

NUCLEAR REGULATORY COMMISSION

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Advisory Committee on Reactor Safeguards

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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MEETING WITH THE ADVISORY COMMITTEE
ON REACTOR SAFEGUARDS (ACRS)

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WEDNESDAY,

DECEMBER 5, 2001

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ROCKVILLE, MARYLAND

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The Committee met at 1:30 p.m. at the
Nuclear Regulatory Commission, One White Flint North,
Room O, 11555 Rockville Pike, Dr. Richard A. Meserve,
Chairman, presiding.

PRESENT:

- RICHARD A. MESERVE, Chairman
- GRETA JOY DICUS, Commissioner
- NILS J. DIAZ, Commissioner
- JEFFREY S. MERRIFIELD, Commissioner

ACRS PRESENT:

- GEORGE APOSTOLAKIS, Chairman
- MARIO V. BONACA, Vice Chairman
- F. PETER FORD, Member
- THOMAS S. KRESS, Member-at-Large

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ACRS PRESENT: (CONT.)

DANA A. POWERS, Member

STEPHEN L. ROSEN, Member

WILLIAM J. SHACK, Member

JOHN D. SIEBER, Member

GRAHAM B. WALLIS, Member

I-N-D-E-X

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Adjourn 57

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

(1:47 p.m.)

1
2
3 CHAIRMAN MESERVE: Why don't we get
4 started? I have to apologize to the Advisory
5 Committee that we were testifying, or I was testifying
6 this morning and fortunately, I had lots of
7 reinforcements behind me, namely my colleagues here at
8 the table and it went considerably longer than we had
9 anticipated.

10 We do have two minor business items we
11 need to clear up first, two affirmations.

12 Madam Secretary, you may proceed.

13 SECRETARY VIETTI-COOK: The Commission is
14 being asked to act on a Memorandum and Order
15 responding to an appeal by the Connecticut Coalition
16 Against Millstone in a Standing For Truth About
17 Radiation Foundation of the Atomic Safety and
18 Licensing Board's decision in LBP 0110 which found the
19 Petitioner's sole contention to be inadmissible. The
20 Commission had voted to approve a Memorandum and Order
21 which affirms the Board's decision LBP 0110. Would
22 you please affirm your votes?

23 (Ayes.)

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1 Commissioner McGaffigan had previously
2 agreed to this order and had he been here he would
3 have affirmed his vote.

4 The second item, the Commission is being
5 asked to act on a Memorandum and Order responding to
6 Connecticut Yankee Atomic Power Company's request for
7 Commission review of the Licensing Board's decision in
8 LBP 0121. The Commission has voted to approve a
9 Memorandum and Order which concludes that the request
10 does not meet the standards for interlocutory review
11 and denies the petition for directed certification.

12 Would you please affirm your votes?

13 (Ayes.)

14 And again, Commissioner McGaffigan had
15 previously approved this order and had he been here he
16 would have affirmed his prior vote.

17 CHAIRMAN MESERVE: Thank you very much.
18 On behalf of the Commission I'd like to welcome you to
19 today's meeting with the Advisory Committee on Reactor
20 Safeguards. As I think you all know and as the
21 audience knows, we do meet about every six months with
22 the ACRS to hear about issues of current interest or
23 near term concern. Why don't we get underway?

24 Dr. Apostolakis?

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1 DR. APOSTOLAKIS: Thank you, Mr. Chairman,
2 Commissioners, as always, we are very pleased to be
3 here to discuss with you topics of current interest to
4 the Commission. These topics today are the Reactor
5 Oversight Process, regulatory challenges for future
6 plan designs, ACRS activities associated with core
7 power uprates and the status of ACRS activities and
8 license renewal.

9 Last time, Mr. Chairman, we went through
10 the presentations and then we had questions. Do you
11 wish to do the same this time?

12 CHAIRMAN MESERVE: Yes, that will be the
13 process we will follow today.

14 DR. APOSTOLAKIS: Okay. We'll start with
15 the Reactor Oversight Process. My colleague, Mr.
16 Sieber, is the cognizant member.

17 MEMBER SIEBER: Thank you, Dr.
18 Apostolakis, and good afternoon. Two and a half years
19 ago, the Commission instructed the staff to implement
20 a new revised Reactor Oversight Process. This new
21 oversight process was to be performance-based and
22 risk-informed to the extent possible. The object of
23 the revised Reactor Oversight Process was to develop
24 a process that was objective, understandable,
25 scrutable, timely, and visible to the public.

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1 The staff has developed and implemented to
2 a great extent such a process and we believe the staff
3 has done a good job in many of the goals set before
4 it.

5 We are also impressed that the staff has
6 done an excellent self assessment and if the findings
7 from that self assessment, along with our own comments
8 are implemented, that will result in an excellent set
9 of improvements to the process.

10 In April 2000, the Commission tasked the
11 ACRS to review the new Reactor Oversight Process and
12 you asked us two questions. Specifically, you asked
13 us to review the use of performance indicators in the
14 Reactor Oversight Process to ensure that the PIs
15 provide meaningful insight into aspects of plant
16 operation that are important to safety and review the
17 initial implementation of the Significance
18 Determination Processes and assess the technical
19 adequacy of the SDP to contribute to the Reactor
20 Oversight Process.

21 We provided our response in an analysis to
22 you by our Letter of Report dated October 12, 2001.
23 We concluded that the current PIs do provide
24 meaningful insight into plant operations and plant
25 performance. However, specifically with regard to

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1 performance indicators adopted for the use in the ROP,
2 we found that sound performance indicator thresholds
3 for the white/yellow and the yellow/red thresholds
4 were initiating events and mitigating systems are not
5 meaningful.

6 For example, for these two categories, the
7 green/white thresholds are based on peer group
8 comparisons where about 5 percent of the licensees
9 might fall into the white category. As we move
10 further down these categories, for example, the
11 white/yellow and the yellow/red thresholds, the
12 performance indicator thresholds are based on risk
13 significance.

14 In the case of initiating events, since
15 plants are designed to accommodate initiating events
16 and tolerate them, risk does not increase very much
17 with the occurrence of a specific initiating event
18 unless other complications occur. So, for example, it
19 would take more than 20 reactor trips per year to
20 effect the initiating event risk category in a
21 sufficient amount to cause a licensee to enter the red
22 band.

23 Clearly, 20 trips in a year is far worse
24 than industry performance has been for at least four
25 decades to my memory.

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1 It would take over 2000 loss of heat sink
2 events over a 3-year period or more than two per day
3 to enter the red category for the loss of heat sink
4 events. Clearly, these are not particularly
5 meaningful. The same patterns occurs in the
6 mitigating system category.

7 The use of risk-based thresholds for PIs
8 has a deeper, more intractable flaw. Specifically, it
9 focuses on the change in CDF that result from changes
10 in a single isolated parameter, assuming that all
11 other factors that affect CDF remain constant. The
12 realistic assessment of the change in CDF cannot be
13 related to the change in a single PI.

