk information in the Reactor Oversight

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1 Program, we will move on to focus on key elements in terms
2 of what is the status and what are the key issues with
3 risk-informing Part 50 of the regulations, provide the
4 update on status of implementation of the framework for
5 materials regulation, and finally we will discuss the
6 strategy for integrating a number of interrelated issues,
7 and this was one of the concerns that was raised by
8 stakeholders. Let's go to viewgraph number 3, please.

9 As we stated in the SECY paper itself, SECY 99-211
10 only briefly discussed work related to risk-informing
11 reactor and nonreactor requirements as well as development
12 of a strategy for risk-informed regulation. While our
13 plant-specific activities have continued we have
14 significantly expanded our broader applications of risk
15 information both in the reactor as well as nonreactor
16 arenas.

17 For example, between March and June of this year
18 six papers were provided to the Commission and the
19 Supplements Chart Number 1 lists the papers that were
20 provided to the Commission. In addition to that, we have
21 also actively moved forward in our efforts to risk inform
22 Part 50 of our regulations. In this effort of course we are
23 very mindful of the input from the stakeholders.

24 Many important issues have been raised by
25 stakeholders and briefly GAO noted a need for a strategy to

1 integrate objectives, safety goals, activities and
2 timeframes in a cohesive fashion. The Center for Strategic
3 and International Studies noted the need for a clear safety
4 philosophy that is consistently applied, and also noted the
5 need for some methods enhancements in risk-informing certain
6 areas.

7 Industry has provided input. There is fairly
8 specific input in terms of some of the areas that they would
9 like for us to proceed on first.

10 Public interest groups have noted some of the
11 limitations in methods and pointed out the importance of
12 having a high quality standard and detailed reviews by the
13 NRC of PRAs prior to moving forward with risk-informed
14 regulation.

15 The Advisory Committee on Reactor Safeguards has,
16 of course, supported moving forward with risk-informing
17 rules, but they have also noted the need to make
18 enhancements in certain selected areas, and they have
19 identified those in the report that they just recently
20 issued which reviewed research programs. May I have the
21 next viewgraph, please.

22 There are a number of issues, as I said,
23 interrelated issues, and these require management attention.
24 Some of the examples of these issues are the need to develop
25 a strategy for risk-informing Part 50 and other efforts,

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1 feasibility of high level safety principles -- agency-wide
2 safety principles not just reactor, revision of reactor
3 safety goal policy -- we provided a paper on that recently
4 to the Commission as well as nonreactor issues.

5 The PRA Steering Committee plays a very active
6 role in these efforts. As you know, the committee consists
7 of Directors -- NRR, NMSS, Office of Enforcement. Regions
8 are represented by Luis Reyes of Region II and OGC
9 participates in these meetings and I chair the meetings.

10 Our focus has really been on taking these issues
11 and trying to make sure we can see how best to fit all these
12 pieces together. Now today's presentation is going to cover
13 a number of these issues, and next Gary Holahan will briefly
14 summarize some of the accomplishments of the agency in the
15 last six months. Gary?

16 MR. HOLAHAN: Thank you. I will be very briefly
17 summarizing accomplishment in a number of areas, two items
18 we'll on with additional presentations and those will
19 involve the Oversight Program and risk-informing Part 50.
20 The other areas that I would just like to spend a few
21 minutes on is the Reactor Licensing where we have put in
22 place Regulatory Guides and Standard Review Plans and a
23 number of pilot activities, and now we are really in an
24 implementation phase in which the Staff has been granting
25 license amendments and in some cases exemptions to

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1 regulations I think in areas where we would not have done
2 previously without having the risk assessment tools that we
3 currently have.

4 These areas are summarized in supplemental
5 viewgraphs two, three, four and five. Basically what they
6 are identifying is eight significant risk-informed licensing
7 actions that have come in over the last six months,
8 predominantly in the area of inservice inspection for
9 reactor coolant system piping, technical specifications,
10 inservice testing for pumps and valves, and also a very
11 significant item during this period that has come in, which
12 is the South Texas Project's request for an exemption to a
13 number of regulations and that activity will serve as a
14 pilot for the risk-informing of Part 50.

15 A number of items have been completed over the
16 last six months in similar areas. The emphasis has been on
17 technical specifications, ISI and IST. We expect
18 additional -- we have a number of applications under review
19 and we are expecting additional ones on those areas, and
20 what we are seeing is both generic activities where owners
21 groups and EPRI for example are coming into the Staff as
22 well as plant-specific items.

23 I think from the numbers what we see is there's
24 some significant activity but it is still a small fraction
25 of the licensing activities that the Staff are presented

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1 with, and so we still see that there are a few active
2 licensees and a number of others that have yet to involve
3 themselves in these risk-informed activities.

4 But still I think it is fair to characterize these
5 as technical matters. They is significant progress because
6 the Staff and the licensees have been engaged in issues
7 which I think we weren't previously capable of dealing with
8 in an efficient manner, and I think we have had sort of
9 proof that these things can done and can be done reasonably
10 efficiently and we are looking for additional examples in
11 the future.

12 Supplemental Slide 7 shows a list of activities
13 which are now in Research, previously the kind of activities
14 done in AEOD where operating experience is being looked at
15 through a risk-informed perspective, an important study on
16 initiating events, Westinghouse Reactor Protection System
17 Reliability Study, and substantial progress on reliability
18 data in cooperation with INPO. These are all important
19 steps forward in using more risk information in the
20 regulatory process.

21 I would also like to note that 12 additional
22 IPEEEs, the Individual Plant Examination for External
23 Events, were completed, and that program is progressing.

24 An important item that supports a number of these
25 areas is the ASME, ANS and the National Fire Protection

1 Association standards for the use of probabilistic risk
2 assessment.

3 The ASME standard is in a draft stage. We expect
4 by the end of the year to see that come out. The ASME
5 standard deals with at-power Level 1 issues. ANS has just
6 started up to deal with shutdown fire and some external
7 events. There was recently a meeting in San Francisco to
8 kick the shutdown activities off.

9 I think the Commission knows that the ASME
10 standard has been somewhat controversial. There have been a
11 number of comments. I think that document is undergoing
12 some review and I think over the next few months we will
13 have a better understanding of how comfortable the Staff is
14 on how that is sorting out, but that is an important issue
15 for streamlining and for the efficiency of using risk
16 information in the licensing and inspection and oversight
17 processes.

18 Recently there has been a Commission paper,
19 99-191, on the safety goal and I think there are a couple of
20 interesting thoughts in that paper. One is the proposal for
21 high level safety goals so that the materials and the
22 reactor activities really are being informed by the same
23 sort of high level insights. I think that is an activity
24 that will take some time but ultimately will help in
25 unifying the Staff's activities.

1 In the Training area we have I think a solid
2 program.

3 The staff and technical managers, those courses,
4 the 105 and the 107 courses are in place. They've been
5 supporting the need for training very well over the last
6 couple of years. Those seem to be working.

7 In the inspection area there's the P-111 course.
8 We are on track to have all the resident inspectors and
9 senior residents through that two-week PRA training course
10 by the end of fiscal 2000, and then by the end of fiscal
11 2001, all other qualified inspectors. So it looks like the
12 program is in place, and that's moving along well.

13 In the materials area there have been a number of
14 significant activities, framework for risk-informing NMSS
15 activities summarized in SECY-99-100 and the material
16 review, and later on in the presentation Pat Rathbun will
17 speak to past, present, and future materials programs. So I
18 think I'll leave it at that.

19 On viewgraph 6 I'd just like to spend a few
20 minutes on one of the major activities in the reactor area,
21 and that is the bringing of risk insights into the reactor
22 oversight program. I think it's fair to say both, it's both
23 a risk-informed and performance-based program, because it
24 makes much stronger use of performance indicators than the
25 previous inspection program.

1 What I've highlighted here is how risk information
2 is worked into that program, just to remind the Commission
3 this is what was presented back in SECY-99-007 and 99-007A.
4 So we are now in the implementation or in the pilot
5 implementation phase of using safety cornerstones based on
6 risk principles by using risk-informed and performance-based
7 approaches with performance indicators and inspection
8 insights relating to those cornerstones to identify the
9 safety significance of inspection findings and of
10 performance indicators.

11 The pilot program is now under way, started back
12 in June. There are still some developments going on in
13 parallel with that, but the process is being tested with
14 respect to testing the usefulness of performance indicators.

15 The significance-determination process, which is
16 an integral part of, you know, determining how important
17 individual findings are, that's being tested, and I think
18 that the inspection, you know, methods and guidance are out
19 there being tested as well.

20 So the program is on course, the actual in-field
21 test is being done through November, then there's a period
22 of considering the insights learned from that process, and
23 hopefully we'll be in position to put that program in place
24 in the spring of next year. And if you have any specific
25 questions on the findings to date, I think some of our staff

1 are here and can cover those. Otherwise we're prepared to
2 go on to risk-informing Part 50.

3 CHAIRMAN DICUS: Go on.

4 MR. HOLAHAN: Okay. Scott Newberry.

5 CHAIRMAN DICUS: Although we may come back and
6 address that question, let's go on now.

7 MR. HOLAHAN: Okay.

8 MR. NEWBERRY: Moving on to risk-informing Part
9 50, I'll cover our efforts on Options 1 and 2 as defined in
10 SECY-98-300. We received an SRM from the Commission on the
11 SECY, and we put together an effort that I'll describe in
12 the next viewgraphs.

13 My point on viewgraph 7 is not to go through the
14 individual rulemakings that are ongoing right now, which are
15 included in Option 1, but basically we were told in the SRM
16 to proceed on these rulemakings, and we are doing so. The
17 main point is that we're now proceeding in a structured way,
18 coordinating between the rulemakings listed there as part of
19 Option 1 and in Option 2, making sure that we're coordinated
20 as we move out to implement Option 2, that I'll talk about
21 in a minute.

22 Let's go to viewgraph 8. A few points on how
23 we're tackling the Option 2 aspect of risk-informing Part
24 50. I think it's fair to say that the effort is being
25 managed and staffed as a high-priority project. A team has

1 been formed from all divisions in NRR with direct ties to
2 the other offices, certainly Research, OGC, Enforcement, the
3 regions, and NMSS.

4 Management oversight is provided by the
5 risk-informed licensing panel. This is a panel that's been
6 in existence, has been very beneficial in dealing with all
7 risk-informed licensing matters. It's made up of division
8 management in NRR Research and OGC, and the panel is
9 actively involved in the Option 2 activity, providing
10 oversight guidance on I would say technical, sometimes
11 legal, and even management issues associated with the
12 effort.

13 Ashok mentioned the PRA Steering Committee
14 previously. He chairs the committee. It's an office-
15 director-level committee that has already met a couple times
16 on risk-informing Part 50, primarily at this point to
17 provide leadership and coordination and priority assignment
18 of resources. We'll be involving ourselves with that
19 committee as policy issues develop.

20 The team that's been assigned to this activity and
21 the risk-informed licensing panel members have participated
22 in several public meetings. To date those meetings will
23 continue certainly. Purposes are to work very hard to make
24 our efforts publicly available, and I'll talk about some of
25 the work we've done recently there, and of course to receive

1 input from our stakeholders. To date I think it's fair to
2 say that NEI with support of four pilot licensees have
3 provided most of the comment input. The pilots are, and
4 Gary has mentioned one, South Texas, and then Arkansas
5 Nuclear I, Fermi, and San Onofre.

6 Let's go to the next viewgraph.

7 On viewgraph 9 at the start we intend to provide
8 the Commission a rulemaking plan by the end of October, as
9 requested. We're working hard to do that. On this
10 viewgraph I've listed the primary tasks associated with
11 Option 2.

12 Just to step back, Option 2, as defined in
13 SECY-98-300, is the change of scope of Part 50 to a
14 risk-informed scope rather than a design-basis-oriented
15 scope of equipment that receives special regulatory
16 treatment. Special regulatory treatment is talked about in
17 that paper, but really refers to the highest order of
18 quality looking at harsh environment or seismic
19 qualification treatments like that. We'll be working with
20 internal and external stakeholders of course and utilize
21 pilot activities and exemptions as appropriate.

22 The rulemaking plan is now being developed. As I
23 said, it's due by the end of October, and we're in the
24 crunch of pulling issues together and approaches in that
25 rulemaking plan.

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1 I do list on the viewgraph some of the parts of
2 the plan which are important, and I'll talk about them here
3 briefly.

4 We're looking at approaches for revising the
5 terminology in Part 50. We suggest one in 98-300, and as
6 you dig into it, you find out there could be others that
7 might be more efficient, and certainly effective, not just
8 changing the definitions to safety-related, but perhaps
9 alternate definitions to better define what we're really
10 doing. And then you look at how to weave that into the
11 regulations in a clear and understandable way, and new ideas
12 are coming forward.

