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5 STRATEGIC ASSESSMENT REBASELINING INITIATIVE

6 AND

7 STAKEHOLDERS PUBLIC MEETINGS

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9 STRATEGIC ARENA:

10 PROVIDING RESEARCH EXPERTISE

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12 THURSDAY

13 NOVEMBER 7, 1996

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15 ROSEMONT, ILLINOIS

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17 The Providing Research Expertise Session met at
18 The Ramada Hotel-O'Hare, 6600 North Mannheim Road, at 1:00
19 p.m., Doug Brookman presiding.

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A-G-E-N-D-A

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AGENDA ITEMPAGE

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A Strategic Arena:

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Providing Research Expertise

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

(1:18 p.m.)

MR. BROOKMAN: Good afternoon. Everybody, welcome. My name is Doug Brookman. I'll be facilitating this session.

This session will commence this afternoon with a discussion and presentation based on DSI number 22, research. So with no further ado, let me turn it over.

MR. SPEIS: Okay. Thank you. As the slide indicates, my name is Themis Speis. I'm from the office of research and I would like to give credit to Charles Ader who helped me in the writing of this DSI paper.

This DSI deals with the Commission's research program. It reads: What should be the future role and scope of NRC's research program? I think it would be appropriate, before we discuss some of the external factors and some of the options of the Commission's preliminary views, to provide some prospective and give you a short historical context for the Commission's research program.

The concept of research to provide NRC with an independent technical capability was included by Congress in the Energy Reorganization Act of 1974, to insure that the Commission would have -- and I would like to quote now -- an independent capability for developing and analyzing

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1 technical information related to reactor safety, safe
2 guards and environmental protection in support of the
3 licensing and regulatory process.

4 The question is what does NRC do with this so
5 called research information, independent research
6 information? Well, in summary, it is used to develop new
7 and/or improved existing regulations, to better determine
8 and refine safety margins, quite often to anticipate a
9 wide range of problems and issues, and in general, to
10 develop the necessary tools, technical tools to deal with
11 issues as they arise.

12 It's important to note here that the scope and
13 emphasis of the research program has changed substantially
14 over the years, and of course, that depended on the issues
15 of concern at the time. During the 70's and early 80's,
16 the primary focus of the research program was on so called
17 postulated design basis accidents. I'm referring now to
18 loss of cooling accidents.

19 This was very important because they played a
20 very central role in the licensing of reactors at that
21 time. The focus of the research program was to insure
22 that the criteria for cooling the reactor had a good
23 technical basis.

24 After the TMI accident and especially after
25 the Chernobol accident, the main focus shifted from design

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1 basis accidents to severe accidents, as well as the aging
2 of plant components. Again, the 90's there was a change
3 in emphasis again. This time to advance reactors. This
4 is a group of reactors that were brought in front of the
5 Nuclear Regulatory Commission for our review and approval.
6 Frank Miraglia has a DSI paper on this and tomorrow he
7 will talk more about it.

8 Also in the 90's there was an increased
9 emphasis on aging related research and the background for
10 that was operating experience and of course, the industry
11 had a proposal in front of us for license renewal. There
12 was a possibility -- it's still going on -- that some of
13 the existing reactors might continue to operate after
14 their 40 years of original license.

15 At the present time, even though there are no
16 new applicants in sight, and many, many of the important
17 issues of the past have been addressed satisfactorily,
18 there are still factors which I'll summarize shortly,
19 whose importance and impact on the scope of the
20 Commission's research program and the role it should
21 continue to play in the agency's mission need to be
22 addressed very carefully.

23 Most of the new issues in front of the
24 Commission, the technical issues, of course, as I've said
25 already, relate to the aging of nuclear power plants.

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1 Another important issue is the budgets are declining.
2 Back in the 70's when the Commission was pursuing its work
3 in understanding the issues related to loss of cooling
4 accidents, they were spending something like \$250 million.
5 At the present time the resource budget is about \$50
6 million, but that includes rule making, resolutional
7 generic issues, so the clean budget that is really
8 dedicated to research is more or less somewhere around 40,
9 \$45 million.