14 There is a difference between the
15 definitions of terms like unavailability as used by
16 INPO and WANO in the Reactor Oversight Process as
17 compared to the definitions used by the former AEOD
18 function of the Agency and by PRA practitioners. The
19 multiplicity of definitions can lead to confusion. In
20 the current definitions as used in the ROP are
21 inconsistent with other Agency uses of these terms and
22 are deficient in terms of being applicable to later
23 more expensive analysis. We believe that it would be
24 better to use the former AEOD definitions in the ROP

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1 process rather than the WANO definitions which are
2 currently the definitions incorporated into the ROP.

3 We believe that the Agency should consider
4 other related work that the Agency does when defining
5 the performance indicators. We would also like to
6 point out and believe that unreliability of mitigating
7 systems should be added to the performance indicators.
8 There's an important difference between unavailability
9 and unreliability.

10 The most immediate and pressing need for
11 the ROP is to improve the SDP tools. We note that the
12 SDP tools are incomplete in some areas or are overly
13 optimistic. We continue to believe that the technical
14 adequacy of risk-based SDPs depends on the
15 availability and the quality of a relevant PRA. We
16 therefore believe that the SDPs for at-power
17 situations are adequate, but not yet complete for
18 every licensee. And the threshold values for risk-
19 based SDPs appear to be appropriate and meaningful.

20 However, SDPs for nonreactor-based issues
21 are not risk-informed generally, but are
22 deterministic, and are more difficult to justify. An
23 example is the SDP for fire production. We find this
24 SDP to be overly simplistic and subjective.

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1 An SDP based on low power or shutdown PRA
2 or other management tools like ORAM which is an EPRI
3 outage management tool is needed. Risk continues when
4 a plant is in a shutdown mode and a significant
5 percentage of incidents requiring significance
6 determination occur in the shutdown mode. In all of
7 these situations agglomerate into the total risk
8 profile of the plant. While the worksheets in the
9 SPAR models are adequate for the purposes of
10 estimating risk from individual events, a document and
11 review of the worksheets in the SPAR models is
12 necessary to validate them and maintain licensee and
13 public confidence.

14 When we look at the action matrix there is
15 an assumption embedded in the action matrix where
16 there is an equivalence between the white band PI
17 versus a white band SDP. There is also an assumption
18 that two whites equal a yellow and so on. We have not
19 found documentation of the arguments that would show
20 that these assumptions are valid. We believe that the
21 derivation of the implied equivalency of PIs versus
22 SDPs should be documented. We also suggest that the
23 process of formal decision making could be helpful in
24 resolving some of these problems.

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1 We continue that the ROP is an evolving
2 process and that more work needs to be done. We
3 believe that the staff has done an excellent job so
4 far in establishing and implementing the Reactor
5 Oversight Process. We believe that this new process
6 is supervisor to and more objective than the former
7 oversight process.

8 We looked at training, communications, the
9 displays on the NRC website, the availability and
10 understandability of public information and we believe
11 that all of these factors have been done very well by
12 the staff. We understand that the regions have played
13 a large role in making this process role with
14 licensees, with their own staffs and with the public.
15 We believe that the staff's implementation of the new
16 Reactor Oversight Process so far has been a job well
17 done.

18 Thank you.

19 DR. APOSTOLAKIS: Thank you, Jack. Next
20 topic is regulatory challenges of future plan designs.
21 That will be discussed by Dr. Kress.

22 DR. KRESS: The title may be just a little
23 misleading. This is mostly a summary report of the
24 workshop on this issue that the ACRS sponsored and
25 held back in early June.

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1 Holding such a workshop is somewhat of an
2 unusual thing for ACRS to do, but we thought it would
3 be beneficial mostly for the ACRS itself so that we
4 could become more acquainted with the design features
5 of the various concepts in Gen IV and the other
6 advanced things and become acquainted with the
7 potential policy and technical issues that we may be
8 called upon at some time to give you our best advice
9 on.

10 We also thought it would be helpful for
11 the staff and the industry to engage in this dialogue
12 also. They had already engaged in dialogue, but this
13 would be additional help and was more of a discussion
14 forum than anything.

15 The workshop, I think, all the attendees
16 that we were able to talk to afterwards thought it as
17 highly successful, that it accomplished some good
18 purposes. There were over 100 stakeholders that
19 attended and we had presentations from basically the
20 whole variety of stakeholders including those listed
21 on the slide. I don't need to name them, but it's the
22 full list of people who we selected and invited to
23 participate.

24 I did want to thank Commissioner Diaz for
25 a very nice keynote speech that he gave and he set a

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1 very good tone and we thank him very much for that.
2 Everyone thought it was a very useful start in the
3 meeting.

4 The purpose, as I said, was to see if we
5 could identify what the major regulatory challenges
6 might be for licensing these future reactors. We did
7 develop such a list in the meeting. Several of the
8 ACRS Members went through the minutes of the meeting
9 and all of the presentations and the discussions and
10 gleaned out of that what we thought were the major
11 challenges that were identified. We put those
12 together along with all the presentations and the
13 questions and answers in the Panel discussions into a
14 proceedings which is now ready to be issued as a
15 NUREG. We've finished all of our reviews. It does
16 include this list of regulatory challenges. There
17 were more than two dozen of them, but we didn't
18 prioritize them, so they may not all be as important
19 as others. It makes an interesting list that I think
20 is worth looking at and may serve as a good place for
21 ACRS, at least, to focus some of its attention and
22 even for the staff might benefit by looking at it.

23 We have continued activities in this area,
24 of course. A couple of the ACRS Members participated
25 in the workshop sponsored by the Office of Research in

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1 October. Looking at the research needs for the high-
2 temperature, gas-cooled reactor and developing a list
3 of these needs and at that time we did priorities on
4 some of these.

5 We also have met with the NRC staff and
6 Exelon to discuss a number of things. One, we
7 discussed the readiness of the staff to conduct their
8 licensing activities. We discussed Exelon's proposed
9 licensing approach for the PBMR and we also discussed
10 the staff's reaction to that proposed approach.

11 We intend to have additional meetings. We
12 haven't written a letter on the subject yet because we
13 haven't fully looked at the staff's SER on that issue.
14 We intend to take several of what we think are the
15 more important challenges that we identified and
16 discussed them at much more length at our coming
17 retreat that we have scheduled for January and arrive
18 at some sort of ACRS position on these and perhaps at
19 some time after that we will look for a report to the
20 Commission.

21 DR. APOSTOLAKIS: Thank you, Tom. Our
22 next topic is our activities associated with core
23 power uprates. The lead member is Professor Wallis.

24 MEMBER WALLIS: One of our major
25 activities right now and in the near future concerns

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1 applications for core power uprates and so it's a very
2 current topic. The impetus comes from industry that
3 sees considerable advantages to uprating the power and
4 believes that they can do it safely. Many licensees
5 are planning or have initiated these power uprate
6 programs.

7 In the early 1990s, General Electric
8 initiated a generic power uprate program for BWRs and
9 Westinghouse and Combustion Engineering have recently
10 approached the staff regarding our uprate plans for
11 PWRs. We have not yet received these applications for
12 PWRs so my presentation concerns BWRs only.

13 The first step that G.E. made was an
14 uprate program that was initiated in 1991 which
15 limited in scope to 5 percent typically power uprates
16 and what happened then was they made use of the margin
17 which was already built into the design. The designs
18 had been licensed for power slightly below what they
19 were capable of. And the potential for uprate was
20 essentially already there. So this was not that big
21 a step.