13 Our intent would be to put them in the plan and to
14 solicit, you know, stakeholder input on those approaches,
15 you know, which rules need to be considered in the effort.
16 We suggested some in the SECY. As we dug into it we find
17 that there are more rules that would fall within the scope,
18 and at a public meeting on the 26th of August, we put our
19 first cut at those rules out into the public so that we
20 could receive input as early as possible. Not just the list
21 of rules being important, but how did we determine which
22 rules, what were our criteria. We've identified preliminary
23 criteria for determining which rules would need to be
24 risk-informed. I think it's important to point out that we
25 now think we need to look beyond Part 50 -- Part 21, Part

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1 54, Part 100, and then some of the appendices to Part 50 as
2 well.

3 The methodology for reclassifying the equipment
4 based on its safety significance is going to be a very key
5 aspect of the rulemaking. We're looking at that now, and
6 two of the key issues in my view right now would be to what
7 extent can we efficiently take advantage of preliminary
8 work. There's been scoping and screening of equipment done
9 to date as part of other efforts. We need to look to see if
10 we can efficiently take advantage of that work, and of
11 course the review process itself, would each licensee have
12 to, you know, submit this to the staff for review, or could
13 we create a more efficient process for implementation.

14 As I said, our plan is to get the rulemaking plan
15 to you on schedule the end of October, and we're still
16 working to that date.

17 MR. HOLAHAN: Can I have viewgraph 10, please.

18 In SECY 98-300 there were four policy issues
19 identified. The first three of those are being dealt with
20 in an integral manner as part of risk-informing Part 50 and
21 on the same schedule. Policy Issue Number 4 is really being
22 dealt with separately and has a September 30th Commission
23 due date and that is the issue of clarifying the Staff's
24 authority and having guidance for applying risk-informed
25 decision-making in those cases where the licensees have not

1 asked for and have not submitted risk information.

2 The Commission was recently sent a paper on the
3 Callaway electrosleeving issue, which also reiterated the
4 need for clarify in the Staff guidance in this area.

5 So the cases that are of relevance to Policy Issue
6 4 are ones in which the licensees have submitted information
7 which appears to meet the deterministic regulations but for
8 which there may be some risk implications that the Staff
9 wishes to deal with, and the question is what guidance and
10 what Staff authority exists to do that.

11 We are currently developing a paper for the
12 Commission, due September 30th. A draft is currently in
13 concurrence. It was shared with the ACRS last month. There
14 was an ACRS meeting earlier this month on September 2nd to
15 get their input. A proposed approach was discussed with
16 both the PRA Steering Committee and the Risk-Informed
17 Licensing Panel.

18 The general approach that is being proposed and
19 will be sent to the Commission for approval uses the concept
20 of identifying special circumstances. There needs to be
21 some reason why the normal deterministic regulations are not
22 providing the level of safety that was expected or
23 envisioned when the regulation was first written.

24 This is part of our desire to preserve the
25 presumption that the regulations under normal circumstances

1 provide adequate protection and simply meeting the
2 regulations is a way of showing that the plant is safe
3 enough and that license amendments ought to be granted.

4 We have seen that there are unusual circumstances.
5 In fact, we probably think of them as being rare
6 circumstances, under which new methods, new materials, a
7 different approach to an issue is identified, and it is
8 different from what the Staff and I think the Commission had
9 envisioned when a regulation was written, and so there is
10 the possibility that the regulation dealt with the way the
11 Staff would normally, with its existing guidance, would not
12 provide the level of safety that was desired.

13 In those cases we would go on to first identify
14 what is special about this case, secondly to use an
15 integrated decision-making process like that included in Reg
16 Guide 1.174, which includes both risk and deterministic
17 insights, to go on and use the guidelines in 1.174 to test,
18 as a screening test of whether adequate protection ought to
19 be questioned or whether it can be assumed for a given case,
20 so this is sort of a one-sided test.

21 If an application is consistent with the Reg Guide
22 1.174 guidelines, which is about the same as saying if the
23 licensee had submitted it as a risk-informed initiative it
24 would have been approved, so at that point I think we would
25 assume that something could be approved. But if there are

1 unusual circumstances and it is outside the guidelines of
2 Reg Guide 1.174, it would trigger the Staff to question
3 whether adequate protection would be preserved in that
4 license amendment, and at that point we would take all the
5 existing information into consideration -- deterministic
6 engineering insights, safety margins, risk insights, the
7 defense-in-depth implications, and also look at anything
8 peculiar to that case -- how long such a condition would be
9 in place, whether there were compensatory actions, what it
10 meant for an individual plant, and we would propose to
11 develop a safety decision based on all of those insights and
12 determine whether at that point a license amendment ought to
13 be granted or not.

14 Process-wise what we have proposed is to lay this
15 general approach out for the Commission for its approval.
16 If the Commission agrees or for whatever guidance the
17 Commission gives us we would then go forward and modify
18 office procedures, Regulatory Guides, Standard Review Plans
19 to be commensurate with that, and those documents would be
20 taken through the normal stakeholder process. They would be
21 put out for comment, probably have meetings or workshops on
22 those. They would go through CRGR, ACRS and the rest of the
23 process.

24 For the end of September we will be presenting a
25 paper with a general approach, looking for Commission

1 guidance.

2 One of the issues that the Staff has been
3 struggling with somewhat is if or how the concept of cost
4 and cost benefit and the backfit rule can play a role in
5 this process. Normally license amendments are granted
6 completely separate from backfit considerations, but it has
7 been suggested that there may be some usefulness to that
8 concept and how that would work in is still an ongoing
9 thought. It was discussed with the ACRS and we expect to
10 have a position to bring to the Commission by the end of the
11 month.

12 With that, I think I have said everything on the
13 Slide 11 except perhaps that in this process we have
14 reconfirmed basically what we said in 98-300, which is it
15 doesn't appear that any rulemaking is necessary. The
16 Commission's authority and the Staff's authority to act on
17 risk information in the licensing process exists in the
18 regulations. What we lack is guidance documents on exactly
19 how to do that.

20 I would like to turn the presentation now over to
21 Tom King to discuss Option 3 of risk-informing Part 50.

22 MR. KING: All right, thanks, Gary.

23 What I am going to discussion the next several
24 slides is our efforts related to risk-informing the
25 technical requirements of Part 50 including the integration

1 and coordination with the Option 2 work on the scope and
2 some of the key issues that are being faced in this effort.

3 In SECY 98-300 Option 3 is the study of technical
4 requirements. Our plan right now calls for two products to
5 be developed under this Option 3. The first is our plan to
6 do the study, which we owe to the Commission the end of
7 October of this year.

8 That plan will be more than just a schedule. What
9 we intend to have in that plan is a summary of the approach
10 we will take in doing the study, which we will discuss when
11 we get to the next couple of slides, the criteria we plan to
12 use for selecting candidates for change, any of the key
13 issues that need to be faced as we go through this study and
14 certainly our schedule.

15 When we talk about technical requirements we are
16 talking about more than just the regulations. Certainly the
17 regulations have some technical requirements in it but a lot
18 of the detailed technical requirements are contained in
19 Regulatory Guides and Standard Review Plans. They deal with
20 things like analysis methods, assumptions, acceptance
21 criteria, and so forth. All of those are included in the
22 study when we talk about technical requirements.

23 The second aspect of this work is the study
24 itself. What the study will include is it will identify
25 those area that are candidates for change. It will identify

1 the scope of the changes that we would recommend, and again
2 that would include regulations or any changes needed to the
3 supporting Reg Guides and Standard Review Plans.

4 It would provide enough description of the work
5 done to establish the feasibility of making those changes.
6 It will identify any issues that need to be dealt with in
7 implementing the changes and the recommended priority.

8 We would play to provide this in a paper to the
9 Commission for your approval and, as requested in the SRM
10 that approved proceeding with this study, if there are any
11 things that come out of this study that look like they
12 should be proceeded with on an expedited basis, we wouldn't
13 wait until the end of the study. We would bring those
14 forward on an individual basis for Commission approval.

15 In developing the plan and the study itself, we
16 are going to get stakeholder input and discussions with
17 ACRS. In fact, next week we have a public workshop
18 scheduled where we are going to discuss our plan for doing
19 the study and solicit feedback. We have a meeting with ACRS
20 schedule the week after that, where we are going to do the
21 same thing. We would expect to schedule additional
22 workshops and ACRS meetings as we get into the study and
23 have technical results to discuss. If I could have Slide
24 13, please.

25 One of the key things we need to pay attention to

1 in doing the Option 3 study is maintaining close integration
2 and coordination with the Option 2 work. To do that we are
3 maintaining a consistent approach in that we are going to
4 utilize the principles of Reg Guide 1.174. In doing the
5 Option 3 study, we'll consider defense-in-depth, we'll
6 consider safety margins. The way we are going to bring in
7 risk is to look at small changes around the plant's current
8 risk profile. We are not going in and trying to drive
9 plants to some new level of risk in doing this study. We
10 think that is certainly consistent with the Commission's
11 performance goal of trying to maintain safety.

12 We plan to retain the design basis concept. Now
13 what we would envision is this would be, when we are all
14 done, a risk-informed design basis, but we are not throwing
15 away the idea of design basis accidents and so forth. What
16 we want to do is make them consistent with what risk
17 insights tell us.

18 Whatever the Option 2 activity comes up with in
19 terms of a risk-informed scope definition, I would certainly
20 think that would apply to the technical requirements as
21 well, so we want to maintain close contact and review that
22 in terms of its applicability to the Option 3 technical
23 requirements.

24 Similar to Option 2, we envision the use of pilot
25 plants to test out some of these concepts and ideas for

1 technical changes to the requirements. Slide 14, please.

2 There are a number of issues that we are going to
3 have to deal with in doing both Option 2 and Option 3. What
4 I wanted to do is just give you an early indication of what
5 some of these are likely to be. There is a certainly a
6 policy issue that remains on the plate that was in
7 SECY-98-300 and discussed in your June SRM, that has to do
8 with selective implementation. If you recall, the
9 Commission felt that this issue, at the time SECY-98-300 was
10 provided, it was premature to deal with this issue.

11 We agree with that, but we still owe you for both
12 the risk-informed scope and the technical requirements.
13 Should all risk-informed changes be implemented as a
14 package? Should there be some bundling within, or should
15 licensees be able to pick and choose the ones that they want
16 to implement?

17 So as we proceed into this and get further along
18 and identify what these change are, we still owe you a
19 recommendation on that issue.

20 Regarding implementation itself, what we are doing
21 is we are taking an approach that is looking at existing
22 requirements and how to risk-inform them. We are not
23 starting with a clean sheet of paper and rewriting Part 50.
24 And, as mentioned previously, we are retaining a design
25 basis concept and we are using the risk-informed principles

1 in Reg. Guide 1.174.

2 Technical issues. One of the main ones is, what
3 are the criteria we are going to use for selecting the
4 candidate rule changes and proposing modifications to Part
5 50?

6 Risk-informed regulation is a two-way street, so
7 there will certainly be criteria that have to deal with
8 current requirements that have little or no safety benefit.
9 What do we do with those? How do we get rid of excessive
10 conservatism? But also aware, does the risk-information say
11 safety enhancements are justified?

12 If I could have Slide 15, please.

13 That will lead us to developing a set of criteria
14 to deal with those three aspects I just mentioned, and we
15 envision the criteria will be consistent with the agency's
16 performance goals in that we will have criteria that will
17 address maintaining safety. That, again, will get back into
18 using the Reg. Guide 1.174 considerations. We plan to have
19 substantial stakeholder input, which we believe will help
20 enhance public confidence in what we are doing. As I
21 mentioned, the workshops, ACRS meetings that are planned.

22 We envision cost benefit considerations will be
23 used as well as looking at areas where there is excessive
24 conservatism. This would be considerations in reducing
25 unnecessary burden and also improving effectiveness and

1 efficiency of what the technical requirements are. And we
2 would envision using a performance-based approach where
3 practical in making recommended changes to the technical
4 requirements.

5 With that, I will turn it over to Pat Rathbun, who
6 will discuss the NMSS activities.

7 MS. RATHBUN: Thank you. During my presentation
8 here today, I will be providing you with an update on the
9 status of NMSS efforts in risk analysis. Before I move into
10 those details, though, there are two important points that
11 we need to keep in mind when we are looking at NMSS's
12 approach to risk analysis. The first one is that we are
13 fully participating in the overall agency strategy to bring
14 the risk-informed approach into our regulatory and licensing
15 activities. Conceptually, our approach is based on and
16 closely parallels the approach taken by both NRR and
17 Research as they develop and implement the PRA program.

18 Now, having said that, though, I want to note that
19 risk analysis methodologies used by NMSS in the past have,
20 for the most part, differed from traditional PRA approach
21 used by the rest of the agency. Now, this is, of course,
22 due to the heterogeneous licensee base and array of nuclear
23 materials we regulate. With one notable exception, and I
24 will talk about it in a minute, our approach is risk
25 analysis. We do, and have started working on PRA, but I

1 just want to say upfront that this may not be too possible
2 for NMSS.

3 All right. Having said that, I do want to go back
4 now and talk just a little about the work we have done in
5 risk analysis. Most of this has been -- I need Slide 16.
6 Most of this has been done and briefed to you, but I just
7 want to quickly revisit it. We have extensive experience in
8 using performance assessment. By and large, this technique
9 was developed by the NRC and works well with the risks
10 associated with geologic disposal of high and low level
11 waste, and we believe in the residual site contamination
12 after decommissioning.