10 So you can see that in terms of a declining
11 research budget, you have a factor of eight, less funding
12 dedicated to research now than in the 70's. Of course,
13 that does not include inflation.

14 The industry used to do quite a bit of
15 research. They are still doing some, but not as much as
16 before. They also have difficulties with budgets, like we
17 do. Of course, some of the work that they do is focused
18 mostly on commercial considerations. There are some areas
19 where we and they are cooperating, which involve safety
20 related issues.

21 The other factor which is important is in the
22 past we have been able to get quite a bit of information
23 from outside the United States, through international
24 agreements, cooperative agreements, but that assumed that
25 we had a vigorous research program ourselves. So the idea

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1 was quid pro quo, the exchange of information. But
2 because of our declining budgets and therefore, our
3 declining research activities, then it will be more
4 difficult in the future to focus on leveraging. So this
5 quid pro quo will have to thought out very carefully and
6 focus at least on some specific areas that will be of most
7 interest to us.

8 So when we take all these things into
9 consideration then you can see why this DSI issue, which
10 is what should be the future and scope of NRC's research
11 program. So let me say a few more things about some of
12 the factors now, and I guess I have enumerated some of
13 them already.

14 The first one, the nuclear industry, the aging
15 of plants and the introduction of new technologies is an
16 important consideration in pursuing additional research.
17 The introduction of new technologies, I'm referring to
18 instrumentation and control systems that use digital
19 approaches; The potential for annealing the reactor
20 vessels to recover their initial properties. So all these
21 things will raise new issues.

22 Also there is the issue of going to higher
23 burn ups that could necessitate taking a good look at the
24 properties of clotting as a result of this additional
25 irradiation to insure that the failure criteria that were

1 developed a long time ago are still valid and if not, then
2 how we should go about changing them. This is fuel
3 failure criteria as a result of transients and accidents.

4 The Department of Energy, including the
5 national laboratories, the reason that it is listed as an
6 external factor is because of the budget reduction. We at
7 NRC have depended substantially in the past on the
8 capabilities of the existing national laboratories. Of
9 course, I'm referring to technical capabilities, including
10 facilities. And because of the budget reductions, those
11 expertise will be limited in the future. The other thing
12 that concerns us is that with the declining support from
13 the Department of Energy, some facilities that were used
14 by both DOE and ourselves might not be available because
15 the overhead cost might be such that we would not be able
16 to bear the cost by ourselves alone.

17 Likewise the universities have been an
18 important source of expertise. Again, like the issue
19 above it, as R & D dollars go down, this expertise will
20 also no longer be available.

21 International programs, I said a few things
22 already. Considerable research is being conducted
23 internationally, and again, because of our own research,
24 we have been able to enter into agreements, in a quid pro
25 quo way and also be able to leverage our research

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1 substantially.

2 Congress and the public, will of course
3 continue to examine how NRC addresses all questions that
4 come up, both from operational experience, both in this
5 country as well as internationally.

6 The internal factors have to do mainly with
7 the declining resources. As the NRC budget is reduced,
8 its ability to timely respond to safety issues also is
9 affected. Also this has an effect on the availability of
10 experimental facilities and the ability to maintain
11 technical expertise. We are basically a technical agency
12 so it is important that in order to be technically
13 credible we must maintain a high level of technical
14 expertise in some key areas.

15 So with these factors in mind then we go into
16 the next slide, which describes the options that are
17 summarized here. You can see here that we have a wide
18 ranging number of options, including an option to
19 discontinue the research program itself.

20 This will necessitate a legislative law
21 because, as I said earlier, the research program itself
22 was established through Congressional actions with the
23 Energy Reorganization Act of 1974.

24 I want to talk about the next two options. To
25 conduct only confirmatory research or conduct only

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1 exploratory research. And it's appropriate to say a few
2 things about that. The program itself, the structure at
3 the present time, it's approximately 80 percent
4 confirmatory and 80 percent exploratory.

