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546th Meeting

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

October 5, 2007

The contents of this transcript of the proceeding of the United States Nuclear Regulatory Commission Advisory Committee on Reactor Safeguards, taken on October 5, 2007, as reported herein, is a record of the discussions recorded at the meeting held on the above date.

This transcript has not been reviewed, corrected and edited and it may contain inaccuracies.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

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546th MEETING

+ + + + +

FRIDAY,

OCTOBER 5, 2007

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The meeting was convened in Room T-2B3,
11545 Rockville Pike, Rockville, MD, at 8:30 a.m.,
William J. Shack, Chair, presiding.

ACRS MEMBERS PRESENT:

WILLIAM J. SHACK	Chair
MARIO V. BONACA	Vice Chair
SAID I. ABDEL-KHALIK	Member-At-Large
GEORGE E. APOSTOLAKIS	Member
MICHAEL CORRADINI	Member
OTTO MAYNARD	Member
DENNIS C. BLEY	Member
DANA A. POWERS	Member
J. SAM ARMIJO	Member
JOHN W. STETKAR	Member
JOHN D. SIEBER	Member

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1 PRESENTERS:

2 ALEX MARION Nuclear Energy Institute

3 ANTHONY PIETRANGELO Nuclear Energy Institute

4 JOHN GAERTNER Electric Power Research
5 Institute

6 CLAIR GODDARD Institute of Nuclear Power
7 Operations

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

8:35 a.m.

CHAIRMAN SHACK: The meeting will now come to order. This is the second day of the 546th Meeting of the Advisory Committee on Reactor Safeguards. During today's meeting, the Committee will consider the following: a meeting with NEI, EPRI and INPO to discuss industry activities; future ACRS activities and a report of the Planning and Procedure Subcommittee; reconciliation of ACRS comments and recommendations; our draft final report on the quality assessment of selected NRC research projects; and preparation of ACRS reports.

This meeting is being conducted in accordance with the provisions of the Federal Advisory Committee Act. Mr. Cayetano Santos is the Designated Federal Official for the initial portion of the meeting. We have received no written comments or requests for time to make oral statements from members of the public regarding today's session. A transcript of a portion of the meeting is being kept and it is requested that speakers use one of the microphones, identify themselves, speak with sufficient clarity and volume so they can be readily heard.

And our opening item is the meeting with

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1 NEI, EPRI and INPO and Otto is the lead for that.

2 MEMBER MAYNARD: Thank you, Mr. Chairman.
3 You know we have frequent meetings with the staff to
4 hear about various issues, initiatives, proposed
5 actions and typically our interaction with the
6 industry is towards the tail end of that and in
7 dealing with differences or with the specific
8 technical issues on some of that.

9 Today we have, I think, a unique
10 opportunity to hear from the industry not on specific
11 topics but in general overall what's the industry
12 doing, what's their priorities, how are they organized
13 and how do we work together. We have three of the
14 real key organizations that the industry uses to
15 identify, address and deal with a number of these
16 issues with NEI, INPO and with EPRI.

17 This is not a technical presentation. The
18 idea is not to go into any specific item in detail as
19 to exactly a given position on it. It's more to give
20 us an understanding and a chance to interact with them
21 maybe on how things are selected or what are the
22 priorities and what are the issues that's important to
23 the industry there. So with that, I'd like to go
24 ahead and turn it over to Alex Marion to introduce
25 this mornings group.

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1 MR. MARION: Thank you and good morning.
2 My name is Alex Marion. I'm the Executive Director of
3 Operations and Engineering at NEI and we're really
4 pleased to have this opportunity to provide you an
5 overview of how the three industry organizations
6 basically function, what we do, why we do it and how
7 do we do it and we're hoping that we can convey that
8 effectively in the presentations this morning.