22 Most of the operating BWRs will use this
23 program. The power uprate program that concerns the
24 ACRS at the moment is what's called the Extended
25 Uprate Program which goes by the acronym EPU. These

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1 uprates are substantial, up to about 20 percent. They
2 are achieved by an improved design, by advanced fuel,
3 by very sophisticated tailor-made fuel and by advanced
4 management of that fuel, the way it's put into the
5 reactor, where it's put in, when it's renewed and so
6 on.

7 This is achieved by meeting all the
8 regulatory criteria in place and changing as little as
9 possible the key conditions. For example, the
10 pressure of the reactor vessel is not changed as a
11 result of this power uprate. The key -- the maximum
12 rod power is not changed. But some other things have
13 to change such as the steam flow rate in order to get
14 the power and the turbine has to be changed. So there
15 are some balance of plant changes.

16 The ACRS reviewed the lead plant for
17 Monticello in 1998, 6.3 percent uprate and at that
18 time we recommended that although this was not a
19 risk-informed application that the staff from the
20 applicant should review the impact on plant risk and
21 let us know what those impacts were, that there
22 insights to be gained from so doing and this is what
23 actually has happened.

24 G.E. laid the basis for these uprates by
25 producing typical reports which have been approved by

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1 the staff and they provided generic basis for how to
2 go about evaluating an EPU.

3 I want to discuss a few of the technical
4 issues that we addressed. ATWS, because there is more
5 power and we're concerned about whether or not this
6 plant will recover from ATWS and so we needed to
7 carefully examine the calculations of their bases for
8 what happens during an ATWS and what the operators
9 have to do to get out of it and assure ourselves in
10 that which could be successfully managed.

11 This has been done by the IGE and the
12 licensee. The licensee has paid particular attention
13 to enhanced training programs for the operators so
14 that they know just what to do, when to do it.

15 Core instability is a feature of BWRs.
16 The core instability region, because the power flow
17 rate map is more extensive, the core instability
18 region is more extensive. We have to be assured that
19 instability could be avoided during normal operation,
20 that if instability did occur it would be detected.
21 There was proper instrumentation for detecting it and
22 the operators could handle it.

23 We also had a concern with the effect of
24 core instability and also the oscillations following

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1 an ATWS and the peak heat during one of these
2 oscillation is actually put into a fuel rod.

3 We were concerned that we addressed the
4 material degradation issues such as irradiation and
5 stress corrosion cracking and the embrittlement of the
6 pressure vessel. This is necessary because the
7 neutron flux distribution is different with this new
8 fuel design. So we had to be reassured that indeed
9 the vessel flow was not significantly changed and the
10 embrittlement of the pressure vessel was not an issue.

11 Because of the greater flow rates in the
12 feedwater there is more flow assisted corrosion. We
13 are satisfied that it is manageable and within limits
14 and that inspection procedures will detect it before
15 it becomes serious. Because of greater flow, steam
16 associated with power, there is a small potential for
17 flow induced vibration of steam driers, for example,
18 and this could lead to fatigue. Again, we addressed
19 this issue and it was satisfactorily responded to.

20 The containment response, because there's
21 more power and more decay heat, the containment does
22 experience somewhat enhanced pressures and
23 temperatures during the loss of coolant accident.
24 These are within the regulatory requirements to meet
25 the regulations.

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1 We wrote a letter on Duane Arnold's
2 application. This is a significant core operator of
3 15.3 percent and we recommendation approval of that
4 application in October.

5 We are currently addressing the Dresden
6 Quad Cities power stations' applications which are for
7 17 and 17.8 percent and we hope to finish our letter
8 to you in the next few days.

9 I'd like in concluding to make a few
10 general observations that the ACRS has on how these
11 reviews are conducted and then I'll turn to my
12 colleague, Dana Powers, to expand on these
13 observations.

14 The staff rationale for its decision is
15 reflected in the Safety Evaluation Report. This is
16 the document which explains the staff's decision and
17 what we notice is that this relies very heavily on the
18 applicant's analysis, the applicant's presentation,
19 the SER, the Safety Evaluation Report, tends to
20 reiterate the rationale submitted to the staff and
21 then there's usually a rather short statement that the
22 staff finds is acceptable.

23 And the way -- the question is well, why
24 did they find it acceptable? And the way the ACRS
25 determines this is to meet with the staff, ask a lot

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1 of questions and satisfy ourselves that the staff had
2 good rationale for making this decision.

3 I think we have thought about whether or
4 not the Safety Evaluation Report should be more
5 explicit, make it clearer to someone who doesn't know
6 some of these reasons that the staff has, just why
7 they've reached this decision.

8 This might be of help to the Standard
9 Review Plan. There isn't a Standard Review Plan for
10 power upgrades and the staff has good reasons for not
11 having the Standard Review Plan, but if there were one
12 it might be clearer just what the staff is looking
13 for, what the criteria are and so on. That might be
14 useful.

15 Another observation we have is that
16 thought might be given to when the questions that are
17 addressed by the staff are important enough or when
18 the answers are uncertain enough it is advisable to
19 make independent evaluations rather than relying on
20 submission from a licensee.

21 And so staff needs to be clear just when
22 it needs to ask for confirmatory analyses or make
23 confirmatory analyses of its own. This would
24 certainly help public confidence if there were
25 independent assessments of some of the -- if one could

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1 identify some key issue just needed to be evaluated
2 independently.

3 In the case of the power uprates we've
4 reviewed so far, this was done for the Duane Arnold
5 containment analysis, but I think that's the only case
6 where the staff felt the need to make an independent
7 confirmatory analysis.

8 I'd like to ask my colleague, Dana Powers
9 to continue.

10 DR. POWERS: Well, I think in our
11 examinations of these power uprates that we've looked
12 at so far, we did conclude that the staff has done an
13 adequately detailed analysis of the applications.
14 They do seem to have learned the lessons that have
15 come from the Maine Yankee incident. They have, for
16 instance, done a very thorough examination of some of
17 the licensees' calculations, but on site, looking at
18 the inputs and the details the way the analyses were
19 done.

20 On the other hand, they don't have a
21 standard review plan for these activities and that
22 raises the question of whether this kind of detailed
23 analysis that's been accorded the first and the second
24 applications will be accorded to the fifteenth and
25 sixteenth of these applications. And is the process

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1 going to be sufficiently transparent to both the
2 licensees and the public to have confidence in.

3 You can contrast this approach that the
4 staff has adapted on the power uprates to the much
5 more disciplined and documented approach that they've
6 accorded the license renewal process. They have a
7 similarity in that they both involve the extended
8 generation of nuclear power.

9 The documentation that the staff provides
10 and it's a standard in the Safety Evaluation Report
11 has been a challenge to us. We would rely on heavily
12 to guide our review and when we don't have the
13 rationale for the staff accepting it, we of course
14 have to impose additional burdens both on the staff
15 and the licensee to delve into in some depth. But I
16 think there's a more important issue associated with
17 the Safety Evaluation Reports. That is, as written in
18 their summary fashion right now, they really don't
19 contribute to the Commission's goal to engender
20 greater public confidence in the NRC's examination of
21 these licensing actions.