5 What I mean by confirmatory, it's a program
6 that is of a short duration and it is designed to satisfy
7 a stated regulatory need, from the user offices and from
8 the nuclear regulatory organization and from the materials
9 organization. So the program, it is designed to satisfy a
10 well defined need, which have been defined by those
11 offices and by delivering to those offices a product on a
12 pre-determined schedule. For example, in the review of
13 advanced reactors, that product was a good analytical tool
14 to analyze to performance of the AP-600.

15 The rest of the program which is about 20
16 percent, which we call exploratory. It's exploratory in
17 the sense that it tries to work in areas where there could
18 be potential problems of an anticipatory nature. So it's
19 longer range. It could be four years, five years. For
20 example, we have worked in the -- area with some of the
21 experiments in putting analytical tools together for four,
22 five years or even longer sometimes.

23 So one of the options then is to conduct only
24 confirmatory research. The other one is conduct only
25 exploratory research. The third option is to conduct both

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1 confirmatory and exploratory research. Basically this is
2 the approach we are following at the present time.

3 I should have said before, these options are
4 not mutually exclusive. In some cases they are
5 complimentary to each other.

6 The next option is to establish and maintain
7 core research capabilities. As I said earlier, NRC is a
8 technical agency and needs technical expertise to insure
9 that its product are robust enough and can stand the
10 scrutiny of the technical community, of the public, of the
11 audit committees that review our work. So in a number of
12 areas, the issues on our plate are kind of coming to an
13 end.

14 And the question is, should we stop doing
15 technical work or research in those areas, for example, in
16 the thermo-hydraulics area? We had a very big program in
17 the 70's and early 80's and when the issues to relating to
18 loss of cooling accidents were resolved, we kind of
19 reduced that program substantially. And then when the new
20 reactor designs came to NRC for our review, and because
21 there were many issues dealing with the thermo-hydraulic
22 technical problems, then we had to kind of rebuild this
23 area.

24 So the question arises, what are the core
25 research capabilities that the Commission has to maintain

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1 to insure that either the ongoing issues or related issues
2 arise, that technical expertise and capability exists in
3 place to address those issues. We won't have to go
4 hurrying around trying to rebuild because in some cases
5 it's not that easy.

6 So option five then calls for establishing and
7 maintaining core research capabilities by developing
8 criteria that one can use to see what are the right
9 disciplines that the Commission has to maintain and what
10 will be the scope under those disciplines.

11 The next option deals with university based
12 resources as a component of the overall NRC research.
13 Again, universities have been providing a good bit of
14 expertise and information to us. There's a program in
15 place at the present time where one percent of the
16 research budget goes for university grants. Of course,
17 that's not much, but it's still a substantial amount. So
18 universities, at least in the past, have not been very
19 expensive, even though that is beginning not to be the
20 case anymore. So the question is whether we should
21 continue this program. So the option that the committee
22 presented to the Commission was that it was an option to
23 use the university resources as a component of the overall
24 NRC research program.

25 The last option was to actively participate in

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1 international safety programs. They have been, for the
2 last ten years or even longer, with extensive agreements
3 and interactions with international organizations and
4 regulatory organizations, research institutes, we have
5 been getting a substantial amount of resources by
6 facilities.

7 We share in the information. We come together
8 and design experiments and run them in some of those
9 facilities internationally. So these exchanges have been
10 extremely cost effective and the question is are we going
11 to be able to continue, especially since in the past, as I
12 said earlier, we have been using this quid pro quo way,
13 where we give them the results of our research and we
14 share in theirs. So since our research programs are
15 coming down, then there's still a question of how much we
16 can be able to participate in the programs to the extent
17 we were doing it in the past.

18 So these were the options. And so the next
19 slide shows the Commission's preliminary views. The
20 Commission came down on option four, which includes
21 elements of both confirmatory and exploratory research,
22 balanced in such a way that both current as well as
23 potentially emerging issues are being addressed.

24 Also the Commission came strongly with the
25 idea of having the office of research in conjunction with

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1 the other offices developing a core research program which
2 will insure that there is technical expertise and
3 capability available to address both present and ongoing
4 issues. And the Commission wanted us to develop this
5 criteria and take those criteria back to them around
6 January and once those criteria are approved and then
7 we'll go and develop this core research capabilities.