9 We'll begin with Tony Pietrangelo who is
10 the Vice President of Regulatory Affairs at NEI and
11 he'll be followed by John Gaertner who is the Senior
12 Business Operations Manager at EPRI, the Electric
13 Power Research Institute and then finally we'll finish
14 with Mr. Clair Goddard who is Vice President of
15 Systems at INPO. Okay, Tony.

16 MR. PIETRANGELO: Good morning. It's a
17 pleasure to be back before the Committee. It's been
18 awhile but it's always a pleasure. Why don't we go
19 right to the next slide here, Alex?

20 I'm going to go over a bunch of topics.
21 There's a slew of slides that we sent you. I may not
22 spend a lot of time on a lot of slides and try to
23 focus on a few key ones to give you a flavor of what
24 NEI does and what we're about. So that's the topics
25 we're going to cover on this slide and I'll go on.

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1 We have a large membership, all U.S.
2 nuclear facilities, many international nuclear
3 utilities as well. I was in Spain last week at the
4 Spanish Nuclear Society and there are four utilities
5 that own either all or a part all the nuclear units in
6 Spain and all four are members of NEI and one of the
7 reasons I went over was to discuss a liaison with the
8 Spanish organization.

9 Their regulatory system follows very much
10 the U.S. Nuclear Regulatory Commission system. So
11 there's a lot we share in common. They just
12 implemented the reactor oversight process in Spain
13 this past year. There is a lot of opportunities to
14 share information and we're interested in getting
15 their operating experience as well as they getting
16 ours. It's just an example of dealing with our
17 international members. We do have a lot of
18 activities.

19 Obviously, we have all the major NSSS and
20 component vendors, AEs, many universities, labor
21 unions. Now that's kind of a new addition to NEI and
22 it's been one that's I think going to prove very
23 fruitful in the future as we move towards new plants
24 and also law firms. So we have a pretty diverse
25 membership.

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1 Organization, we have a board of directors
2 that includes 44 members, again all the utilities, all
3 the major vendors and AEs. But it's really our
4 executive committee that directs policy at NEI.
5 That's about 15 to 18 CEO level people who our
6 President Skip Bowman reports to.

7 We have about a half dozen major sections
8 at NEI. We have a Communications/Public Relations
9 section. That used to be what was the U.S. Council of
10 Energy Awareness way back when. Our Member Relations
11 and Corporate Services. Government Affairs, that used
12 to be the American Nuclear Energy Council. Our Legal
13 section. NucGen where I work for Marv used to be
14 NUMARC at one time and then our Policy Development
15 section.

16 So really NEI brought together several
17 different industry organizations in Washington into
18 one organization because I think there was a
19 realization that all the issues we deal with have a
20 technical, legal, public perspective component to
21 them. Obviously, different issues have different
22 percentages of those components, but it was, I think,
23 the wisdom at the time that it really took all three
24 of the components to resolve an issue. You couldn't
25 resolve an issue just technically or just politically

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1 or just legally. You really needed to have a combined
2 approach. We think it's worked pretty well over the
3 years.

4 The way we do business is we have a lot of
5 committees, task forces and working groups. Besides
6 the Executive Committee, we have three standing
7 advisory committees. We have a Communications
8 Advisory Committee that gives us policy and direction
9 to that division within NEI, a Government Affairs
10 Advisory Committee that obviously does the same for GA
11 section and then in my division we have the Nuclear
12 Strategic Issues Advisory Committee. That's comprised
13 of all the chief nuclear officers and a steering
14 committee as well as the vendors and AEs and the full
15 group.

16 Our working groups are typically chaired
17 by an chief nuclear officer who sits on the NSIAC,
18 being we want that CNO to be able to discuss with his
19 peers the issues that that particular working group is
20 dealing with. We have examples of all of this later.
21 The working groups generally stay together for two to
22 five or ad infinitum years.