22 It may well be we need to think about
23 considering returning to an earlier era when our
24 Safety Evaluation Reports that the NRC produced really
25 were engineering evaluation documents and provided the

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1 kind of detail that would give one confidence that the
2 NRC had done a very thorough examination of the
3 applicant's analysis.

4 DR. APOSTOLAKIS: Thank you, Graham and
5 Dana. And the last topic is the status of ACRS
6 activities on license renewal to be discussed by Dr.
7 Bonaca.

8 DR. BONACA: The purpose of my
9 presentation is to provide you with a brief update on
10 the license renewal activities.

11 Since the last Commission meeting we have
12 performed a number of reviews. First of all, we
13 evaluated whether revisions to 10 CFR Part 54 are
14 required. We also completed the final reviews of
15 Arkansas Nuclear 1 and Hatch applications and we
16 performed an initial review of Turkey Point. I would
17 like to note that Hatch application is the first BWR
18 application that we reviewed and that the Turkey Point
19 is the first Westinghouse. With these two reviews
20 behind us, we have then reviewed one plant of each
21 type of reactors run in the U.S., a BMW plant, a CE
22 plant, a Westinghouse plant and the boiler plant. And
23 so we have a significant experience behind us in
24 different types of reactors.

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1 Regarding 10 CFR 54 and possible need to
2 revise it, we concluded that 10 CFR part 54 is
3 effective and efficient. We feel that it is effective
4 because it allows the implementation of the rule,
5 leads to the identification of safety important
6 components that need to be managed for aging and also
7 leads to the identification of adequate management
8 programs.

9 It is efficient also because it utilizes
10 existing established categorization processes of
11 components and relies on existing processes to the
12 extent possible, also from aging management, so it is
13 an efficient system. It doesn't create something that
14 we know. It just relies on existing processes.

15 We have learned a lot over the past two,
16 three years in license renewal and I believe the staff
17 and the industry have done a significant effort in the
18 guidance documents. Therefore, we feel that we need
19 to maintain these processes stable and avoid any rule
20 making that will, in fact, destabilize the process as
21 we need to do.

22 There are still differences between the
23 staff and the industry. They are technical and their
24 resolution can be accommodated in the upcoming updates
25 of the generic license renewal guidance documents.

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1 The first update will be next year. So for two years
2 are there.

3 Regarding Arkansas 1 and Hatch
4 applications, we completed our reviews in May 2001 and
5 November 2001, respectively. And we felt for both
6 applications that the requirements of 10 CFR Part 54
7 were effectively implemented. In those cases, in both
8 cases, we found that the staff had performed an
9 effective review of the applications. The SERs are
10 extensive. They go into high detail and good
11 analysis. We found that the resolution of the open
12 items was appropriate and essentially we concluded
13 that adequate programs have been established to manage
14 the effects of aging, so that these plants can be
15 operated safely and in accordance with the licensing
16 basis for the extended plant operation.

17 A couple of observations I would like to
18 make for Arkansas 1 and Hatch. First, the Arkansas 1
19 application was completed five months ahead of
20 schedule. Well, we noted already that before, but one
21 of the reasons is that there were only six open items
22 in the interim report. Clearly, there is a
23 convergence of understanding between the staff and the
24 applicants between what needs to be done. And so, in
25 fact, for Arkansas 1, we didn't feel that we needed to

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1 write an interim letter because simply there were very
2 few open items to be dealt with.

3 For Hatch, there were many more open
4 items. And the staff performed a significant SER.
5 They also included in the SER significant notification
6 of some of the main issues of contention, especially
7 the seismic 2/1 issues. They were very highly
8 discussed in the SER. They provided significant
9 information. We recommended that those clarifications
10 be included in the guidance documents because they
11 will prevent the same issues to become contended
12 issues on future applications.

13 Turkey Point, as I mentioned, we only
14 reviewed the interim application which is very
15 complete. The document was very scrutable. By
16 scrutable, I mean very easy to understand through the
17 document how you lead to the selection of components
18 and scope, how do you go about looking at the aging
19 and the draft SER was comprehensive. Again, on this
20 application we have only four open items. Of those,
21 only one has some significance, including seismic
22 piping issue. The other three can be readily dealt
23 with, I believe. And because of that, again, we chose
24 not to have an interim report and as you know, we will
25 be issuing a final report on Turkey Point in the

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1 spring of 2002. We plan to visit the site in March
2 2002 and have the whole final subcommittee meeting for
3 this application at the site or close to the site.

4 A couple of observations before I complete
5 my presentation. The point was that the applications
6 are becoming more scrutable and complete and again I
7 define the use of the word scrutable in just you can
8 understand what's happening and how you get to the
9 conclusions. And we expect this strength to continue
10 in those applications following the generic license
11 renewal guidance documents. We hear that San Onofre
12 will submit in the upcoming year the first application
13 which is developed in the standard format and so we
14 have high expectations that that would be facilitating
15 a review further.

16 To conclude my presentation, for 2002 we
17 plan to review Surry, North Anna, McGuire, Catawba and
18 Pitch Bottom applications and to also perform the
19 final review of Turkey Point, Surry and North Anna.

20 In addition to that, we plan to review
21 revisions to the generic guidance documents. So we
22 have a full table and to cover this pretty large scope
23 of applications, in a fair way, we will develop two
24 license renewal subcommittees starting at the
25 beginning of 2002 and that practically will involve

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1 every Member of the Committee on one of the two
2 subcommittees.

3 With that, this completes my presentation.

4 DR. APOSTOLAKIS: Thank you, Mario. This
5 completes the formal presentations. I hope it's
6 evident to the Commission that in addition to
7 completing the reviews of the license renewal
8 applications in record time, the Committee also
9 managed to complete its presentation in record time.

10 (Laughter.)

11 So now we are open for questions.

12 CHAIRMAN MESERVE: Thank you very much.
13 Clearly, you have been very busy and we appreciate, as
14 always, all the help that you offer us.

15 Let me turn first to Commissioner
16 Merrifield.

17 COMMISSIONER MERRIFIELD: Thank you very
18 much, Mr. Chairman, and I compliment the Chairman of
19 the ACRS in the precision of the testimony and
20 certainly you have set a standard which will be
21 difficult to meet, one of which I'm certain you will
22 in the future.

23 The first question goes to Mr. Sieber and
24 it relates to Slide 8 of the presentation. In the
25 most recent monthly update on the tasking memo, our

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1 staff indicated the selected risk-based performance
2 indicators for unreliability and unavailability will
3 be incorporated into a pilot program in early 2002 for
4 potential enhancements to the current set of PIs.

5 Does that recommendation or that comment
6 meet what you set out in your second bullet and I'm
7 wondering the extent to which they may or may not have
8 briefed you recently on risk-based performance
9 indicator efforts and if so, do you have any particular
10 insights you'd like to share on that?

11 MEMBER SIEBER: Well, the last time we
12 were briefed as in September, early in September, so
13 that isn't real current. We knew at the time that
14 they were considering these, but we felt an obligation
15 to put it in our letter report to reinforce the fact
16 that they would continue to redefine their PI process.

17 On the other hand, I'm not aware of
18 specifically what it is the staff is going to do.
19 Maybe I can ask Dr. Apostolakis if he has any more
20 insights than I do.