8 The paper itself has examples of this criteria
9 that can be used to develop core research capabilities,
10 not only for broad program categories, but for the scope
11 of some of the program itself. So we will appreciate if
12 some of you stakeholders provide us your thoughts and your
13 wisdom, as what are the appropriate criteria that one
14 should use in developing and sustaining this core research
15 capabilities.

16 Also the Commission thinks that we should
17 continue to support the educational grant program, but
18 they want us to re-evaluate this program at least every
19 two years.

20 And finally, they support our participation in
21 international safety programs, but they want us to
22 privatize them and appropriately integrate them with our
23 own research efforts and also consider them in the
24 establishment and maintenance of core research
25 capabilities, which I discussed already.

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1 Finally, in the paper itself there are a
2 number of issues, questions the Commission wants us to
3 address. Of course, we would like the stakeholders to
4 provide any input that they can have in addressing those
5 questions. Those questions, they're disbursed under
6 Section B of the paper, Technical Expertise, and under
7 Section III, Discussion of the Direction-Setting Issue.
8 Some of these questions deal with potential duplication in
9 the offices themselves.

10 I guess this issue was raised by somebody this
11 morning. In retaining core expertise in some areas,
12 should we have that reside in one office or should each
13 office have its own expertise in some key areas. So these
14 are the types of questions that we will be addressing and
15 providing to the Commission. So any help or any input or
16 any wise words in this area would be extremely
17 appreciated. Thank you.

18 MR. BROOKMAN: Thank you very much. Nice
19 presentation. So we have not only a good discussion of
20 background and some of the major trends that have
21 occurred, but also the options relate to both the role and
22 the scope of the effort. And as you look at these options
23 here on the view graph, at the top, four relate to the
24 role and the last three relate to the scope.

25 Maybe we could start by talking about the

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1 role, noting once again that the Commission's preliminary
2 view is that it should continue to conduct both
3 confirmatory and exploratory research.

4 Comments, questions about the presentation and
5 about the Commission's preliminary view. I get to play
6 Donahue here I think. Questions, comments?

7 Themis, did you say that even though in light
8 of budget reductions across the board, throughout the
9 entire federal government and here at NRC, that option
10 four, to conduct both confirmatory and exploratory
11 research, that is essentially maintaining what you're
12 doing now?

13 MR. SPEIS: No, maintaining the role of the
14 program itself, to address both potentially emerging
15 issues and also to address issues that are in front of us,
16 to confirm licensee proposals.

17 MR. BROOKMAN: But you did say the scale is
18 down?

19 MR. SPEIS: But the scale is essentially down,
20 right.

21 MR. BROOKMAN: You said that 80 percent of
22 your budget goes to confirmatory research, that is,
23 applied research and 20 percent goes toward exploratory or
24 more basic research.

25 MR. SPEIS: This also came up at the last

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1 meeting in Colorado. The issues are the same except it's
2 longer range and it's more of an anticipatory nature, but
3 it's still applied research. It's not really basic
4 research. For example, what is the effect of something
5 like an element, phosphorous or nickel on the rate of
6 pressure vessels, and this is something you cannot do
7 overnight. So it's something that there are many, many
8 factors that you have to consider. You have to do
9 experiments. There are theoretical considerations. It's
10 kind of a longer range program. So something like that is
11 part of the so called exploratory research, and maybe in
12 retrospect that's not the right word. We'd have to change
13 the word itself.

14 MR. BROOKMAN: I'm wondering if anybody has
15 comments on the Commission's preliminary perspective, to
16 conduct both confirmatory and exploratory research and
17 also the distribution, the 80/20 here?

18 MR. SPEIS: Excuse me. The 80/20 is the
19 present, approximately. In fact, we have asked the
20 Commission to provide the flexibility to change that.