13 An early effort to apply risk assessment
14 methodology to the analysis of transportation risk is known
15 as the Modal Study, and I have referenced that for you in
16 the slide. This is a study of and response to severe
17 accident highway and railway accidents. We are considering
18 revisiting the Modal Study and taking a long look at the
19 methodology and the way this was approached. It appears
20 promising.

21 Another technique which has worked for us is the
22 Integrated Safety Analysis, which, of course, is the risk
23 assessment technique developed by the chemical process
24 industry after Bhopal, and it has proven to be a good way of
25 looking at hazards for us.

1 In nuclear medicine, we actually did try real PRA.
2 We used PRA to look at the gamma knife, which bears some
3 parallels to engineered systems. It has a hydraulic system
4 that can fail, leaving the patient exposed to risk. It was
5 moderately successful, and we would have to take a look at
6 that, but always in the use of PRA, you have to remember
7 that it will not model human error effectively and most of
8 ours comes about in human error.

9 The Nuclear Byproduct Material Risk Review Group
10 has published for comment two significant NUREGs that are
11 noted in Slide 1. This would be an extension and an attempt
12 to develop risk analysis for the fields of radiography,
13 nuclear medicine and well logging. It is a substantial
14 document and well worth your time.

15 Now, although NMSS had worked in risk analysis, we
16 had not developed a fully integrated approach. With the
17 publication of SECY-99-100, a framework for risk-informed
18 regulation, and the direction that you gave us in the
19 subsequent SRM, we believe we now have laid out the
20 groundwork for carrying out an integrated program of risk
21 assessment.

22 If you could give me the next slide, please.

23 We have set out a five-step process. Also I am
24 not going to go through that with you because it is very
25 close to what Tom just discussed with you, and I have

1 provided it for you in Background Slide S-8.

2 We are now in the process of carrying out this
3 five-step process and trying to implement a risk analysis
4 approach that will also include risk management. We are
5 working with a joint ACRS-ACNW subcommittee, and we are
6 working now -- that would go too far -- we are beginning to
7 look at the material safety goals and are quite excited
8 about the new paper Joe Murphy sent up to you and are
9 planning to work closely with him.

10 We also are working on an enhanced participatory
11 process and right now we have people -- Don Cool and Seth
12 Copelan will be speaking at the Organization of Agreement
13 States meeting this week. We will be also speaking to the
14 fuel cycle licensing efforts and we are planning a
15 full-scale meeting in March, which would be the first of our
16 participatory workshops.

17 I guess we'll go on. Ours is very short because
18 we are really just beginning. I want to go on to our recent
19 accomplishments which I have already touched upon.

20 You have approved the plan. We have met with the
21 ACRS. Most importantly though, we have formed a task force
22 to try to bring this activity to the forefront. We have
23 formed a short-term task force, sort of similar to the one
24 we did for the DOE oversight task force and we plan to have
25 this in effect for about six months and we hope that this

1 group, which is quite senior people, many of whom have
2 worked in risk analysis in the offices, can bring this
3 together and lay out a framework. We are then planning a
4 permanent organization in the Division of Industrial and
5 Medical Nuclear Safety.

6 I have already touched upon the publications, and
7 the last thing I want to mention is the Part 35 rulemaking.
8 We have worked very hard to try to make this a risk-informed
9 approach. Thank you. That concludes our presentation.

10 MR. KING: Okay. If I could have Slide 19,
11 please.

12 The Commission's August, 1995 PRA policy statement
13 expressed their desire and expectations for the use of risk
14 information in regulatory matters. As you have heard, there
15 are a number of broad scope activities underway in the
16 program offices to implement this policy. These are also
17 being carried out consistent with the agency's Strategic
18 Plan.

19 Integration and coordination are important to the
20 success of all of these activities, and that includes both
21 internal integration and coordination as well as external.
22 Such integration and coordination will lead to consistency
23 in approaches, goals, and guidance. It will also facilitate
24 efficiency in the development of the infrastructure needed
25 to actually implement risk-informed regulation in NRC,

1 whether it is analytical tools, data, resources -- Staff,
2 contractor, training and so forth.

3 Therefore we have several activities underway that
4 are directed toward helping to ensure this coordination.
5 What I wanted to talk about was three specific ones in that
6 area, if I could have Slide 20, please.

7 The first of these is what is called a strategy
8 for risk-informed regulation. GAO did an audit last year on
9 NRC's risk-informed regulation activities, and in their
10 March, 1999 report recommended that the agency develop such
11 a strategy. The purpose would be to describe the overall
12 agency plans and approach for risk-informed regulation, a
13 road map, if you will, for where the agency wants to go in
14 risk-informing its activities.

15 That would include criteria for deciding what do
16 we want to risk inform, goals, approach, technical needs,
17 and so forth, for how we would do the risk-informing, and
18 the priority, resources, and schedule that would be used to
19 decide when we would risk inform these activities. Certainly
20 this would support implementation of the agency's Strategic
21 Plan.

22 Former Chairman Jackson wrote back to GAO and
23 agreed with this recommendation and said we would embark
24 upon developing such a strategy. It was discussed briefly
25 in the most recent quarterly update of the PRA

1 Implementation Plan and we are committed in there to provide
2 to the Commission in mid-September an outline of this
3 strategy document, which is currently working its way
4 through concurrence up to the Commission.

5 The second major activity is what we call high
6 level safety principles. These were discussed in SECY
7 99-191. The idea behind those was that when we were looking
8 at the revisions to the Reactor Safety Goal Policy it was
9 apparent that a number of things that we were looking at in
10 that context were really agency-wide issues. They weren't
11 reactor issues -- things like adequate protection,
12 defense-in-depth, regulatory analysis guidelines, the
13 concept of how safe is safe enough, and so forth.

14 At the same time we knew NMSS was working on their
15 framework and it occurred to us that perhaps it would be
16 useful to develop these set of what we call high level
17 safety principles to deal with these issues in an
18 agency-wide fashion. They could then be used to provide
19 overall direction and consistency to all the agency
20 activities, risk-informed activities. They could also be
21 used in the nonrisk-informed activities as well.

22 So we took a small effort to develop the concept,
23 discussed it with ACRS. They said it was worth proceeding,
24 at least to look at the feasibility of doing this. We
25 proposed to the Commission in the SECY to proceed and do the

1 feasibility study and come back to the Commission in March
2 with a recommendation in this area.

3 The third major activity is the revision to the
4 Reactor Safety Goal Policy, which again was discussed in the
5 SECY 99-191. It deals with a number of issues related to
6 reactors as well as the broader issues that we talked about
7 under the high level safety principles and it has to be
8 coordinated very closely with the high level safety
9 principles where we owe the Commission recommendations on
10 these issues again in March of next year. I would like to
11 have Slide 21.

12 In summary, I just wanted to emphasize the key
13 points associated with our activities in the risk-informed
14 area.

15 One, that we are trying to systematically assess
16 and risk-inform our programs. Certainly the plant-specific
17 activities will continue the progress made to date on, for
18 example, risk-informed licensing amendments. It is not
19 going to slow-downed or terminated because of these
20 additional efforts. We are trying to bring stakeholder
21 concerns in in all the areas that we are working in. We
22 will bring issues to the Commission as they are developed.

23 As Mal said in his opening remarks, the work that
24 is underway now in these broad areas is going to result in
25 fundamental changes to regulatory programs and in doing that

1 clearly the theme you heard today is that integration and
2 coordination of these activities is very important to the
3 success.

4 That concludes our briefing.

5 CHAIRMAN DICUS: Okay, thank you very much.

6 I am going to ask a couple of questions and turn
7 it over to my fellow Commissioners, and one of the questions
8 is very philosophical, and there are any number of briefings
9 at which I could probably ask this question, but it so
10 happens that I am going to ask it in this one -- as I said,
11 it's somewhat philosophical.

12 It is something that Tom King said when he talked
13 about one of the goals that we have is to maintain safety
14 and we are being perhaps criticized a little bit by our
15 foreign colleagues who say you shouldn't maintain safety,
16 you should promote and enhance safety.

17 Now also the industry from time to time tells us
18 that we keep raising the bar, keep making it tougher,
19 tighter, which would imply promoting safety or enhancing
20 safety.

21 If we had the goal 10 years ago of maintaining
22 safety, would be a different agency today than we are, and
23 if you look forward to 10 years, if that goal is to maintain
24 safety, what differences do you see, if any, in how we might
25 respond and where the bar might in fact be?

1 It is a very philosophical question. If you want
2 to think about it, that's fair too, and if you want to think
3 about it until the next briefing, I'll bring it up again,
4 whatever that briefing may be, but anyway, does anyone want
5 to take a stab at it?

6 COMMISSIONER MERRIFIELD: In three sentences or
7 less.

8 [Laughter.]

9 CHAIRMAN DICUS: Right -- three sentences or less.

10 MR. HOLAHAN: I'll take a stab at it.

11 MR. THADANI: Go ahead, Gary.

12 MR. HOLAHAN: I think it is an issue for everyone
13 to think about. It seems to me that when you establish a
14 goal of maintaining safety there are certain assumptions
15 that you must have about the maturity of an industry, about
16 how well you understand it both in terms of data and in
17 terms of methods of analysis, how comfortable you are with
18 the overall management structure, and things like that.

19 So I think if you go back a number of years, and
20 whether it is 10 or 15 I think probably the conditions
21 didn't exist -- at least personally in my judgment -- with
22 respect to licensee performance, the stability of their
23 management structures, the clarity of all of our
24 understandings of what the safety issues are, so I would
25 think probably at that point it wouldn't have been

1 appropriate to have such a standard.

2 Now how close are we now to being comfortable with
3 licensee performance and with having a clearer picture of
4 what is safety? I think it is a goal that makes much more
5 sense now and I think it is not a bad idea to raise this
6 issue at this meeting, because I think probabilistic risk
7 assessment in my mind is what brings a lot of those insights
8 to the table, to say I am now comfortable in saying I
9 understand the plants well enough to have such a goal.

10 However, I think that when you say "maintaining
11 safety" at least to me that means maintaining the level of
12 safety that you think you have, right? You may very well
13 discover that some things aren't quite what you thought they
14 were and have to have safety enhancements or corrective
15 actions or something. It doesn't mean that if we discover
16 problems we are not going to deal with them. It means
17 maintaining the level of safety that the industry and the
18 Commission has come to think of it.

19 MR. THADANI: If I may add to that, I completely
20 agree with what Gary said, and I think it is fair to say
21 that there is a lot of concern out there about what we mean
22 by maintaining safety, what do we mean by risk-informing our
23 regulations, and what are some of the implications in the
24 international arena.

25 I think it is very important for us, and perhaps

1 we don't do it well enough ourselves, to clearly say what do
2 we mean by maintain safety? It does not mean that we are
3 going to terminate some of the things we do, such as looking
4 at operational experience, whatever work we are doing in the
5 Office of Research, insights that we get from various
6 arenas -- that we will look at those and we will make
7 determinations in accordance with the backfit rule to see if
8 any additional requirements should be imposed consistent
9 with the safety benefits as well as cost considerations.

10 Tom touched upon it in his discussions. It is a
11 two-way street and perhaps we haven't articulated this
12 aspect enough to say our intention is not just to remove an
13 unnecessary burden using these techniques but we will not
14 stop looking for potential areas for improvement, but we
15 will take costs and benefits into consideration.

16 I think I have also been contacted by a number of
17 people from other countries. They raise the same kind of
18 issues, but what does it mean? Part of my sense is, part of
19 it is the articulation of the broad safety philosophy and
20 not just getting hung up on what do we mean by the term
21 "maintain safety." I am urging internally that we have to
22 keep bringing this sort of language in when we talk about
23 maintaining safety in order to make sure that there is
24 confidence -- not just the international community but we
25 have heard from some stakeholders in this country the same

1 concern.

2 CHAIRMAN DICUS: Okay. Does NMSS want to add
3 anything to that?

4 MS. RATHBUN: No.

5 [Laughter.]

6 MR. VIRGILIO: Chairman, I would add something to
7 that.

8 In addition to maintaining safety, one of our
9 draft performance goals is also to look to look at
10 efficiency --

11 CHAIRMAN DICUS: Right.

12 MR. VIRGILIO: -- effectiveness and realism, and
13 within that I think what we are looking at is how do we
14 sharpen our safety focus so, while on the one hand, what we
15 are doing is maintaining a level of safety we are also
16 looking what are we looking at, what are we focusing on, how
17 do we focus our attention and our licensees' attention on
18 what is most important from a safety perspective, so if we
19 are being criticized on one hand for just maintaining safety
20 I think they are missing the complete picture, where we are
21 looking at other activities, other initiatives that would
22 sharpen the focus.

23 MR. HOLAHAN: Can I add one thing?

24 CHAIRMAN DICUS: Go ahead.

25 MR. HOLAHAN: I hope this doesn't sound

1 inconsistent -- what I think.