21 DR. APOSTOLAKIS: Well, I was at that
22 meeting too. I don't know anything after that what
23 happened, but I think it was encouraging that the
24 staff was aware of the main difficulty that Mr. Sieber
25 identified that you can't really have risk-based

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1 performance indicators by looking at one event, like
2 initiating events only.

3 Now whether we will be successful in
4 identifying risk-based performance indicators is open
5 to question. We really don't know, but clearly, you
6 cannot look at one event. You have to look at a
7 number of events and the staff was aware of it when
8 they came before us.

9 COMMISSIONER MERRIFIELD: What this leads
10 me to thinking is perhaps the staff having had that
11 encounter has had further thinking on the topic and
12 there may be usefulness in their getting back together
13 with all of you to update you in terms of where
14 they're going and so that you can --

15 MEMBER SIEBER: I think that would be a
16 good idea.

17 COMMISSIONER MERRIFIELD: At the last
18 Commission meeting that we had with the staff on our
19 new oversight process, the staff had similar views
20 that you have in slide 9 relative to the SDP and the
21 need to improve the SDP tools. Late September, they
22 did complete plant-specific SDP notebooks for all the
23 plants.

24 MEMBER SIEBER: Well, that's good.

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1 COMMISSIONER MERRIFIELD: And I'm
2 wondering if you had a chance to look at any of those
3 and if so, if you have any reflection on their value?

4 MEMBER SIEBER: I have not had an
5 opportunity to do that, but we intend to look at some
6 examples and discuss those at our January meeting. We
7 have a session planned for four hours to look at SDPs.

8 COMMISSIONER MERRIFIELD: I guess similar
9 to my last question, it's positive you've got a
10 meeting schedule that would be instructive to get some
11 understanding of the value that you think those may
12 have for us moving forward in terms of addressing it
13 and concerns you have in Slide 9?

14 MEMBER SIEBER: It was my understanding
15 that there were some. There are 13 SDP types all
16 together. Some are based on operating plant. Some of
17 them are radiological control and effluents and you
18 know, containment, and so forth.

19 Not all those are complete and some that
20 are complete could stand a little more work. And so
21 I think it's going to be a while before the staff gets
22 everything done. In fact, they may never get
23 everything done because as they use this process over
24 and over again in different situations, I'm sure that
25 they will realize that there are ways to improve the

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1 process and I encourage that kind of an attitude on
2 the staff's part.

3 DR. APOSTOLAKIS: I suppose that they will
4 never be done, that we will have something adequate at
5 some point, if that's what you mean.

6 COMMISSIONER MERRIFIELD: It will never be
7 perfect. None of us are. We all struggle with that.

8 MEMBER SIEBER: I think right now though
9 the revised reactor oversight process is superior to
10 the old process.

11 COMMISSIONER MERRIFIELD: Right.

12 MEMBER SIEBER: In that it's more
13 objective and I guess I' like to say I was very much
14 impressed by the communication of the process, the
15 public meetings that all the regions had, the NRC
16 website which the last time I looked wasn't there, but
17 I guess it's being revised right now, but all these
18 additional factors add strength to the oversight
19 process the way it is and when I read the initial
20 goals, I think the staff has met them.

21 COMMISSIONER MERRIFIELD: Dr. Kress, in
22 October, the staff provided the Commission an
23 information SECY paper, SECY 01-01-88 with the staff's
24 readiness to review applications for licenses and to
25 inspect new plants. In that report, the staff

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1 outlined some of the research that will be needed,
2 some of the staff skill gaps and some of the
3 inspection and technical challenges we have before us.
4 I'm wondering if you could give us any thoughts in
5 terms of your views on that report?

6 DR. KRESS: I thought the staff did an
7 excellent job in putting together what their needs
8 were there and they did find some substantial gaps.
9 We haven't had a chance to develop a committee
10 position on this, but I personally thought they hit it
11 pretty much right on the button. It was a good job.

12 COMMISSIONER MERRIFIELD: Okay, in the
13 presentation, you mentioned some of the activities
14 that you all have been working on relative to the
15 pebble-bed modular reactor and I'm wondering if you
16 can comment on where you are relative to keeping
17 abreast of matters associated with AP-1000 and General
18 Atomics gas reactor.

19 DR. KRESS: We need another committee
20 meeting on that subject. Our new subcommittee
21 chairman on that is Professor Wallis. I don't know
22 what his plans are for near term.

23 MEMBER WALLIS: Well, we're meeting. We
24 have set some preliminary presentations on AP-1000 and
25 we're waiting for the substantial ones.

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1 The question is we did approve AP-600 and
2 there were questions are there other such scaling
3 differences, are there significant differences between
4 AP-600 and AP-1000 that need to be addressed. There
5 may be a few of those.

6 COMMISSIONER MERRIFIELD: Yes, to the
7 extent to which -- I think the direction of my
8 question was to make sure that although there is a lot
9 of notoriety about the pebble-bed modular reactor
10 effort, there are a number of utilities out there that
11 are exploring a variety of reactors and certainly the
12 AP-1000 and the General Atomics reactor are also
13 reactors which have gotten licensee attention. I
14 think not only is that information that we get, but
15 obviously it's out in the trade press as well. I just
16 wanted to make sure you're keeping your focus on not
17 merely one reactor design, but a myriad of designs --

18 MEMBER WALLIS: We're well aware of AP-
19 1000. We've been collecting information. We're
20 really waiting for the staff and Westinghouse to come
21 through with the hard nosed presentation.

22 COMMISSIONER MERRIFIELD: Maybe you need
23 to press them in terms of setting --

24 MEMBER WALLIS: I'm not sure it's our role
25 to press Westinghouse.

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1 COMMISSIONER MERRIFIELD: Well, at least
2 in terms of our staff.

3 DR. KRESS: Yes, certainly.

4 COMMISSIONER MERRIFIELD: I think there's
5 an expectation on the part of the Commission that we
6 as a Commission be ready to review those reactors and
7 --

8 MEMBER WALLIS: That was our expectation
9 too and I'm not quite sure why we haven't seen it a
10 little earlier. I think we do have to wait until we
11 get to the proper submission.

12 DR. POWERS: It's my understanding that
13 the staff and Westinghouse are now going through a
14 decision process to decide the extent and content of
15 the review that will accord the reactor and I think
16 we're waiting the outcome of that decision process.

17 COMMISSIONER MERRIFIELD: One last quick
18 question directed toward Dr. Wallis, you talked a
19 little bit about the Duane Arnold power uprate, in the
20 latest monthly report, the Tasking memorandum, it did
21 reflect that the ACRS comments had required
22 substantial changes to the safety evaluation. And I'm
23 wondering sort of the driver behind that, you did have
24 a bullet on slide 35 in which you spoke about the need
25 for confirmatory analysis and improved guidance

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1 required from the staff on safety evaluations. And
2 you did comment about standard review plan. So I'm
3 trying to get those things together and just have a
4 quick sense of where you are.

5 MEMBER WALLIS: We have an on-going
6 discussion with the staff about these issues. The
7 staff doesn't believe they need a standard review
8 plan, although the Maine Yankee lessons learned
9 reports said there should be one for power uprates.
10 They believe they have enough information, there's
11 enough precedence being set, they're going to learn by
12 having to learn from Duane Arnold. They can keep
13 learning and this is an evolutionary process which is
14 as effective as trying to put together a standard
15 review panel at this point.