21 MR. BROOKMAN: Okay.

22 MR. SPEIS: So it's not something that the
23 Commission has set, but it's approximate.

24 MR. BROOKMAN: Do you have a comment?

25 MR. KAUSHAL: Narinder Kaushal from

1 Commonwealth Edison. If I could have the previous slide
2 back. The real issue is not whether it's confirmatory or
3 exploratory or 20/80, it's really what and what's being
4 done; does that really need to be done; are there other
5 ways of getting the same information to the same quality.
6 There's a considerable amount of work that's done by the
7 industry and universities and other places. The real
8 question you have to ask yourself is what is the value
9 added and what is the necessity of, quote, unquote,
10 "confirming" what's already been done or doing something
11 on your own, something that can be done somewhere else.
12 We're all, all around the country, struggling with trying
13 to get the most bang out of our buck. I'm sure that's
14 true of, just as you were pointing out, with declining
15 budgets. We all have to worry about that.

16 So while one cannot say one shouldn't do
17 confirmatory research or one shouldn't do exploratory
18 research, it all needs to be done. We just have to be
19 very sure of what it is that we're spending our money on.

20 MR. BROOKMAN: Can you comment further on the
21 what at this point? For example, in this discussion
22 paper, they list on page 22 a variety of criteria. Do you
23 think those criteria provide guidance to the what?

24 MR. KAUSHAL: In general the criteria are
25 reasonable but I think the real issue here is can we make

1 use of other sources as opposed to spending separate and
2 additional dollars of Commission research. That's really
3 the issue.

4 MR. BROOKMAN: Are you familiar with the
5 international programs and the collaboration that goes on
6 with others?

7 MR. KAUSHAL: Yes, I am. And I fully support
8 collaborative efforts internationally, and participation
9 and collaboration in international programs. I think
10 that's a good way to do it. Again, it's a question of how
11 much and what we get out of it.

12 MR. BROOKMAN: I'm wondering if you could
13 respond to Themis' point about the fact that the United
14 States' budget is declining in this area, and it affects
15 our ability to obtain as much research, kind of quid pro
16 quo, from the other countries, is that a trend that you
17 see as well?

18 MR. KAUSHAL: Again, it's really an issue of,
19 you know, clearly everybody would like to do more. Are we
20 getting basically what we are looking for and if we are
21 not, then we have to do more.

22 MR. SPEIS: I appreciate your comment. We're
23 constantly searching for what is the best way to spend our
24 money, and as you said earlier, what is the added value.
25 I already said that compared to the 70's, we're spending

1 something like 40, \$45 million which is a factor of eight,
2 not counting inflation. The primary responsibility for
3 safety of nuclear power plants is yours, and you also have
4 to have the research that is needed to substantiate or
5 provide the basis for any of your proposals or things that
6 you're dealing with.

7 But in addition to that, though, we have been
8 asked by Congress to have some independent capabilities to
9 make sure that on issues that are very crucial and very
10 important there is some additional information and to
11 insure that we can confirm what you people have put in
12 front of us.

13 We have looked very hard to see whether there
14 is duplication. Somebody raised that question even in
15 Washington, and the research done for the utilities by
16 EPRI, in some of the areas that industry is doing work
17 it's mostly addressing issues of steady state operation,
18 commercial type of considerations. For example, there is
19 a substantial program in the fuels area. But of that
20 program addresses issues dealing with steady state of
21 operation and they don't explore what if type of
22 questions, you know, what if there is a transient that
23 would lead to fuel failure, you know, do you still have
24 the same threshold of failure that you had when the
25 irradiation of the fuel was less than it is now. So it is

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1 very important that we understand those type of issues,
2 and we are constantly in search of doing our research
3 program better and also not duplicating with others.

4 But there are some key areas, for example, in
5 view of the AP-600, where there were totally new processes
6 and phenomenon, we performed some independent research to
7 make sure that when we certify that design for ten years,
8 there will be no questions or second guessing by anyone.

9 MR. BROOKMAN: Those are good specifics. I'm
10 wondering, though, if what you're speaking to and what
11 this gentleman just spoke to was the core research
12 capabilities. So I'm wondering if there are any other
13 additional core research capabilities that should be
14 served that aren't being served or if, going back to the
15 criteria listed on page 23 of this paper, whether you
16 think what's listed here is responsive to the need.