2 CHAIRMAN DICUS: I hope it doesn't either.

3 [Laughter.]

4 MR. HOLAHAN: I think you can have expectations of
5 increased safety while you have a regulatory program focused
6 on maintaining safety, and that is because our experience
7 with Regulatory Guides, for example, where we said, well,
8 you know, licensees can use risk insights and they are
9 allowed to make burden reductions and risk increases, in
10 fact they are not out there looking for risk increases.
11 What we see is in fact on the whole that program has
12 resulted in safety improvements and burden reductions, so my
13 personal expectation is even while we are risk-informing the
14 regulations consistent with maintaining safety, I expect
15 actually the plants to get safer because both we and the
16 licensees will understand them better.

17 CHAIRMAN DICUS: And I agree and I will go back to
18 the transcript and copy down notes, so that I have got
19 answers to my foreign colleagues, but I appreciate that
20 input very much, and I think I have used up more than my
21 five minutes, so Commissioner Diaz?

22 COMMISSIONER DIAZ: This is part of your time in
23 here.

24 [Laughter.]

25 COMMISSIONER DIAZ: If you look at page 15, I

1 think what Chairman Dicus is bringing out when it says
2 "effectiveness, efficiency and realistic decision making/
3 excessive conservatism" -- meaning that we are going to
4 eliminate excessive conservatism -- you can easily put
5 another bullet there, "safety enhancements" -- you know,
6 with due consideration of backfit or whatever it is. It
7 makes a more complete picture.

8 Now I will start with my time.

9 [Laughter.]

10 CHAIRMAN DICUS: I am watching.

11 COMMISSIONER DIAZ: First, I think I am viewing
12 this briefing as kind of setting a series of positions
13 because I guess the meat of the information will be coming
14 very rapidly to the Commission. I understand that. That
15 will have a significant amount of specificity.

16 A quick comment. Somebody made a comment that
17 preliminary criteria for determining which rules should be
18 risk-informed, and that is really setting the stage of how
19 these things are developed. I'd really appreciate getting a
20 copy of that, because sometimes the Commission sees the end
21 result and we don't see the thought processes.

22 MR. NEWBERRY: I'll take that action and get it to
23 you today -- to all of the Commissioner offices.

24 COMMISSIONER DIAZ: Appreciate it, and now that I
25 said that I realize that cornerstones are under development.

1 I contradict myself and I'll ask a couple of questions.

2 Now first, there is a statement in Slide Number 10
3 that says Guidelines for Questioning Adequate Protection.
4 Of all of the things that I saw here to me that is a very
5 fundamental and very major statement, because in reality to
6 enable to do that you are going to have to set hierarchies
7 of call it safety or risk platforms that would allow us to
8 eventually make regulatory decisions.

9 So I am very keen in seeing how these guidelines
10 for the question of adequate protection develop. I think
11 this is the fundamental work of the agency, and it might
12 have far more bearing on risk than many of the immediate
13 things.

14 I had a question, issue, no rulemaking necessary.
15 We are talking of what part of the work? You know, because
16 eventually there is going to be some rulemaking necessary.

17 MR. HOLAHAN: On the specific policy issue number
18 4 is what we are saying.

19 COMMISSIONER DIAZ: Specific policy issue and that
20 is it, okay, in other words.

21 MR. HOLAHAN: Right.

22 COMMISSIONER DIAZ: And that is the short-term,
23 like March of next years, something like that?

24 MR. HOLAHAN: I think what we said is -- well,
25 actually, what we owe to the Commission by September 30th is

1 both a plan and an interim position, and so what we will be
2 asking for is an approach. I think the schedule will run
3 out, probably -- I don't know that we have set it in
4 concrete yet. But for stakeholder input, something like six
5 or nine months would not be unusual. But we would also be
6 asking the Commission to approve the interim use of such
7 guidance if those cases were to come up.

8 COMMISSIONER DIAZ: Okay.

9 MR. THADANI: May I comment?

10 CHAIRMAN DICUS: Sure.

11 MR. THADANI: I think, as you correctly noted, it
12 a pretty complex issue, and it is also clearly linked with
13 the hierarchy we have been talking about in terms of the
14 safety philosophy and coming down to safety goals and their
15 relationship with adequate protection. So there are a
16 number of interrelated issues that would require careful
17 deliberation.

18 COMMISSIONER DIAZ: Thank you. On Slide 13,
19 integration and coordination of Options 2 and 3. I might
20 just bring up the fact that we are trying to use Reg. Guide
21 1.174 as a guideline, and that deals many times with changes
22 to the risk. There is another envelope or another issue
23 which is, you know, what is the absolute value of where
24 things have been set. So I just want to caution there are
25 times we don't want to take a square and try to put it

1 inside a circle. You know, the areas are outside of the
2 principles in Reg. Guide 1.174, and we want to be apprised
3 of which ones are those. I don't know whether work is going
4 on on that, but there is a difference in how you look at
5 these things.

6 MR. THADANI: We certainly, under Option 3, we are
7 looking at -- you are correct, first of all, but there are
8 issues beyond what is in Reg. Guide 1.174. The intent of
9 that Reg. Guide was to deal with license amendments, as you
10 recall. And what we are talking about now is significantly
11 broader applications, and we have to look at the whole map.
12 We cannot just look at the parts of core damage frequency
13 and large early release frequency.

14 There are two sides, if you were to draw a curve,
15 so to speak, the early part of the curve, that is, even
16 though there may be small accidents or small releases, small
17 events, one has to carefully consider how what we are
18 talking about, that is folded in. If you were to look at a
19 frequency consequence curve, so to speak, two parts, or the
20 very first part of that curve, how are we going to deal with
21 that? Very small events, they happen. What frequency?

22 At the last PSA conference, Commissioner Diaz, you
23 were there and I was there, Brookhaven raised the issue. If
24 the leak that they had, and the consequences that they
25 suffered as a result of the event, how would that be

1 considered as we sort of restructure the regulatory
2 philosophy? So under Part 3, the options, we are going to
3 carefully look at the whole map and see what issues and how
4 well to integrate this.

5 COMMISSIONER DIAZ: I do agree, it is a good base,
6 but it is just a base, and sometimes doesn't fit the
7 picture.

8 In the same slide, there is new statement in here,
9 risk-informed/deterministic requirements. Again, the issue
10 of hierarchy will come into play. Which one comes first?
11 Okay. And that is a major decision-making, because unless
12 we establish the hierarchy, you know, there will be a
13 tendency to just abide by what was existing, because that is
14 comfortable. I think we need to at time challenge this
15 established hierarchy to be able to really become
16 risk-informed.

17 That is a comment, and then to NMSS, and I am not
18 criticizing, but the statement was made that PRA will not
19 model human errors. I think you can say that it does not
20 presently. But it certainly is quite possible that it will
21 model human errors, as long as we are willing to establish
22 the right distribution. And that is one thing that, you
23 know, probably we will see in this Commission. But it is a
24 major issue that will have to be addressed.

25 MS. RATHBUN: I agree. Thank you.

1 COMMISSIONER DIAZ: We will have to address the
2 distribution.

3 And a question to NMSS. What is the difference
4 between the NMSS task force and the NRR dedicated team? The
5 same thing or different?

6 MS. RATHBUN: I think that ours is very new and my
7 guess would be that it will be identical as it goes on.

8 COMMISSIONER DIAZ: Okay. Thank you.

9 MR. HOLAHAN: Could I follow up on something that
10 Commissioner Diaz said?

11 CHAIRMAN DICUS: Yes.

12 MR. HOLAHAN: The thought that -- the sort of
13 which comes first thought about the PRA or deterministic
14 issues. I am hopeful that at some point, and it may not be
15 close, but, ultimately, that the deterministic requirements
16 are sufficiently compatible and integral with the risk
17 insights that, in fact, there is no competition between
18 them.

19 For example, if you could imagine the Chapter 15
20 Safety Analysis Report, basically dealing with accidents in
21 the context, let's say of the success criteria that are used
22 in the PRA, then, in fact, you would have an arrangement in
23 which the deterministic analysis and the risk analysis were
24 so integral that you wouldn't have to worry about, you know,
25 which is more important than the other and where should I

1 put my priorities, they, in fact, would be fully compatible.
2 Hopefully, we can get to such a point.

3 COMMISSIONER DIAZ: Yes, that certainly would be
4 the ideal that we would like to do, but, first, we are going
5 to have to move the immovable object with the irresistible
6 force.

7 CHAIRMAN DICUS: Commissioner McGaffigan.

8 COMMISSIONER McGAFFIGAN: My understanding, we are
9 going to have a couple of rounds, is that --

10 CHAIRMAN DICUS: No, as many as we need.

11 COMMISSIONER McGAFFIGAN: Okay. Let me just try
12 to divide the questions up into rational groups then. On
13 Slide 10, when, Mr. Holahan, you were talking about it, you
14 were talking about giving us this approach, and unlike on
15 Options 2 and 3, where there were stakeholder workshops and
16 all that sort of thing, what you talked about was getting us
17 to conceptually buy into something and then Reg. Guides and
18 Standard Review Plans and stakeholder comment would follow.

19 MR. HOLAHAN: Yes.

20 COMMISSIONER McGAFFIGAN: But with us having
21 pretty much said how it was going to turn out, and I am
22 wondering whether we need stakeholder involvement at the
23 start on this conceptual approach you are laying out, or how
24 much meat -- is it going to be so conceptual that you can
25 hang anything on it during the later process, or is it going

1 to -- what is it we are going to be voting on?

2 MR. HOLAHAN: No, I think it is not so vague that
3 it could mean anything in the future. You know, here we
4 have the problem of not wanting to go out for public comment
5 on something that might be very different from what the
6 Commission would be comfortable with and, frankly, also have
7 a schedule which I think is not compatible with
8 stakeholder --

9 COMMISSIONER McGAFFIGAN: Let me just ask you a
10 question.

11 MR. HOLAHAN: So we have broken it into a two
12 stage process.

13 COMMISSIONER McGAFFIGAN: I am learning from the
14 Callaway experience with the electrosleeving. Under this
15 approach, whose burden of proof will it be if somebody gets
16 kicked into risk-informed space, having submitted a
17 perfectly straightforward deterministic amendment that would
18 have been approved? Who has to do all the analysis and pay
19 for it and whatever if a staffer decides, through whatever
20 this process is, that this is a special circumstance, and,
21 by God, we need a much more elaborate set of analyses to
22 approve this amendment?

23 MR. HOLAHAN: Let me say first that we expect
24 these to be unusual and sort of hand-wringing cases. So I
25 don't expect individual staffers to be making the decisions

1 on these cases. They are probably management decisions and
2 maybe even, you know, licensing panel or PRA steering
3 committees. And I imagine it going through stages in which
4 when the staff has a concern that there might be risk
5 implications to a license amendment request, that we would
6 first go and ask the licensee to voluntarily provide
7 additional information to address the risk significance of
8 the issues. And if the licensee does, you know, then I
9 think we have all the information on the table to make
10 decisions.

11 If the licensee concludes that, no, they feel that
12 they meet the regulations, they meet the deterministic
13 regulations, they meet what it says in the book, and they
14 don't want to provide, you know, any additional information,
15 then the burden of proof is on the staff to determine that
16 granting such an amendment would be inappropriate. In my
17 mind, unsafe is the same as not providing adequate
18 protection. So that burden is on the staff.

19 COMMISSIONER MCGAFFIGAN: Okay.

20 MR. HOLAHAN: That is the advice that we have
21 gotten from OGC consistently. I think this where we are.

22 COMMISSIONER MERRIFIELD: Commissioner, as the
23 lawyer at the table, I know we have had staff talking about
24 burdens of proof, which is a legal term. Perhaps we may
25 want to just clarify that with our legal counsel and make

1 sure that they are consistent with that interpretation.

2 CHAIRMAN DICUS: That is a good point.

3 MS. CYR: That is correct. I mean Gary is
4 recounting the advice we have given him. If the staff
5 essentially proposes to deny the request on the basis of
6 additional information, they need to demonstrate that in
7 terms of why they are proposing to.

8 COMMISSIONER McGAFFIGAN: Okay. And the worst
9 situation we get ourselves into, a denial request by the
10 staff -- you have a right to a hearing at that point, right?

11 CHAIRMAN DICUS: Yes.

12 COMMISSIONER McGAFFIGAN: So I think it is a
13 fairly profound set of issues that are in this paper. And,
14 as I say, I am little bit concerned that, unlike the other
15 two areas where you have obviously had public workshops in
16 the last month, you haven't sat down and gone through it
17 with stakeholders, how this is going to work.

18 MR. HOLAHAN: I think the staff would be
19 comfortable doing it either way. The question is whether
20 the Commission is comfortable with us, you know, floating
21 proposals out before the Commission has seen them. So, we
22 are prepared.