16 On the need for confirmatory analysis I
17 think what we're really saying is you need to get it
18 clear what the criteria are for you to decide whether
19 or not you need a confirmatory analysis and make that
20 clear. This is perhaps the hardest part, be more
21 specific. I mean a standard review plan will be more
22 specific and clear and if there could be sort of
23 criteria established that these are the kind of
24 situations where you really need to do something

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1 confirmative, rather than just accepting what you see.
2 I think that would hep.

3 So they've gone through the rationale
4 process which we can understand is transparent. The
5 licensees can understand it and it's clearer. I think
6 that's what we're suggesting there might be a need
7 for.

8 COMMISSIONER MERRIFIELD: Thank you, Mr.
9 Chairman.

10 CHAIRMAN MESERVE: Thank you. To Mr.
11 Sieber, I'd like to come back to this issue you raised
12 about the thresholds for the initiating events and
13 mitigating systems and particularly the white/yellow,
14 yellow/red thresholds and the problem of making those
15 risk-based and viewing them in isolation means that
16 you've got these huge number of events before you
17 cross a threshold.

18 MEMBER SIEBER: That's right.

19 CHAIRMAN MESERVE: And I'm curious about
20 -- I read from your letter that you sent -- the ACRS
21 sent us that there's a role for our expert judgment in
22 setting those thresholds.

23 I am curious about how you think through
24 that problem. I mean we have said we want to base
25 those thresholds on risk has been something that the

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1 ACRS has supported and urged in a central theme that
2 has been one that I think the Commission has been very
3 responsive to and it would seem to me that if you're
4 going to make those departures from the one at a time,
5 you'd have to think about what other things could be
6 happening at the same time as these other events,
7 what's the probability of those. It seems to be an
8 enormously complicated issue that one would have to
9 address to set the thresholds at some other level and
10 I wonder at the end of the day if you're really going
11 to be able to say that they're based on risk rather
12 than some other criterion.

13 You've raised an issue that's a legitimate
14 one. I just don't know how to solve it in a way
15 that's consistent with the philosophy that you've
16 advocated and that we have accepted.

17 MEMBER SIEBER: Well, I think to start off
18 with, it's even more complicated than you describe
19 because when you go through that process and not look
20 at performance indicators in isolation, all the
21 thresholds end up being plant-specific and that adds
22 another degree of complexity to it.

23 It would seem to me that the further away
24 that you get from the current method of doing it which
25 gives answers that are thresholds that aren't

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1 particularly meaningful, the less risk-based you
2 become. But I concede to myself in thinking through
3 this problem is that really what the reactor oversight
4 process is is a management tool to identify and
5 escalate performance that isn't up to par and once
6 it's identified through the inspection process or by
7 crossing into a white threshold that puts you into the
8 action matrix where additional attention occurs, and
9 until I get to red thresholds, the Commission
10 ordinarily would not be taking an action by issuing an
11 order or something of that nature.

12 So I think that the oversight process even
13 the way it is right now will function. The question
14 is when the public or the technical community look at
15 these thresholds or licensees, do they have that
16 hidden smile on their face and we really have to be
17 bad before you get to this level.

18 Perhaps Doctor, you may want to add to
19 this --

20 DR. APOSTOLAKIS: Mr. Chairman, the bottom
21 line of our recommendation is that at this time anyway
22 the performance indicators for initiating events and
23 mitigating systems should be decoupled from risk.
24 There will be measures of performance where
25 performance is defined as -- it was defined by the

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1 original -- I believe it was 007 or 0007 report,
2 namely, they looked at the performance of all the
3 plants, of all the units and they took the 95th
4 percentile. They said if you are below this, your
5 performance is acceptable.

6 This is the message we're getting from the
7 performance indicators and what we're saying is you
8 define this green/white threshold that way, but then
9 when you went to white/yellow you switched the risk.
10 Don't do that. Find another way related to
11 performance to define these additional thresholds
12 which creates now some inconsistency between the
13 performance indicators and the significance
14 determination process which is risk-based and that's
15 why it's really very important to make sure that we
16 all agree that the white in the initiating event
17 performance indicator means similar things as a white
18 in the SDP because they are treated interchangeably in
19 the action matrix.

20 I'm not saying it's an easy problem, but
21 essentially the answer to your question is yes, we are
22 decoupling the performance indicators from risk.

23 DR. KRESS: And one of the reasons for
24 that is we have searched for ways to actually do this
25 risk significance and I think you put your finger

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1 right on it. It virtually is impossible to do it at
2 this time. We cannot come up with a technical way to
3 relate to sample of things to the actual change in
4 risk that you would get. That's a very difficult
5 problem.

6 DR. APOSTOLAKIS: Of course, in an ideal
7 world one would have a PRA, get the input and then get
8 it on the CDF.

9 (Laughter.)

10 But even though the work is not ideal --

11 CHAIRMAN MESERVE: That's a great unified
12 theory.

13 DR. APOSTOLAKIS: Well, they've been
14 searching for it for 60 days.

15 (Laughter.)

16 CHAIRMAN MESERVE: But it seems to me that
17 you've solved this problem, but then you've shifted in
18 the whole of the action matrix is sort of premised
19 that these thresholds have a risk basis, and so now
20 you've got two of the categories performance
21 indicators where you're admitting up front they don't
22 have a risk basis.

23 How do you say you've acted in a fashion
24 that's consistent in applying those nonrisk-based
25 performance indicators against other things you're

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1 getting out of the significance termination process
2 that are all guided by risk to show consistency?

3 DR. APOSTOLAKIS: And this is related to
4 recommendation for checking the consistency of the
5 colors. How to do that, well again, it will be an
6 expert judgment process, but at least you will be
7 asking the right questions. We didn't, I hate to say,
8 we didn't supply the answer because Commissioner Dicus
9 will use it against us, but this was the issue really.
10 I mean maybe we have to revised the action matrix.
11 Some of us felt that we should, but the Committee's
12 position was not to say anything about it.

13 DR. KRESS: Well, some of us felt that in
14 the significance determination process it is possible
15 to determine the risk and that maybe that ought to be
16 risk-informed and a different set of considerations
17 than the performance indicators and that was one thing
18 we discussed was the possibility.

19 DR. APOSTOLAKIS: But also -- I'm sorry.

20 DR. KRESS: Go ahead.

21 DR. APOSTOLAKIS: Even if you look at it
22 now, I believe the actions are really driven by the
23 SDP findings. Is that true, John?

24 MEMBER SIEBER: I think so too.

25 DR. APOSTOLAKIS: It's not the PIs.

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1 MEMBER SIEBER: And I don't really see an
2 inconsistency by having part of the Reactor Oversight
3 Process as performance-based and not necessarily
4 risk-based and another part of it being risk-informed
5 because it's supposed to have elements of both. I
6 think that that's a legitimate approach. I think you
7 will accomplish your overall goal of management if
8 that's where it is we ultimately end up.

9 DR. APOSTOLAKIS: There were some ideas
10 discussed around this, but we failed to have a
11 committee position, unfortunately.