23 It depends on the issue. Some issues
24 we're able to resolve quite quickly. Others are kind
25 of long standing issues that sometimes defy

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1 resolution. I think we've had our working group on
2 spend fuel for quite awhile as well as one on fire
3 protection for quite awhile. So some issues are just
4 a little bit harder to close than others.

5 Our issue task forces are really technical
6 groups. That's chaired by an NEI staff person. I
7 think you see a lot of them before you who are working
8 on a specific technical issue and we pull together
9 subject matter experts from our member companies to
10 help us deal with a particular issue. Usually those
11 groups last anywhere from six months to a couple of
12 years and again they give us advice and make some
13 recommendations.

14 MEMBER APOSTOLAKIS: These -- Are members
15 of these groups paid?

16 MR. PIETRANGELO: No. We've leveraged the
17 resources of our members.

18 MEMBER CORRADINI: In terms of the task
19 forces though, do you have members on it although led
20 by the NEI staffer?

21 MR. PIETRANGELO: NEI chairs the task
22 force.

23 MEMBER CORRADINI: But they're utility and
24 member contributors.

25 MR. PIETRANGELO: Absolutely yes.

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1 (Off the record comments.)

2 MR. MARION: If I might add. This is Alex
3 Marion. We provided the Committee a copy of the NEI
4 Resource Directory and in that document you have a
5 listing of all the working groups and all the task
6 forces and I do want to add that at any given time we
7 have anywhere from 3,000 to 4,000 industry folks
8 involved in these advisory committees that range from
9 senior engineers with a technical specialty all the
10 way to chief executive officers.

11 MR. PIETRANGELO: Okay. Next slide.

12 This is our NSIAC, the advisory committee
13 that we get a lot of direction from. It's currently
14 chaired by Brew Barron, CNO at Duke. The full
15 committee again has a pretty broad membership, but the
16 steering committee is all the operating utilities'
17 chief nuclear officers. They really give us our
18 direction on specific issues.

19 The other thing mentioned on this slide is
20 our formal initiatives. This is a holdover from the
21 old NUMARC days. An initiative is an industry action
22 that we ask the NSIAC to vote on where if you get 80
23 percent of the group agreeing to proceed with that
24 action, then it becomes binding on all the other
25 members.

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1 So on the next slide, you'll see an
2 example of different initiatives we've taken over the
3 years, the latest one being heavy load lift. That was
4 passed two weeks ago to deal with a concern about
5 consistency in the licensing basis of how heavy loads
6 are being dealt with at our plants. So it's a
7 recognition that there's some resources necessary to
8 address a particular issue and the way to get the
9 fastest resolution of that is to get the chief nuclear
10 officers to vote and each commit to each other to
11 apply those resources to a given issue to carry out
12 the actions in the initiative. So it's been a very
13 effective tool for us. We kind of regard industry
14 initiatives as our silver bullet for resolving issues.
15 Next slide.

16 MEMBER CORRADINI: The management of
17 materials issue, if I might ask.

18 MR. PIETRANGELO: Yes.

19 MEMBER CORRADINI: That has started a few
20 years ago or has that been ongoing for longer than
21 that?

22 MR. MARION: It started in 2000.
23 Actually, the work -- This is Alex Marion. We started
24 working on that 2002 and I think the initiative was
25 passed in 2003 and it will be in effect through 2010,

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1 2011 because of the inspection requirements that have
2 been identified and they're being implemented.

3 MEMBER CORRADINI: So I guess the way you
4 answered it led me to another question which is when
5 you get this 80 percent vote on an initiative is there
6 is a life to the initiative or is it very particular
7 to the particular question at hand so that the
8 materials might have or is an on-going reaffirming
9 that the initiative should continue?

10 MR. MARION: Some of the -- We've had
11 about what 25 or 30 initiatives over the years and
12 some of them are programmatic, to establish a program
13 or keep that program in place for the life of the
14 plant.