23 MR. THADANI: May I comment on that?

24 CHAIRMAN DICUS: Yes.

25 MR. THADANI: Commissioner, I think it is clearly

1 linked, this issue is clearly linked to many of the other
2 things we have been talking about. In the long run, it
3 seems to me we would have input from stakeholders,
4 particularly if we move forward, if the Commission approves
5 us moving forward with these high level safety principles.
6 There has to be some link in relationship. It would seem to
7 me that that would require quite a bit of stakeholder input.
8 So in the long run, I think that is how we would end up.

9 COMMISSIONER MCGAFFIGAN: Well, the question is,
10 we are allowing them, I would point out, on Options 2 and 3
11 to talk about things that -- and, in fact, Nils asked
12 earlier for one them -- that we haven't fully approved. I
13 am comfortable with that in Options 2 and 3, that they have
14 had these workshops, they are talking about what rules to
15 change the scope of, et cetera. I think that is fine. I am
16 just questioning whether this area is not another area,
17 where some of the details, you end up fleshing out the
18 issues that we really have to decide, as opposed to, you
19 know, having the debate after we have made a decision, and
20 the decision having a half life of a nanosecond.

21 CHAIRMAN DICUS: Sam.

22 MR. COLLINS: Sam Collins, Director, NRR. The
23 staff appreciates your point. Clearly, we need public
24 stakeholder input into this process. It is a matter that
25 pivots on the schedule that the staff is on, which clearly

1 the Commission can wrestle with. I think there is common
2 ground and the common ground perhaps would be that the staff
3 provides, as a proposal, a paper to the Commission with
4 their preliminary thoughts. That would engender the
5 Commission's comments, and the Commission could ask, and the
6 staff would propose to go out for public comment, not only
7 on the staff paper, but on those issues that the Commission
8 would believe, as a result of a preliminary review of the
9 paper, also warrants specific stakeholder input.

10 That has been a very constructive way to do this
11 in the past, because not only does it steer the staff into
12 the Commission's thinking, but it also prompts specific
13 response to those thoughts from the public.

14 COMMISSIONER MCGAFFIGAN: That is what we did in
15 the oversight process, sort of with IRAP, or whatever.

16 MR. COLLINS: That's correct.

17 CHAIRMAN DICUS: Okay. Thank you.

18 COMMISSIONER MCGAFFIGAN: Have I already used my
19 five minutes?

20 CHAIRMAN DICUS: Yes.

21 COMMISSIONER MCGAFFIGAN: I probably have. I will
22 wait till the second round because I will probably go on to
23 different topics.

24 CHAIRMAN DICUS: Okay. Commission Merrifield.

25 COMMISSIONER MERRIFIELD: The first thing, I want

1 to make a comment about the Chairman's I think very
2 thoughtful question and the consideration the staff made in
3 answering it. I thought that was a good interaction, one
4 that I think we will continue to grapple with over time.

5 Going back to Commissioner McGaffigan's questions
6 on Callaway, I am curious to see what lessons -- I mean that
7 was an effort, a strong effort on the part of the staff to
8 work through that. What were the lessons that we have
9 learned from that, using risk-information in a regulatory
10 decision-making process? And is interim guidance simply so
11 that we handle similar submittals in a consistent manner as
12 we move forward?

13 MR. HOLAHAN: Well, let me take the second part
14 first. We have a proposed approach for dealing with issues
15 on the interim, but, in fact, we don't have Commission
16 approval for that approach. And the way the policy issue is
17 laid out in 98-300, I think the Commission called for
18 approving such an interim approach. So I would say we are
19 at the moment --

20 COMMISSIONER MERRIFIELD: So you owe us something?

21 MR. HOLAHAN: We owe you something. We are sort
22 of -- obviously, if another case were to come up shortly, we
23 would use our best judgment, but I think we would also feel
24 obliged to inform the Commission since it would be an
25 unusual case.

1 With respect to what we learned from the Callaway
2 experience, it was clear that we spent a lot of our time and
3 energy, and some of the licensee's energy, trying to decide
4 on the process and legal questions. What is an appropriate
5 question? Who has the burden of proof? If this is to be
6 approved or disapproved, on what standard should that
7 judgment be made?

8 When we get to the point of having clear guidance
9 in place, hopefully our energies will be spent more on the
10 technical issues, how much do we know about the sequences of
11 interest and the performance of the steam generator tubes
12 and those sorts of things.

13 There are a couple of other lessons learned that
14 mean that these issues by their very nature will be very
15 difficult to deal with. One is when the burden of proof
16 comes on the staff to make a judgment about risk
17 implications, we don't have a Calloway probabilistic
18 risk-assessment model, so we're going to make those
19 judgments based on the closest model we have, what insights
20 we can draw from looking at the licensee's models. So we're
21 not as fully capable in terms of data and models available
22 as when the licensee volunteers information. So that became
23 clear in the Calloway case. That's a lesson learned.

24 Another lesson learned I think is if you meet the
25 current regulations and there is a risk implication, it is a

1 severe-accident risk implication, it probably has to do with
2 complicated phenomena, something that is by its nature
3 somewhat uncertain, and we're going to have to make
4 judgments in a way that's different from the way we normally
5 do, what guidance we will put in place will be process
6 guidance. Okay? The guidance that's in the regulations and
7 the requirements stated in the regulations I think will be
8 necessarily clearer than that. Okay? So we will be dealing
9 with issues of severe accidents, containment performance,
10 steam generator tube performance, things which we have less
11 experience and less technical information than, you know,
12 than the things we normally make judgments on the license
13 amendment process.

14 So they will be difficult by their nature, even
15 when there's more guidance in place.

16 COMMISSIONER MERRIFIELD: As you are working ahead
17 on that interim piece, I suggest that rather than wait for
18 something else to come in the door and force us to decide at
19 that point, which may slow down ourselves and the licensee,
20 getting what you think is the right resolution to that
21 interim piece and getting to the Commission in a timely
22 manner so it's ready in the event, perhaps not needed, but
23 in the event it's needed, if we have a request.

24 The second question I have, and I'm very hesitant
25 about doing these kind of things, but there is a story in

1 the August 16 version of "Inside NRC" indicating that
2 risk-informing Part 50 effort is "out of sync" because one
3 of the pilot plants, South Texas Project, filed multiple
4 exemptions well ahead of the other pilot plants.

5 I was wondering if you could share with us your
6 perspective on that.

7 MR. NEWBERRY: My personal perspective is I don't
8 agree with the characterization "out of sync." I think it's
9 in line with the process discussed in 98-300, and, you know,
10 having a licensee willing to offer up an approach using the
11 exemption process we talk about in the paper and talk about
12 in the Commission's SRM is going to be very, very helpful.

13 We had a very worthwhile meeting with South Texas
14 last week. There was a two-day working meeting with their
15 staff, and then there was a good meeting which Gary and I
16 attended with their management on the difficult issues we're
17 facing as the rationale for the exemptions, which are going
18 to be helpful in the rulemaking activity. So South Texas
19 will be different.

20 They're -- I think I should point out the thought
21 we have right now is that South Texas will not be a pilot in
22 the sense that they're going to be testing a proposed rule.
23 We don't have a proposed rule right now. I mean, the South
24 Texas PRA has received considerable review. They've had
25 proposals in here that have received considerable staff

1 review. So there will be obvious questions about whether
2 the burden borne by South Texas is appropriate for someone
3 else coming in under the context of the rule.

4 So I think the other three pilots will be
5 different than the concepts of the South Texas exemption
6 request. But no, I don't agree with the characterization,
7 and I think the South Texas effort is going to be very
8 helpful.

9 COMMISSIONER MERRIFIELD: Yes.

10 MR. HOLAHAN: I would just add that I don't agree
11 with the characterization either, and I think the staff is
12 sensitive to the point that the South Texas exemptions are
13 not identical with any rulemaking activities.

14 I think it was interesting in the meetings we had
15 just last week that Scott referred to, what was most
16 enlightening were the questions, okay? The questions that
17 were raised with respect to, you know, making decisions
18 about the South Texas exemptions are the same questions that
19 we have to answer in dealing with risk-informing Part 50.
20 The answers are not always the same, but I think the
21 questions are the same.

22 For example, South Texas is a very low seismicity
23 site, so some of their answers having to do with well, are
24 we really worried about seismic qualification of this and
25 that, the South Texas answers are not necessarily

1 everybody's answers, okay? But the questions are the same:
2 How do I deal with seismic issues? How do I deal with EQ?
3 So I think, you know, I see it as a very useful part of the
4 process.

5 COMMISSIONER MERRIFIELD: I particularly think
6 they wouldn't be similar to San Onofre's answers to the same
7 questions.

8 MR. HOLAHAN: Yes.

9 COMMISSIONER MERRIFIELD: I just -- I raised
10 that -- some of you may have read that article and may have
11 been left with a particular impression. I thought it was
12 helpful to get a staff view on where that was coming from.

13 I'll defer to the next round.

14 CHAIRMAN DICUS: Okay. One quick question, and
15 then I'm going to have to run. It really follows on on what
16 Commissioner McGaffigan and Commissioner Merrifield have
17 been discussing, just taking another little part of it.

18 It has to do when we do get an amendment request
19 that we have difficulty dealing with and how better we might
20 be able to deal with those, and I'm referring to SONGS and
21 the hydrogen recombiner. What should have been or appeared
22 to be on the surface a fairly simple amendment request
23 became a very complicated situation that we really had I
24 think a little bit of difficulty dealing with. Would any
25 one of you care to address that, what the issues were?

1 MR. HOLAHAN: Well, the San Onofre hydrogen
2 recombiner I think, although technically it appeared to be a
3 simple issue --

4 CHAIRMAN DICUS: But there was a policy issue
5 involved as well.

6 MR. HOLAHAN: There was a policy issue, and
7 there's a set of regulations involved, and I think what ---
8 San Onofre basically came to us with an insight that said
9 hydrogen recombiners don't really provide the level of
10 safety that one might imagine, okay? For design basis
11 accidents they're really not needed, and for severe
12 accidents, they really don't handle all, you know, that much
13 hydrogen. So they don't really make a lot of difference.
14 And yet we have a regulation in part of 50.34 which
15 basically treats hydrogen recombiners as being important,
16 okay?

17 So we have a technical issue, but we also have,
18 you know, a policy and procedural issue, and I think we also
19 have a public-confidence issue, how is it that we're now
20 going to say what we put in the regulations, thinking that
21 it was important, is now not really what we thought it was.

22 So I think the licensing and certainly parts of
23 the industry felt that perhaps we took too long and spent
24 too much time getting into the details of these issues, and
25 that it should have been done, you know, quickly and easily.

1 I guess I -- well, anything can be more efficient. I would
2 say that. But I think these sort of issues really, really
3 do require us to get to the heart of the details to ask the
4 licensee hard questions, you know, to explain in our safety
5 evaluation reports, you know, you know, why what we thought
6 was important before is not really important now, and to
7 really lay out that logic in some detail.

8 Frankly I think we're having the same experience
9 on the decommissioning discussions with the industry, that
10 things which some people feel are rather, you know, minor
11 issues and can be dismissed easily I think the staff feels
12 that, you know, they deserve a full airing, careful
13 analysis, yes, that does stretch out the time frame
14 somewhat, but I think it's an important part of the process.

15 CHAIRMAN DICUS: Yes. I think we need just to be
16 sure we're always shepherding that process and don't take it
17 out unnecessarily. I mean, I don't want us to take
18 shortcuts, either, and I appreciate the seriousness the
19 staff gives these things. When we can look at these what
20 appear to be simple but become very complicated that we
21 always try to monitor ourselves well.

22 Thank you.

23 Commissioner Diaz?

24 COMMISSIONER DIAZ: A second round?

25 CHAIRMAN DICUS: You don't have any?

1 COMMISSIONER DIAZ: I did my first, second, and
2 third round.

3 COMMISSIONER MCGAFFIGAN: Okay. Well, you're
4 going to get a few more from me.

5 The SONGS issue, I might as well just, you know,
6 follow up, and that was one I was going to ask.

7 In the end, you know, when Senator Domenici was
8 out there, I believe you guys were described by the SONGS
9 staff as trying to hold onto things. In the end, did you
10 put any conditions on, or can they just take out the
11 recombiners at this point? At one point, you know, it was
12 alleged that you guys were going to say yes, you don't need
13 them for 50.34, but we're going to cook up this other reason
14 you need them, and maybe you don't have to test them as much
15 or something, but you were holding on is where you were
16 circa the spring.

17 MR. HOLAHAN: The agreement we've come to I think
18 has -- the only holding on that you might ascribe to it is
19 the fact that the licensee has indicated their intent to
20 keep the recombiners in the plant to keep them in their
21 accident-management program, which is both of those are
22 voluntary activities the licensee maintains in their
23 commitment management program, and the only regulatory
24 oversight of that activity is the licensee has agreed to
25 inform us if they change their mind and decide to remove the

1 recombiners. They are under no regulatory requirement to
2 maintain the recombiners in place, but they have put on
3 their docket their expectation to keep them there. And so I
4 think this is basically consistent with the way they treat
5 other equipment associated with severe accident management
6 guidelines.