12 CHAIRMAN MESERVE: One other issue that
13 has come up in our previous discussions of performance
14 indicators in various contexts, and you haven't
15 mentioned at all which is the issue of leading
16 indicators versus trailing indicators and ideally,
17 we'd like to have lots of leading indicators. Is this
18 something that you're continuing to evaluate. Do you
19 have any advice for us?

20 MEMBER SIEBER: We haven't given you any
21 specific advice and I guess I can only speak from my
22 personal appearance. In order to develop some kind of
23 leading indicators in a real actual power plant, you
24 end up looking at 200 to 300 indicators to say I see
25 declining performance here and sooner or later this is

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1 going to lead to trouble. When you do that, you get
2 into observation of administrative factors and how
3 managers manage and that's really not practical for --
4 in my view anyway, a regulatory agency to be in there
5 attempting to manage the plant. So I think that with
6 the white thresholds and performance indicators you
7 will have some idea that a plant is headed for
8 problems just because of the way they're set and this
9 is the way the industry groups do it also. But
10 perhaps without getting into all this detail down in
11 the functioning of various departments in the plant,
12 you would -- might be the best thing, you know, the
13 best you can get out of the set that you have. They
14 are not leading indicators in my opinion, except to
15 the extent you can tell a plant this performance is
16 declining.

17 CHAIRMAN MESERVE: Dr. Kress, you gave us
18 a summary of where you are. And let me push you just
19 in one area. Are there any issues that came out of
20 your examination of gaps or problems and our capacity
21 to deal with advance reactors of which the staff is
22 not aware?

23 DR. KRESS: No.

24 CHAIRMAN MESERVE: I mean is there
25 anything we should push you to raise with us now?

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1 DR. KRESS: No. I'm absolutely certain
2 the staff is just as aware of the various issues as we
3 are. So I don't think we came up with any new ones
4 that -- we may put different priorities on them than
5 the staff --

6 CHAIRMAN MESERVE: Good. Thank you.

7 DR. POWERS: Well, I think it's fair to
8 say more than that, we did participate in one of the
9 staff's workshops to share information to assure that
10 there's a pretty good consensus of what the issues
11 are.

12 DR. KRESS: Yes.

13 CHAIRMAN MESERVE: Dr. Wallis and Dr.
14 Powers, I'd like to just take you one step further.
15 You got right to the threshold of saying you think
16 there should be an SRP. Didn't quite say it. Should
17 I push --

18 DR. POWERS: Well, we think there's an
19 SRP.

20 CHAIRMAN MESERVE: Okay, thank you.

21 CHAIRMAN MESERVE: Commissioner Dicus.

22 COMMISSIONER DICUS: Thank you. I had
23 three short and easy questions but he just asked one
24 of them so now I only have two. I was going to push

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1 you to the threshold too, but you bumped up against it
2 and you didn't quite step over it.

3 On future plant designs on the NUREG you
4 said you identified perhaps a couple of dozen
5 regulatory issues. I want to ask you to elaborate
6 beyond that. I think you want us to read all about
7 it, so I'll wait to read all about it. But involved
8 in there, were there any policy issues?

9 DR. KRESS: Oh yes.

10 COMMISSIONER DICUS: So the regulatory
11 issues are policy issues?

12 DR. KRESS: It's policy and technical
13 issues.

14 COMMISSIONER DICUS: Okay. Well, maybe I
15 will push you a little bit then. We'll wait and read
16 about it.

17 DR. KRESS: I have the list with me but I
18 hated to pick out any one because we haven't
19 prioritized them. In general, it seems like what is
20 the role of a prototype test in the regulatory area.
21 It's really broad issues. How do you deal with
22 defense-in-depth and a system like the pebble-bed
23 modular reactor. It's the standard list, but I think
24 having them all written down in one place is going to
25 be helpful.

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1 COMMISSIONER DICUS: And I guess the only
2 other question then I will have is you mention that
3 there had been quite a few open items on the Hatch
4 renewal application. Was that the -- if you want to
5 go into it, something with the kind of application of
6 the fact that it was the first BWR?

7 DR. BONACA: No. There really wasn't much
8 to do with the fact of the BWR. It just simply -- I
9 think the licensee first of all took an approach in
10 the scoping process that was different from the one
11 used afterwards. It was function based. Therefore,
12 it made it very difficult for a reviewer to understand
13 what components were in scope and which were not.
14 There was the beginning of the difficulty there.
15 Since it was function-based and the function
16 identified may not be the principal function of the
17 system, okay the system may have been in scope, but
18 then was put within the function that was normally not
19 thought about, so that caused a couple of problems.
20 One is the significant number of RAIs that the staff
21 had to go through.

22 And then of course, there were other
23 issues of interpretation that the applicant made. I
24 think in part seems to me, at least as a personal
25 observation, it depends very much on how an applicant

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1 has gone after the previous application and look at
2 success criteria to determine which way they're going
3 to go and how an applicant may choose, in fact, to
4 challenge that resolution and to go its own way. So
5 that was, I believe more of a choice of the applicant
6 than anything else.

7 COMMISSIONER DICUS: Okay, thank you.
8 That's it.

9 CHAIRMAN MESERVE: Commissioner Diaz.

10 COMMISSIONER DIAZ: Mr. Chairman, what a
11 pleasure to be in front of you again. It seems like
12 it's been a long time. Let me start with where the
13 Chairman was dabbing at in the PIs and the significant
14 determination process and of course, having been a
15 professor, I like to preface things with a statement.
16 Heterogeneity is not bad. Not bad at all. In fact,
17 I don't know anything homogeneous that functions well,
18 not a reactor core, not a transistor, not a society,
19 so having one part that is essentially
20 performance-based and one part that is risk-based or
21 risk-informed, actually seems to complement each and
22 is the total that we look at and not any one of the
23 parts.

24 Any comments?

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1 DR. APOSTOLAKIS: We have not said
2 anything in the letter that would make you say things
3 like that.

4 (Laughter.)

5 We fully agree and in fact that's why
6 decision theory has been developed to deal with
7 multiplicity of attributes and that's why the
8 Committee, in fact, decided not to state what would be
9 the way to do that. But when you have heterogeneity,
10 as you identify them, you have to have some internal
11 consistency. White here must be the same as there,
12 unless your action matrix doesn't something else. The
13 way it is now though, all it says is if you have two
14 whites here under the same -- what is it, goal -- or
15 if you have a yellow, no matter where they come from,
16 do this. Well, the question is then because of the
17 heterogeneity, are we sure we want to do that? And
18 white has been the same thing -- that's all we're
19 saying. And I think we can think about it and come up
20 perhaps with different bands or something. But there
21 is nothing new. You're absolutely right about this.

22 COMMISSIONER DIAZ: Yes. And I think what
23 we should try to do is from my viewpoint is to
24 strengthen that process, not make it homogenous,
25 actually make sure we understand when we are in one

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1 mode and in the other mode and when the total gets
2 together, that it has the proper strength.