17 MR. SPEIS: The problem itself has issues that
18 address issues relating to thermo-hydraulics, severe
19 accidents, materials. Probably a substantial portion of
20 our research program goes into the materials area. And
21 that has provided information to put together the
22 annealing rule that the industry petitioned for and we
23 were able, based on information that we had developed over
24 the five to ten years, to put together this rule. We have
25 the problem of degrading steam generator tubes and the

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1 substantial part of the research has gone into that and is
2 still going into that area. So again, severe accidents,
3 thermo-hydraulics. PRA, we're working in developing
4 methods and evaluating the technologies so we have a
5 robust basis for making the transition in the risk
6 informed performance based regulation. So these are the
7 few areas that we're still putting our money into.

8 MR. BROOKMAN: We've been touching on both the
9 role and the scope as listed on the options page. I'm
10 wondering if there are any additional comments on either
11 of those.

12 Yes, sir.

13 MR. SWANK: Dave Swank, Supply System. I do
14 agree with the Commission's recommendation as far as the
15 options. I think as this gentleman pointed out, the
16 question sometimes is scope. Now, you talked about the
17 international activities and our ability to continue to
18 participate as our research goes down. Are you seeing the
19 same things internationally, as far as research reduction?

20 MR. SPEIS: Yes, it's beginning to come down
21 internationally. In fact, that pushes them and us into
22 much closer cooperation, looking for the most risk
23 important programs, because you know, I guess a while
24 back, both in this country and overseas, people were
25 exploring things that maybe sometimes were not the most

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1 important issues from a risk perspective. Now they're
2 beginning to face the same music basically as we are.

3 MR. SWANK: So we seem to be in line.

4 MR. SPEIS: Not as much as we, but they are
5 beginning to feel it.

6 MR. SWANK: We're all feeling the pain a
7 little bit anyway. How about the question as far as
8 percentage of budget, let's say, of the Japanese, the
9 Germans, the western Europeans? We seem to be in about
10 the ten percent range for research. Do you think that's
11 consistent with some of our foreign counterparts?

12 MR. SPEIS: I know that the French and the
13 Germans and the Japanese are spending substantially more,
14 but in some areas they are repeating some of the things we
15 did because they want to develop their own infrastructure,
16 their own capability.

17 For example, we're spending only a few hundred
18 thousand dollars on something called the source term, you
19 know, what is the amount and the chemistry of the
20 radioactivity that is released when you have an accident.
21 The French are spending 70 to \$80 million. They have a
22 huge facility. We feel that we have done that work, but
23 they want to do it themselves. We are participating in
24 that program to make sure that there will be no surprises
25 to the tune of 150 or \$250,000 or so.

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1 MR. SWANK: I guess I will say that I think
2 the direction that you're taking for the most part is
3 correct; that is, an aging related research. Certainly
4 from the industry's point of view, that's where we see the
5 greatest risk. That's where our greatest concerns are,
6 certainly in the BWR world, with the internals problem,
7 with the vessel concerns and the PWR world and the BWR
8 world and so on. So it seems to me, at least from our
9 perspective, that your focus seems to be in the right
10 direction. The only concern I would say that we see is
11 the potential that there may be some redundancy in the
12 work that you're doing and the work that you're doing,
13 recognizing that you have to maintain your independence,
14 and certainly I appreciate the fact that you have to
15 maintain your technical competence, to be able to review
16 the work that we do.

17 There's nothing more frustrating from the
18 industry's point of view than to get into a discussion --
19 and I'm sure from your point of view, too -- you get into
20 a discussion with us, where your technical expertise or
21 our technical expertise, as the case may be on a given
22 issue at a given point in time, is substantially higher
23 than the other side's, so we both need to continue working
24 on that, and we support that.

25 Thank you.

1 MR. BROOKMAN: That's a helpful comment, and
2 thank you for that endorsement for the thrust of the
3 research. But let me ask you before you hand off that
4 mike, if you, from your perspective, see gaps, see
5 additional needs that, even in a budget reduced world,
6 that the NRC should be trying to focus on.