7 Remember, the Commission didn't write a
8 severe-accident rule, the industry volunteered to have,
9 among other things, severe accident management guidelines.
10 We've looked at those, but that is a voluntary commitment on
11 the part of the industry, and so they would maintain this
12 equipment as they maintain other, you know, nonsafety
13 equipment for use in their voluntary severe accident
14 management programs.

15 COMMISSIONER McGAFFIGAN: Was their original
16 proposal to simply delete the recombiners?

17 MR. HOLAHAN: Their original proposal was -- I
18 would categorize it as to remove it from regulatory
19 controls.

20 COMMISSIONER McGAFFIGAN: So they succeeded --

21 MR. HOLAHAN: They succeeded in doing that. I
22 don't think they ever had an intention of removing the
23 equipment. In fact, it would probably cost more money to
24 remove the equipment than to leave it in place.

25 COMMISSIONER McGAFFIGAN: I'd like to do a couple

1 quick questions, and then I'll get to a big one that may
2 take more time.

3 You've mentioned decommissioning a moment ago, and
4 that wasn't in the PRA plan.

5 MR. HOLAHAN: Right.

6 COMMISSIONER McGAFFIGAN: We are characterizing it
7 in a paper that's before the Commission at the moment as an
8 attempt at risk-informing decommissioning. Should that be
9 part of this effort? I mean, should it be, you know, copied
10 in the next PRA implementation plan as something you're
11 following?

12 MR. HOLAHAN: I would think so. It seems
13 appropriate.

14 COMMISSIONER McGAFFIGAN: It's just bookkeeping.
15 A second issue, last week's "Inside NRC" or
16 "Nucleonics Week" or whatever mentioned a I think it was a
17 Farley amendment. I don't have it in front of me. I'm
18 doing this from memory.

19 MR. HOLAHAN: Yes.

20 COMMISSIONER McGAFFIGAN: It had to do with
21 checking steam generators and whether they needed to do an
22 outage partway through their cycle, and it said in the
23 article that this was a risk-informed licensing action, and
24 that but for risk insights you wouldn't have granted it. At
25 least I think I'm quoting the article right now. How come

1 that isn't listed as a risk-informed licensing action in
2 your slides at the back?

3 MR. HOLAHAN: Probably because -- I'm not sure it
4 was a licensing action. But I don't remember the exact
5 format of it. And also it might have taken place since
6 August, which may just be timing.

7 COMMISSIONER McGAFFIGAN: But it would have been
8 in process, unless they -- I mean, these things take some
9 time to make a decision like that.

10 MR. COLLINS: It was a licensing commitment?

11 MR. HOLAHAN: I guess it didn't raise to the level
12 of a license amendment. It was a licensee's original
13 commitment that they wished to change.

14 MR. SHERON: Brian Sheron from the staff. The
15 licensee had a commitment to shut down for a mid-cycle
16 inspection, and so this was already scheduled. The licensee
17 then came in and proposed this to alleviate the mid-cycle
18 inspection. So it wasn't really a license amendment in that
19 sense, it was to get relief from a previous commitment.

20 COMMISSIONER McGAFFIGAN: I'm going to use my five
21 minutes, Mr. Chairman --

22 COMMISSIONER DIAZ: No problem.

23 COMMISSIONER McGAFFIGAN: But can somebody explain
24 how the -- I still haven't got to my big issue -- anybody
25 can explain how we do the license commitment process? I

1 mean, you know, there's a lot of analysis that goes into
2 this, or -- and how do you -- obviously it's not a public
3 process, but how does a license commitment relief request
4 work? Maybe the general counsel --

5 MR. HOLAHAN: Except for the legal aspects of
6 hearing rights and stuff like that, I think the technical
7 review looks very much like a license amendment. Same sort
8 of technical issues.

9 COMMISSIONER McGAFFIGAN: Same sort of thing. How
10 long did this one take?

11 MR. SHERON: This one took a little bit longer
12 than normal because the quality of the information that the
13 licensee submitted was not up to par, basically, and we went
14 back to the licensee and asked for more information, better
15 information. I believe they even made some mistakes in
16 their analysis, which we found, and once we got that all
17 sorted out, they gave us better information that was
18 acceptable to the staff.

19 COMMISSIONER McGAFFIGAN: Okay. Have I already
20 used my five minutes?

21 COMMISSIONER DIAZ: I don't know. It depends on
22 what clock you're using.

23 COMMISSIONER McGAFFIGAN: Can I -- let me just try
24 one big question. This goes back to Mr. Thadani. You know,
25 early on in your slides you talk about the CSAS process and

1 its, you know, desire for a safety philosophy to be
2 established.

3 You know, I participated in that with you, and my
4 recollection of the safety chapter was that it was one of
5 the more tortured chapters in the study. I was proud to get
6 a sentence into it that said, you know, the clear, concise
7 definition of safety they were looking for might not be
8 possible in a deterministic framework. That was my
9 contribution to the chapter.

10 And in the end all they asked for at the end of that
11 chapter, I mean, they seize on the oversight program --

12 MR. THADANI: Yes.

13 COMMISSIONER MCGAFFIGAN: And say the oversight
14 program looks like finally because of the performance
15 indicators it is providing some definition of safety, and
16 let's stay the course on that. They did not ask us to go
17 off and do big, you know, core damage frequency safety goals
18 or safety principles.

19 In fact, I'll get to that in a moment, they
20 basically came -- they're looking for clear, crisp guidance.
21 They want the licensing reviewer, you know, to always reach
22 the same judgment, you know, have a -- I think they want,
23 you know, almost a risk-based sort of thing at times, but
24 David Lochbaum's involved in this, he doesn't believe PRA,
25 as he said at the end of the PRA chapter, is up to snuff,

1 and we shouldn't be barging ahead on risk-informed
2 regulation. But they all want a clear definition of safety.

3 The safety-goal stuff that you guys are proposing
4 in 191 is not what they're looking for. It is more -- I
5 mean, if I'm Forrest Remick or David Lochbaum and I read the
6 appendix -- I had it out here a moment ago -- these
7 overarching safety principles, and they're going to say, you
8 know, in all frankness, this is mush, this will not help
9 somebody, you know, individual members of the public should
10 be provided a level of protection such that they bear no
11 significant additional risk to life and health. And they
12 say well, gosh, you guys have already done better than that
13 in Part 20, you see, of 100 millirem per year public dose
14 limit. At least I can judge something against that.

15 So, you know, this is more me making a statement
16 than asking a question, but I'd be interested in Ashok's
17 response, because he was there, I didn't sense the CSIS was
18 asking us to go off and write overarching safety principles.
19 What they're looking for is consistency in making bite-size
20 decisions, and they're seeing it in the oversight process.
21 They think an inspector at Plant X and an inspector at Plant
22 Y because of the significance determination process that's
23 built into that now that we're going to reach similar
24 findings about an inspection finding. They think that the
25 results are going to be similarly assessed in the assessment

1 process. So there's some confidence there which we'll have
2 to demonstrate through the pilots and demonstrate if we go
3 ahead that that program is going to be consistent.

4 Then when they look at licensing actions they want
5 to -- they're looking for every licensing reviewer to look
6 at a license amendment, you know, and basically say this
7 one's good, this one's bad, and have a framework that's
8 understandable. And they see some hope, some of them -- I
9 mean, Remick sees hope in risk-informed regulation in giving
10 that licensing review consistency; Lochbaum doesn't, at
11 least until we have very high-quality PRAs. So what's what?

12 MR. THADANI: Well, I think --

13 COMMISSIONER MERRIFIELD: In three sentences or
14 less.

15 MR. THADANI: I think first of all --

16 [Laughter.]

17 I think we reflected very well on the discussions
18 and the deliberations that went on. You might recall -- and
19 by the way, I think it's broader than just what CSIS said.
20 We recently at the reactor -- or in our strategic plan
21 stakeholder meeting the same issue came up. There is a
22 continuing need it seems that the Agency's safety
23 requirements, and let me say in terms of what's adequate
24 protection and what's considered under cost-beneficial
25 requirements and so on, are they clearly understood by all

1 parties and consistently applied. As you said, that was the
2 theme. Do people understand clearly what the expectation
3 is, and the actions that are taken are consistent.

4 There's a lot of debate, as you recall, of what
5 gets folded under so-called "adequate protection"
6 definition. A number of issues, from operating experience,
7 the concern was the industry having to respond under
8 adequate protection. This doesn't meet Rule XYZ, and you
9 need to respond or a group of plants need to respond.

10 There was a need in that sense what the Agency's
11 actions are going to be and how they might relate to either
12 adequate protection or beyond adequate protection in terms
13 of backfit-rule considerations.

14 In order to provide some consistency, the request
15 seems to be to come up with better articulation of what we
16 mean by adequate protection. I completely agree with you it
17 cannot be numerical. I personally don't think it can be
18 numerical. That truly would be risk-based. And there are
19 lots of issues there. But that doesn't mean that the risk
20 information can't play a part, perhaps under subordinate
21 basis, in some better articulation of safety goals -- I
22 mean, adequate protection.

23 The group clearly was satisfied with the direction
24 of the oversight reactor, oversight program, and the
25 cornerstones, and that they provide partial so-called --

1 maybe I should -- I'll use the term definition of adequate
2 protection, but that there are many other areas beyond that.

3 Reg Guide 1.174 doesn't really address the issue
4 of adequate protection. While I don't think one can have
5 clearly defined sort of numerical guidelines, but it seems
6 to me that expanding on what is in Reg Guide 1.174, taking
7 into consideration the factors that are discussed in Reg
8 Guide 1.174, such as defense in depth, margins, and so on,
9 if we can develop what I call subsidiary criteria for those,
10 it may provide a little better consistency in the way we
11 conduct all our activities. This is the sort of attempt --
12 perhaps the language is not clear -- that's what we were
13 talking about attempting to do under the high-level safety
14 principles. This would be one piece of that.

15 COMMISSIONER McGAFFIGAN: If I might defer.

16 COMMISSIONER DIAZ: All right. I'm just going to
17 make a comment on that. Rather than subsidiary, which might
18 look at a series of thresholds, you probably mean a series
19 of subsets.

20 MR. THADANI: There are subsets. And in fact if
21 you recall the ACRS paper on defense in depth which talked
22 about rationalist and the structuralist and somewhere in
23 between, I will admit up front I'm somewhere in between
24 myself. But the idea, the concept there was as George
25 Apostolakis certainly talks about it, that you can stay --

1 you have to have some kind of hierarchical arrangement at
2 some point.

3 And I sort of agreed with what I think you said
4 earlier. The challenge is going to be to what extent these
5 numerical calculations would be utilized to support the
6 concepts of margins, defense in depth, and so on. I don't
7 know what the answer is, but I do think that we won't be
8 able to come up with a concise definition -- that's what
9 CSIS was initially looking for -- a concise definition of
10 adequate protection. But I think we can do better in
11 responding to some of the concerns that various stakeholders
12 have raised.

13 COMMISSIONER DIAZ: Okay. Thank you, Commissioner
14 Merrifield.

15 COMMISSIONER MERRIFIELD: Although I'm relatively
16 young now, I'm certain later in my life I will appreciate
17 the ability to stretch five minutes as long as we did.

18 [Laughter.]

19 Okay. Two quick questions on slide 4. The first
20 bullet on slide 4 says substantial staff and management
21 attention has gone into our risk-related work. I guess my
22 question is do we as an agency have the sufficient expertise
23 in the area of risk to carry out the plans laid out in
24 SECY-98-300, or will we be relying substantially or to any
25 great degree on contractor support? And if we are, are we

1 taking the steps necessary to improve our internal
2 capabilities in the area of risk?

3 MR. THADANI: Let me give you -- I think each
4 office may want to speak to this issue, but first and
5 foremost, within the Agency we have very good capability in
6 terms of background, understanding, and knowledge of not
7 just the use of risk information but also in terms of risk
8 analysis, the conduct of analyses themselves. Oftentimes,
9 if there are some unique aspects that come up, it might have
10 something to do with better understand seismic hazards,
11 probabilistic assessments, and so on, or in some cases
12 fire-risk analysis. Oftentimes we find that we don't have
13 in-house capability to the degree that we need. We would go
14 through contractors in those areas. But by and large -- I
15 think NMSS may particularly want to comment on this -- but
16 by and large I think we have fairly good capability at the
17 Agency.

18 MS. RATHBUN: We have somewhat limited capability
19 at this time in risk analysis, and by and large we've put
20 those people together into the group. As we move forward,
21 we will have to use contractor assistance, and fortunately
22 we know them and, you know, we're aware of that. As we move
23 into the longer term, I believe we will need to hire some
24 experts, but I've also begun the training program, begun to
25 look at it.

1 I also attended some of the PRA classes and am
2 looking specifically to how we'll modify them for NMSS.
3 We've tried it in the past actually over time, and it's not
4 so difficult to modify it, but you have to realize that
5 NMSS, like the inspectors of the past, thinks
6 deterministically, and so this requires a large culture
7 change as well as specific expertise. So we're starting
8 that right now.