3 I think this -- we need to understand this
4 as a regulatory tool, so it's not just a management
5 tool.

6 DR. POWERS: I think that's a very
7 important point to bear in mind before you devote huge
8 amounts of resources to resolving issues of two whites
9 and their equivalency or lack of -- the outcome of the
10 action matrix, the NRC doesn't say anything about the
11 plant unless it happens to hit red and then you guys
12 get -- you're so involved, I don't think you need the
13 action matrix at red. But short of that, really
14 deciding on how you marshal your internal resources
15 from the action matrix and whether you want to devote
16 enormous amounts of effort to assuring out to three
17 significant digits who have consistency across these
18 definitions, maybe you don't need to have that kind of
19 --

20 COMMISSIONER DIAZ: But we need and I
21 agree, we need to be able to understand them and be
22 able to say which one is in which base and then I
23 think that's important.

24 DR. APOSTOLAKIS: And I think,
25 Commissioner, you're managing now to push us to the

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1 point where internal disagreements will start
2 surfacing.

3 (Laughter.)

4 So you have another question, I would
5 really appreciate it.

6 (Laughter.)

7 COMMISSIONER DIAZ: See, I have never been
8 known to do that.

9 (Laughter.)

10 But I might start in the future.

11 DR. APOSTOLAKIS: But it's something we
12 are agreeing with you or you are agreeing with us.

13 COMMISSIONER DIAZ: I'm agreeing with you,
14 of course. Yes. All right. I might make a comment
15 in here. Just to make a point that the brief duration
16 presentation was appreciated. I think it was directly
17 proportional to the fact that the Chairman's comments
18 were very short.

19 (Laughter.)

20 DR. APOSTOLAKIS: As opposed to the past
21 Chairman here?

22 (Laughter.)

23 COMMISSIONER DIAZ: All right, let me to
24 go the next one because I think we're all getting
25 tired and punchy in here. On the issue of the

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1 conclusions regarding plant design and the Chairman
2 touched on it. There was no specific recommendation
3 that you have on that issue?

4 DR. KRESS: Not at the moment.

5 COMMISSIONER DIAZ: On the issue of the --
6 getting an SDP for low power and shutdown, an issue
7 that I know is close to your hearts and not so much to
8 mine, have you narrowed down something that is
9 specific and simple and doable in getting an SDP for
10 low power and shutdown which does not include the
11 rulemaking? Have you narrowed that down to a point
12 where you could say yes, there is something that can
13 be done that is meaningful and that will serve the
14 Commission?

15 DR. APOSTOLAKIS: Dr. Powers?

16 DR. POWERS: We have not. The viability
17 of doing that though, we're confident in, because the
18 tools that licensees are using to organize their
19 shutdown processes have this color component to them
20 of rating the various levels of risk that they're
21 tolerating, even though it's qualitative. It's
22 clearly doable. Whether you have all of the
23 regulatory handles that you might want to have to
24 address that is probably something that I'm not
25 competent to answer. I suspect you don't, but on the

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1 other hand, I suspect you have sufficient licensee
2 enthusiasm that they may be able to come forward with
3 their own approach on this and an NEI approach on
4 here's an indicator that our shutdown operations are
5 indeed proceeding safely for you, because they're
6 having tremendous success, as you're well aware and it
7 appears that these tools are suitable for controlling
8 a process and they would be equally suitable, I think,
9 for evaluating the process.

10 So the doability exists. We haven't done
11 it.

12 COMMISSIONER DIAZ: Okay.

13 DR. KRESS: The point I'd like to make
14 there is when you have an event during shutdown, you
15 do have one point snapshot in time configuration of
16 the plant that you can identify and you can determine
17 the risk significance of that through normal PRA
18 processes. When we complained about not having the
19 risk implications of shutdown, it's different than
20 that. It's considerably different. What you're
21 interested in there is over the lifetime of the plant,
22 during all of its shutdown configurations, how much
23 risk does it add to the system? Those are unknown
24 configurations and they're different at each snapshot
25 in time and it's not something you can simply stick in

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1 a PRA. So the two conditions are quite different from
2 each other. We think a significant determination
3 process can be done with current PRA technology. It
4 just has to be done.

5 COMMISSIONER DIAZ: Which, of course,
6 brings to heart the issue of the quality of the PRA,
7 keeps coming back. We heard that before, the quality
8 of the PRAs. That's something that will be raised in
9 the near future.

10 Let's go back to the public involvement in
11 the license renewal process. As you know, we're all
12 now struggling with the fact that in the new -- after
13 September 11th, there are things that really don't
14 appear to be appropriate or right now to be in the
15 public domain. However, the Commission keeps wanting
16 to make sure that we provide the appropriate
17 information that doesn't compromise the national
18 security.

19 Has the Committee deliberated on the issue
20 of the license renewal? Are there any components in
21 there that you believe are appropriate to maintain
22 very open in the process, any changes? Is that
23 something you have looked at?

24 DR. BONACA: The question is referring to
25 license renewal?

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1 COMMISSIONER DIAZ: License renewal, yes.

2 DR. BONACA: Well, I think if I look at
3 the process by which you identified the components for
4 the aging management programs, I don't think there is
5 anything that should prevent really access from the
6 public to the information in the process itself. I
7 mean it's just -- as I said before, we are using
8 categorization processes which already exist at the
9 plant to identify the components as separately related
10 or supporting those and so I don't see how the
11 information would be useful to somebody who wants to
12 harm the plant.

13 DR. APOSTOLAKIS: I guess this is a case
14 where it's a good thing that the rule is not
15 risk-informed.

16 (Laughter.)

17 DR. BONACA: Although I think the staff
18 has been diligent in including considerations of
19 existing IPEs or risk-informed information to pull
20 components into that, but if you look at the actually
21 the way the applications are developed, it's really a
22 painstaking development of results of evaluations with
23 no judgments regarding safety significance.

24 DR. POWERS: Subjecting someone to going
25 through carefully the entire GALL report may be the

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1 biggest deterrent to terrorism at nuclear power
2 plants.

3 (Laughter.)

4 DR. BONACA: I must say any one of the
5 applications too.

6 COMMISSIONER DIAZ: Okay, a very quick
7 last one. Dr. Wallis, on the power uprates, the
8 confirmatory analysis that you have raised, is that a
9 substantive issue on the -- in the actual decision
10 making or is it a process issue?

11 MEMBER WALLIS: We are reaching decisions
12 based on what we see and I think we can do it. We
13 have raised questions about the boiler aspect of power
14 uprates and there is actually a research program RES
15 is initiating to do that, so in the long run I think
16 we expect the maybe questions. It all looks so easy
17 now. When you start approaching limits this way and
18 this way and some way, the interactors are something
19 you have to worry about. It's a feeling we have. And
20 I noticed there is a research program starting now to
21 address that.

22 One might ask about -- this is going to
23 give some confirmatory results down the road. It
24 might be nice to have them now, but we don't have them
25 yet.

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1 COMMISSIONER DIAZ: Okay, all right, thank
2 you. Last comment. Now that I said it, I think I
3 want to take back that I did agree with you, that
4 would not be true to my form.

5 (Laughter.)

6 Thank you, sir.

7 CHAIRMAN MESERVE: Again, I apologize for
8 our late start, but we very much appreciate the time
9 you spent with us. It's been very helpful as always.
10 With that, we're adjourned.

11 (Whereupon, at 3:04 p.m., the meeting was
12 concluded.)

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