7 MR. SWANK: I guess off the top, I can't think
8 of anything where I see us lacking. I recognize some of
9 the work that's going on in what I'll call the EQ related
10 areas, particularly with cables and that kind of thing. I
11 know you are devoting monies and research efforts in that
12 area. That's not an area where you see that in the
13 reactor world. As far as day to day operation, we don't
14 see cable degradation, particularly when you get to the
15 Tripoli 323 cable. You don't go out into your plant and
16 see degradation. It's just not there, so the only way
17 you're going to see it is through research.

18 But we look at what's going on in the license
19 renewal area, and quite honestly there's a lot of money
20 and a lot of activity, but as you pointed out in one of
21 the papers, nobody's come in for license renewal and there
22 are some plants I think that are certainly seriously
23 considering, Baltimore Gas & Electric, for instance, but I
24 think for most of us, the younger plants and even now a
25 lot of the older plants, some of the original pilot plants

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1 like Monticello are not actively participating in the
2 programs at this point in time. We have to be careful how
3 much money we're going to spend on what is turning into a
4 smaller and smaller portion of the industry as far as
5 renewal.

6 MR. BROOKMAN: Thank you for those comments.

7 MR. SPEIS: We appreciate your comments. I
8 would like to add also that many times our research is to
9 see whether there is a real problem, for example, in the
10 cable area that you mentioned. There were some
11 indications from operational occurrences and from our
12 early preliminary programs that there could be an issue
13 there, so we're exploring to see is there really an issue
14 before we decide how to address this issue. If, in some
15 cases, we see there is a real issue, quite often we ask
16 the industry to solve the problem because it's their
17 responsibility. So some of our work is to understand and
18 to define the issues and parameters of importance, not
19 necessarily solve the problem itself.

20 MR. CRAIG: This is John Craig. I'd like to
21 make a comment about the international activities. In the
22 past we've been able to be the beneficiaries of
23 significant leveraging, where for a small amount of U.S.
24 money foreign countries would donate much more money to a
25 given project. As their budgets have begun to shrink it's

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1 become increasingly difficult for us to get the kinds of
2 advantages from a leveraging perspective that we've gotten
3 in the past. So that's decreasing also.

4 MR. BROOKMAN: Thank you, John. I'm
5 interested to know if the criteria that are listed on page
6 23, which I will read in just a moment, whether you think
7 that that's good guidance for the Nuclear Regulatory
8 Commission, as they try to maintain their core research
9 capabilities. As listed in the issue paper today it says,
10 examples of the criteria that could be used to establish
11 the essential core capabilities are as follows. One, is
12 the technical area one of high risk and large uncertainty;
13 does it involve emerging issues of new technology; is the
14 expertise or facility unique, that is, if the NRC does not
15 maintain the expertise or facility, is it available in
16 other industries, private organizations or universities;
17 if not unique, can the NRC gain access to the outside
18 expertise or facility in a timely manner; can the NRC gain
19 access to independent expertise; and number five, how
20 frequently would the expertise or facility be used.

21 Oh, excuse me. There are more. There are
22 nine. Six is what is the impact of NRC's mission
23 capability if the specific expertise or facility
24 associated with it is not available. Seven, would the
25 cost of outside expertise or facilities be prohibitive;

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1 e.g., the high cost to build or rebuild experimental
2 facilities. Eight, would the cost of maintaining the
3 expertise or facility be prohibitive. Nine, how important
4 is it to maintain the specific expertise or facility to
5 sustain important cooperative efforts or leadership in
6 international safety research.

7 Themis, you rolled all of these into your
8 comments. What about those criteria, do you think they're
9 good guidance? Do you think there are others that should
10 be included? It's a pretty good listing number-wise. Is
11 the content there that you need?

12 MR. SPEIS: May people can go back and read
13 them more carefully and provide some comments.

14 MR. BROOKMAN: Okay. That's a good idea. We
15 welcome those comments.

16 Do we have additional comments? We've talked
17 about the role, and the only comments that we've heard so
18 far seem to confirm the Commission's preliminary view on
19 its role. And also I think it confirmed the scope as
20 advanced in the preliminary way by the Commission.

21 Any additional comments on the paper, the
22 content of the paper? I don't see any.

23 Themis, thank you for your presentation.

24 MR. SPEIS: Thank you.

25 (Session concluded at 2:05 p.m.)

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