9 MR. VIRGILIO: Just to give you some more concrete
10 examples, if I think about some of our activities with Part
11 70 and the ISA work we are doing there, we are doing that
12 mostly with our Staff in-house. On the other hand, if I
13 think about what we are doing under Part 63 with the total
14 system performance assessment, that is a mix of both
15 in-house Staff and the Staff we have at the center that is
16 helping us do the review successfully there.

17 It is a mix. I think it will be a mix for some
18 period of time until we can do what Pat is talking about,
19 getting more in-house expertise.

20 MR. HOLAHAN: Can I just add from NRR's
21 perspective, I think in the last about five years we have
22 hired a number of well-known and very experienced experts in
23 the probabilistic risk assessment area, so I think we have
24 addressed one piece of the issue, which is to have at least
25 a core of very expert, actual experienced people who have,

1 you know, actually earned a living at doing probabilistic
2 risk assessment.

3 The other part of the challenge is the other 99
4 percent of the NRC needs to be trained, and I know that NRR
5 and Research have been putting our Staffs and the regions
6 have been putting our Staffs through training programs for
7 the Staff and management, and at this stage it seems to me
8 that the larger challenge is training and the interest in
9 commitment of the Staff versus having a core of experts who
10 are capable of carrying the ball, so I think we have done
11 part of it.

12 The training part I think will be just a
13 continuing effort, to bring everyone up to speed.

14 MR. THADANI: May I add to that --

15 COMMISSIONER MERRIFIELD: I have another question.

16 MR. THADANI: Just quickly --

17 COMMISSIONER MERRIFIELD: Okay.t

18 MR. THADANI: -- that the idea of risk analysis as
19 such is qualification part, fundamental understanding,
20 transient analyses, accident analyses, thermal hydraulics,
21 and so on. That is a key. If one doesn't fully understand
22 how these plants behave under different conditions than in
23 fact one would not understand the end results.

24 At the agency we have a very large number of
25 people, I believe, who really understand well how these

1 plants behave, and then the issue is quantification and
2 understanding what those calculations might imply and that
3 is an important part.

4 COMMISSIONER MERRIFIELD: And that is a very good
5 point you add.

6 Turning to Slide 5, it lists some risk-informed
7 licensing activities. What mechanisms do we have in place
8 to ensure that we as an agency handle similar risk-informed
9 licensing actions in a consistent manner? Does that fall on
10 the shoulders of the Risk Informed Licensing Panel, or is
11 formal guidance in place to ensure a level of consistency?

12 MR. HOLAHAN: There are several pieces of the
13 answer.

14 It is not the Risk Informed Licensing Panel. I
15 think the Risk Informed Licensing Panel deals with cases on
16 an exception basis. If there is a difficulty or some
17 identified problem, then the Risk Informed Panel would be
18 called into place.

19 As a routine activity the first level of activity
20 for assuring consistency is that we have a Standard Review
21 Plan so the reviews are done by the Staff using the same
22 guidance document and they are trained in the same training
23 program. Those reviews also get at least one or two levels
24 of management attention. Those risk-informed licensing
25 reviews normally are signed out at a Branch Chief level so

1 that they will have Section Chief and Branch Chief level of
2 review.

3 In addition to that, and I would say that is a
4 sort of normal activity where you have a guidance document,
5 Staff training, management oversight, so this is done not
6 very differently from what we do for other types of
7 technical Staff reviews.

8 In the future NRR is moving in the direction of
9 putting a work planning group into place which would also
10 help to identify similar past activities so that when work
11 first comes in, it would be identified as being similar to
12 some other piece of work. It would be looked at by a
13 planning group to identify where it should go, what kind of
14 issue is it, what you would normally expect in terms of
15 Staff resources to be applied to such a case, and I think
16 that will probably help in our consistency also.

17 COMMISSIONER MERRIFIELD: That's positive. I know
18 this Commissioner, certainly this Commissioner has commented
19 frequently on the issue of the need for consistency where
20 you have similarly situated parties and the way in which we
21 are judged by our stakeholders and others will be based on
22 our ability to act in that kind of manner so I compliment
23 the Staff for focusing on that. I have no further
24 questions.

25 COMMISSIONER DIAZ: Other questions? Commissioner

1 McGaffigan?

2 COMMISSIONER McGAFFIGAN: Just following up on the
3 last question, the paper before us, 191, in the Safety Goal
4 Policy Statement, my fundamental question is is it worth the
5 effort? I think I saw a Staffer in one of the trade press
6 quoted as saying it is going to be controversial, resource
7 intensive and perhaps unnecessary.

8 I question what it contributes to risk-informing
9 Part 50 or trying to get on with making consistent judgments
10 on licensing amendments or any of that given how long it
11 took us to just work on the definitions -- I see Gary about
12 to answer -- and just work on the definitions paper --
13 risk-informed, performance-based regulation.

14 I can see this effort taking a very, very long
15 time, and unless it really is going to help you do something
16 that you otherwise wouldn't be able to do, fixing Reg Guide
17 1.174 or choosing the rules to change the scope of or
18 whatever, I just question the value of the whole effort if
19 it is going to be controversial, time-consuming, and if from
20 the get-go we are saying it is perhaps unnecessary.

21 MR. KING: Let me try and take a stab at that.

22 I think from the standpoint of the reactor
23 risk-informed licensing activities, they are out ahead of
24 other activities in the agency, risk-informed activities. I
25 think developing the set of high level safety principles

1 will probably not have too much of an effect on the reactor
2 aspects of risk-informed regulation, but I do think that
3 they are worth at least spending a little more time to see
4 what can come out of it in terms of what these things would
5 look like and how they would be useful and beneficial to the
6 agency, and I think where they would be useful and
7 beneficial is in providing guidance to the nonreactor
8 activities, so that there is some consistency in approaches,
9 in issues, in criteria that are applied there.

10 Now maybe when we are all done we will end up with
11 a drill in a dry hole. I don't know, but I am not convinced
12 yet that I am willing to go that far at this point.

13 MR. THADANI: If I may also make a point. I asked
14 Joe Murphy -- I believe he was the one who was --

15 COMMISSIONER McGAFFIGAN: I think it might have
16 been him in the paper --

17 MR. THADANI: I asked Joe Murphy and he indicated
18 to me that that is not what he said, that it wouldn't be
19 useful. He did say it is going to be difficult, and I
20 believe it is going to be difficult, but if we are going to
21 change the structure of our regulations, then there needs to
22 be again I would say clearer and consistent understanding on
23 the part of all stakeholders as to what is it that we are
24 going to use to change the structure, how well have we
25 considered some of the difficult issues.

1 I mean an example is in the paper -- land
2 contamination. Is that included? Is it to be included or
3 not? It is clearly an important issue -- has to be
4 considered. Whatever the ultimate decision is, we need --
5 our view certainly was that we need to lay out these issues
6 upfront, get input from various stakeholders, and then
7 proceed with some recommendations to the Commission.

8 I think they are complex issues. I agree -- and
9 that they are difficult, but once that -- I think they are
10 tractable. The ACRS for example said to us that it is a
11 very complex issue, but perhaps it is worthwhile to go study
12 these and see how far we can in fact go.

13 What we are asking in this paper is taking a look
14 and coming back to the Commission in six months,
15 basically -- six to eight months -- with some firm
16 recommendations, and that would call for, we had planned to
17 have a workshop in November, after laying out these issues,
18 getting them out to stakeholders and having a workshop,
19 seeing what various stakeholders' views were, subsequently
20 studying what we get and come back to the Commission with
21 some recommendations. That is the level of effort.

22 COMMISSIONER McGAFFIGAN: I will just tell you, my
23 concern is a concern of opportunity costs. I think what you
24 have laid out in just trying to risk-inform Part 50, and
25 there's a lot of learning that can get done in NMSS without

1 this paper perhaps, just by doing some things, and as you do
2 things you set a foundation, but I am worried about the
3 opportunity costs because it is a significant effort.

4 I think if we are going to risk-inform Part 50
5 there's an awful lot of resources required there. Again I
6 look at how long it took us to do the 50.59 rulemaking,
7 which isn't finished yet because we won't have the Reg Guide
8 until next June, or the 50.65 or whatever. We could be
9 talking years just to get these rules through and if there
10 are resources that could be dedicated to that that otherwise
11 are going to be sitting worrying about whether the core
12 damage frequency should be 10 to the minus 4 or should be a
13 safety policy goal or something and redoing all of these
14 white papers we have done over the years, which in the end
15 the policy statements don't, in my view don't count as much
16 as the rules, so that is just a concern I will throw out in
17 the open that I am having with that paper.

18 COMMISSIONER DIAZ: It appears Commissioner
19 McGaffigan has a question on that issue. Thank you.

20 Just a couple of quick comments. In thinking of
21 all the things that we have said and the trade press, I am
22 getting a little bit concerned that people are counting
23 beans again, except looking at the direction that the
24 Commission has taken, and I think it is important that we
25 realize that we use risk information in more manners than

1 license amendments, that it is really an overlaying
2 philosophy that we are trying to put on issues, and I think
3 that is a very important aspect of it, rather than again,
4 you know, we are always being criticized about counting
5 beans.

6 I think bean counting is a good exercise, but it
7 is not the only way in which we can frame the importance of
8 what the Commission have decided.

9 In looking at the Staff presentation, I realize
10 that we put accomplishments. I think it might be at times
11 appropriate to identify hurdles. I know there are no
12 show-stoppers that have been brought out, but there are
13 hurdles or problems that the Commission can receive ahead of
14 time. That certainly will help us in decision-making.

15 At this moment I just would like to thank the
16 Staff for what I think has really been a very good
17 overarching meeting and we looking forward to receiving the
18 specifics. It is very clear that there has been a lot of
19 discussion and input by the dedicated members of the Staff
20 and by stakeholders alike into the implementation and
21 development of this approach to information, risk-informed
22 regulation and the PRA implementation plan, and there really
23 much to come. We are expecting to be looking in the next
24 few weeks to receive that "much to come."

25 Discussion on Option 3 related to risk-informing

1 Part 50. Joe said this is an effort that might extend for a
2 significant period of time. I think it is important that we
3 are aware of what the developments are so these issues are
4 not made just on big issues at the last moment, but that we
5 receive the information like what are the preliminary issues
6 that are making it risk-informed.

7 Key technical and policy issues will need to be
8 evaluated, a viable schedule will have to be developed,
9 pilots will be important in determining what needs to be
10 conducted, and the results of those pilots evaluated for
11 lessons learned. Training is a big issue. I think we all
12 realize that here and by the licensees -- the issue of
13 training so people will have the knowledge of what are our
14 systems and performance and behaviors, how they can get
15 integrated with a risk-informed approach is very important.

16 It will be necessary that we be vigilant regarding
17 the capabilities of the Staff and the licensees are up to
18 par, and we need to know ahead of time and further efforts
19 need to be in this area.

20 In summary, as Chairman Dicus stated in her
21 opening remarks, obviously we have done much and are
22 expecting to be doing a lot more in the near-term. Again, I
23 want to thank the Staff for the fine presentation. I think
24 it was very, very informative. Do any of my fellow
25 Commissioners have any closing remarks?

1 COMMISSIONER MERRIFIELD: No.

2 COMMISSIONER McGAFFIGAN: No.

3 COMMISSIONER DIAZ: If not, the meeting is
4 adjourned.

5 [Whereupon, at 11:23 a.m., the briefing was
6 concluded.]

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CERTIFICATE

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

TITLE OF MEETING: NRC STAFF BRIEFING ON PROBABILISTIC
RISK ASSESSMENT IMPLEMENTATION PLAN
PUBLIC MEETING

PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: Tuesday, September 7, 1999

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: Rose Gershon

Reporter: Mark Mahoney



**NRC Staff Briefing
On PRA Implementation Plan**

September 7, 1999

Outline of Presentation

- Overview and key accomplishments
- Reactor oversight program
- Modifications to 10 CFR 50 (SECY-98-300 SRM)
 - Ongoing rule changes (OPTION 1)
 - Scope and definitions (OPTION 2)
 - Clarification of staff authority
 - Study on modification of technical basis (OPTION 3)
- Framework for materials regulation (SECY-99-100 SRM)
- Integration and coordination of risk-informed activities
- Summary

OVERVIEW

- SECY-99-211 provided a status report on NRC's PRA related activities since January 1999
- Work to increase the use of risk information in regulatory matters has expanded substantially:
 - From specific to broader applications of risk information
 - Plant specific activities have continued in parallel
- Papers were provided to the Commission on key risk-related topics (see supplemental information, Slide S-1). Accomplishments included:
 - initiation of work to risk-inform 10 CFR 50
 - development of a framework to risk-inform non-reactor activities
- Significant stakeholder input has been received:
 - GAO - recommended a strategy for risk-informed regulation be developed
 - CSIS-recommended a safety philosophy be established
 - Industry - suggestions on specific activities
 - Public Interest Groups-specific concerns regarding the use of PRA
 - ACRS Report (NUREG-1635, Vol. 2) on RES program

OVERVIEW (Cont.)

- Substantial staff and management attention has gone into our risk-related work
- Integration and coordination of this work has been a focus of the PRA Steering Committee
- Today's briefing will highlight key accomplishments over the past six months with focus on:
 - broad scope activities
 - key milestones
 - approach
 - issues
 - integration and coordination

Summary of Key Accomplishments

- Risk-informed licensing activities:
 - Received 8 significant R-I licensing action requests since 11/98 (see supplemental information, Slide S-2)
 - Completed reviews of 11 significant R-I licensing actions since 1/99 (see supplemental information, Slide S-3)
 - Six R-I licensing actions currently under review (see supplemental information, Slide S-5)
 - Expected R-I licensing actions requests (see supplemental information, Slide S-6)
- Reactor operating experience reliability evaluations (see supplemental information, Slide S-7)
- IPEEE Reviews - completed 12 (January - June 1999)
- Standards on PRA Quality (ASME, ANS, NFPA)
- Safety Goal revision - status report and proposal for high level safety principles
- Training in support of Regional and HQ staff
- Framework for risk-informing NMSS activities
- Nuclear byproduct material risk review

Reactor Oversight Program

Use of PRA in Reactor Oversight Process Improvements

- Reactor safety cornerstones created from risk principles
- Performance indicators that monitor initiating events and mitigation systems cornerstone performance use risk insights
- Baseline inspection areas linked to cornerstones; plant-specific risk insights used to help plan inspections
- Significance determination process for inspection findings founded on risk principles wherever possible

Modifications to 10 CFR 50 (SECY-98-300 SRM)

Status of Ongoing rulemakings (OPTION 1)

- §50.55a (Codes and standards) -- paper addressing public comments on ISI/IST program update to Commission by 9/99
- §50.59 (Changes, tests and experiments)-- publish final rule 9/99
- §50.65 (Maintenance)-- final rule published 7/19/99
- §50.67 (New Source Term)-- final rule package in concurrence
- §50.72/73 (Notification and event reporting)-- proposed rule published 7/6/99

MODIFICATIONS TO 10 CFR 50 (continued)

ORGANIZATION OF RISK-INFORMED-PART 50 STAFF ACTIVITIES

- Multi-office, multi-disciplinary working group
- Risk-informed Licensing Panel
 - oversight and technical issues
- PRA Steering Committee
 - oversight and policy issues
- Public meetings
- ACRS and CRGR reviews

MODIFICATIONS TO 10 CFR 50 (continued)

➤ SRM Direction for SECY 98-300 (OPTION 2)

- Develop risk-informed definitions for “safety-related” and “important to safety” SSCs
- Change scope of SSCs covered by Part 50 requiring special treatment
- Work with internal and external stakeholders
- Utilize industry pilot studies with exemptions as appropriate

➤ Rulemaking Plan (OPTION 2)

- Evaluate approaches for revising Part 50 terminology
- Determine rules to be considered within effort
- Develop basis for reclassifying SSCs on the basis of safety significance
- Due to Commission 10/31/99

Modifications to 10 CFR 50 (cont.)

SECY 98-300 Policy Issue 4: "Clarification of Staff Authority/Guidance for Applying Risk-Informed Decision Making"

- Staff recommended developing clarifying guidance regarding use of risk information in activities beyond risk-informed licensing actions. Commission SRM approved recommendation; staff to submit guidance for Commission approval
- Proposed guidelines for using risk information in regulatory decision making undergoing internal review

Overall Approach:

- concept of "special circumstances"
- use of integrated decision making process
- guidelines for questioning adequate protection
- final decision based upon all relevant factors including, but not limited to:
 - deterministic engineering and safety margins
 - risk assessment
 - defense-in-depth

Modifications to 10 CFR 50 (cont.)

- September 30, 1999, paper will present the overall approach for Commission approval
- Stakeholder input on approach and implementing guidance following Commission direction
- No rulemaking appears necessary

Modifications to 10 CFR 50 (cont.)

Modification of Technical Basis - OPTION 3

- SECY-98-300 SRM approved study of technical requirements:
 - Plan for study to Commission 10/99:
 - approach
 - criteria
 - key issues
 - schedule
 - Study will include:
 - identification of candidate changes
 - identification of scope of changes
 - identification of issues
 - establishment of feasibility of changes
 - priority
- Paper to Commission with recommendations following completion of study:
 - Possible separate papers on recommendations which merit prompt attention
- Will factor in stakeholder and ACRS input.

Modifications to 10 CFR 50 (cont.)

Integration and Coordination of OPTIONS 2 and 3

- Consistent approach
 - utilize principles of RG 1.174 (e.g., defense-in-depth, margins, small changes around current plant risk profile)
 - retains design basis concept (risk-informed deterministic requirements)
- Application of OPTION 2 scope definition to technical requirements
- Use of pilot plants

Modifications to 10 CFR 50 (cont.)

Issues:

- Policy:
 - Selective implementation

- Implementation:
 - Approach proposed is to modify existing requirements - not develop a totally new 10 CFR 50 (substantial change to licensing basis)
 - Retain design basis concept (i.e., risk-informed design basis)
 - Utilize principles of RG 1.174

- Technical:
 - Criteria for selecting candidate rule changes and proposing modifications will be directed toward:
 - removal of requirements with little or no safety benefit
 - removal of excessive conservatism, where justified.
 - Identification of safety enhancements, where justified

Modifications to 10 CFR 50 (cont.)

- Criteria will address:
 - maintaining safety:
 - defense-in-depth
 - safety margins
 - risk measures
 - enhancing public confidence:
 - stakeholder input
 - reducing unnecessary burden:
 - cost benefit
 - effectiveness, efficiency and realistic decision making:
 - excessive conservatism

- Use of performance-based approach, where practical

Framework for Materials Regulation

Previous NMSS Risk Assessments

- Waste and Decommissioning
 - HLW Performance Assessment

- Casks
 - Modal Study (NUREG/CR-4829 “Shipping Container Response to Severe Highway and Railway Accident Conditions”) - an early effort to apply risk assessment methodology to the analysis of transportation risk

- Facilities
 - Integrated Safety Analysis for Part 70

- Industrial, Medical
 - Gamma Knife PRA

Framework for Materials Regulation (continued)

➤ Recent Accomplishments

- Commission approves Staff's approach (SECY 99-100)
 - Five step process to implement risk framework (see supplemental information, Slide S-8)
 - Joint ACRS/ACNW Subcommittee

- Recent publications:
 - NUREG 1711 and 1712 "Nuclear Byproduct Risk Review"
 - NUREG/CR-6642 "Risk Analysis and Evaluation of Regulatory Options"

- NMSS establishes task force to implement framework

Framework for Materials Regulation (continued)

Looking Forward

- Integrate NMSS efforts into overall Agency plans
- Participate in development of overall Agency strategy document
- Set priorities for candidate risk-informed regulatory applications
- Plan approach for Stakeholder involvement
- Continue interactions with joint ACRS/ACNW Subcommittee
- Quickly surface policy implications of proposed regulatory and licensing changes to Commission
- Revise NMSS regulatory and licensing processes as appropriate

INTEGRATION AND COORDINATION

- Broad scope activities underway require internal and external integration and coordination.
- Activities are inter-related:
 - each activity needs to support the overall Agency goals as described in the NRC Strategic Plan
 - consistent approach needed among activities
 - Agency infrastructure needed to support implementation:
 - goals
 - tools/data
 - resources

INTEGRATION AND COORDINATION (Cont.)

- Activities fundamental to integration and coordination:
 - Strategy for risk-informed regulation (recommended by GAO in their March 1999 report):
 - describe overall agency plans and approach for deciding what, how and when to risk-inform its activities
 - support implementation of agency Strategic Plan
 - outline to Commission - mid-September 1999

 - High level safety principles:
 - discussed in SECY 99-191
 - describe qualitatively overall agency approach to safety (CSIS concerns)
 - provide high level direction/consistency to agency risk-informed activities
 - feasibility study and draft - March 2000

 - Reactor Safety Goal Policy revision:
 - discussed in SECY 99-191
 - supports risk-informing reactor activities
 - related to high level safety principles
 - recommendations to Commission - March 2000

SUMMARY

- Actions are being taken to systematically assess and risk-inform regulatory programs
- Plant specific risk-informed actions will continue in parallel with broader risk-informed activities
- Responses to stakeholder concerns are included in the ongoing activities
- Issues will be brought to the Commission's attention as they are developed.
- Will result in fundamental changes in regulatory programs consistent with Agency goals.
- Integration and coordination of risk-informed activities will continue.

SUPPLEMENTAL INFORMATION

MAJOR COMMISSION PAPERS PERTAINING TO RISK-INFORMED
ACTIVITIES (Jan 1999 - July 1999)

- SECY-99-062 (March 1, 1999) "Nuclear Byproduct Material Risk Review"
- SECY-99-100 (March 31, 1999) "Framework for Risk-Informed Regulation in NMSS"
- SECY-99-182 (July 9, 1999) "Assessment of the Impact of Appd. R. Fire Protection Exemptions on Fire Risk"
- SECY-99-191 (July 22, 1999) "Modifications to the Safety Goal Policy Statement"
- Memorandum to the Commission (June 18, 1999) "Interim Status Report on the Development of Risk Information on Low Power & Shutdown"
- Memorandum to the Commission (June 30, 1999) "Annual Review of RG 1.174"

Risk-Informed Licensing Action Requests Submitted Since 11/98

- South Texas IST (Submitted 11/16/98)
- San Onofre IST (Submitted 12/30/98)
- Oconee HPI TS AOT extension. (Submitted 12/16/98)
- San Onofre proposal to add limits to TS for recirculation actuation signal / emergency feedwater actuation signal while the channel is in a tripped condition. (Submitted 12/31/98)
- Palo Verde LPSI TS AOT extension Review in concurrence. (Submitted 2/26/99)
- Browns Ferry ISI. (Unit 3 ISI Submitted 4/23/99)
- South Texas request for exemption to exclude non-risk significant and low safety significant from the scope of special treatment requirements required by regulations. (Submitted 7/13/99)
- Turkey Point onetime EDG TS AOT extension. (Submitted 7/27/99)

Completed R-I Licensing Actions Since 1/99

- Westinghouse Topical (WCAP-15049) Risk-informed AOT extension for accumulators. SER Issued January, 1999.
- Perry EDG TS AOT extension. SER issued February, 1999.
- North Anna revised AOTs for PORV nitrogen accumulator and PORV inoperability. SER issued March, 1999
- Palo Verde relief from implementing modifications to the auxiliary pressurizer spray and charging systems. SER issued March, 1999.
- Wolf Creek accumulator TS AOT extension. SER issued April, 1999.

Completed R-I Licensing Actions Since 1/99 (continued)

- Brunswick Bus TS AOT extension. SER issued April, 1999
- San Onofre - Granted an exemption from requirements for hydrogen recombiners and the capability for controlled purging in June 1999 (NEI phase 0 pilot).
- Limited scope risk-informed IST relief request from South Texas Project - Technical Review completed July 1999.
- Risk-informed ISI submittal from ANO - Technical Review Completed July 1999.
- B&W Topical Report (BAW-2295), LPSI AOT extension. Joint application covering 7 B&W plants. Technical evaluation issued July 8, 1999
- Browns Ferry EDG TS AOT extension. SER issued August, 1999

R-I Licensing Actions Currently Under Review

- CE Topical (CE NPSD-1045) covering containment spray and LPSI. Joint application covering 12 CE plants. In concurrence review.
- San Onofre - Full Scope IST request under review. Expected completion October, 1999.
- St. Lucie LPSI TS AOT extension currently under review. Expected completion October, 1999.
- EPRI ISI topical report on methodology currently under review. Expected completion October, 1999.
- Turkey Point one-time EDG TS AOT extension currently under review. Exception completion November, 1999.
- Browns Ferry (unit 3) risk-informed ISI request under review. Expected completion December, 1999.

Expected Risk-Informed Licensing Action Request Submittals

- Joint NRC/Industry effort to develop a fully risk-informed set of standard TS
- CEQG joint application for containment isolation valve AOT extension

REACTOR OPERATING EXPERIENCE RELIABILITY EVALUATIONS

- Rates of Initiating Events at U.S. Nuclear Power Plants: 1987-1995 (NUREG/CR-5750)
 - first major update since 1985
 - first update of LOCA frequencies since WASH-1400
- Reliability Studies: Westinghouse Reactor Protection System, 1874-1995 and General Electric Reactor Protection System, 1984-1995 (NUREG/CR-5500 Vol 2 and 3)
 - first systematic evaluations of RPS performance since ATWS rulemaking in 1986
 - CCF failure modes explicitly modeled using CCF database
- Equipment Performance Information Exchange (EPIX)
 - Access obtained
 - First data upload into Reliability and Availability Data System (RADS) development
 - Meetings with industry to obtain better data per voluntary initiative continuing

Five Step Process to Implement NMSS Framework

- Step 1 Identify: (1) candidate regulatory applications for RI approaches, (2) responsible organizations
- Step 2 Decide how to modify current regulatory approaches
- Step 3 Change regulatory approaches
- Step 4 Implement RI Approaches
- Step 5 Develop or adapt RI tools