15 MEMBER CORRADINI: Okay.

16 MR. MARION: Other are more action
17 oriented like the materials initiative where we have
18 this extensive inspection program. That has a finite
19 life going in the 2011 as I mentioned earlier and
20 others.

21 MEMBER CORRADINI: Yes.

22 MR. MARION: Where we've undertaken vary
23 as well.

24 MEMBER ARMIJO: Could you expand a little
25 bit on the fuel reliability initiative, what kind of

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1 programs are you --

2 MR. MARION: Fuel reliability initiative,
3 I'll let Clair speak to that. It was something that
4 was an issue by INPO last year.

5 MEMBER ARMIJO: I can wait.

6 MR. MARION: That's fine.

7 MEMBER ARMIJO: Okay.

8 MR. PIETRANGELO: Usually there's a date
9 certain by which some actions have to be completed.
10 Just as an example, we did an initiative on shutdown
11 risk in 1991. That's been institutionalized in the
12 outage management programs at the member companies
13 with the understanding that the action played out in
14 the initiative would become part and parcel of the
15 procedures and the work instructions going forward.

16 MEMBER ARMIJO: Thank you.

17 MR. PIETRANGELO: Next slide. We're
18 there. This is just kind of a smorgasbord to give you
19 an example of the issues that our NSIAC looks at when
20 they come in for a day for our meetings. I mean this
21 is just about every issue we're working on and
22 typically we have some that require some action from
23 the CNOs and others are just a status update on what
24 we're doing on a particular issue. And again we use
25 if there's a working group associated with the issue,

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1 we have the working group chairman, one of the CNOs,
2 do the presentation before the NSIAC. So it's really
3 a peer-to-peer communication.

4 MEMBER APOSTOLAKIS: Tony.

5 MR. PIETRANGELO: Yes.

6 MEMBER APOSTOLAKIS: What is the
7 impression that the industry has now about risk-
8 informed regulation? I mean, do you think that things
9 are progressing well, they're kind of slow, we're
10 going too fast, should be doing more? What is --

11 MR. PIETRANGELO: It's mixed. There have
12 been some major activities completed this year in tech
13 spec world with flexible completion times and flexible
14 surveillance test intervals. On the other hand, we
15 saw major slowdown in the 50.46 rulemaking which this
16 committee weighed in on and in part led to that.
17 We're still behind it. We think it's the right thing
18 to do over the long term. So we've haven't thrown the
19 towel in on 50.46 and the Commission vote. We were
20 pleased that they didn't kill the issue. So we're
21 going to continue to work on it.

22 But I think in terms of risk informed
23 regulation across the industry we're saturated right
24 now in terms of the resources we're applying to meet
25 the ASME Level 1 PRA standard, to develop fire PRAs,

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1 to put together peer reviews for those fire for those
2 fire PRAs and there's also a pretty large component to
3 maintain the existing models to do things like the
4 significance determination process and the ROP.

5 But you have resources just on day-to-day
6 activities and then you have these kind of longer term
7 met-the-standard, develop-a fire-PRA, etc. to take
8 additional resources. So we're pretty saturated, but
9 we've always seen it as a balance between improving
10 the tool while at the same time performing
11 applications that tools can at the current time
12 support. So we hope to see a lot of people pick up
13 the tech spec initiatives and some of the others as
14 well.

15 CHAIRMAN SHACK: How about 50.69?

16 MR. PIETRANGELO: Yes, that's been a tough
17 one. That's been a tough one. We've been seeking a
18 pilot. I think we're pretty close now to having
19 someone come in that has a PRA that meets the Level 1
20 standard and has completed their peer review and
21 assessment and are ready to go. So, yeah, I think
22 you'll see some activity on 50.69 in the next year or
23 two. We haven't given up on that one either.

24 MEMBER APOSTOLAKIS: Does the industry
25 have a position or a review regarding the technology

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1 neutral, risk-informed, performance-based regulatory
2 framework?

3 MR. PIETRANGELO: We do. We submitted a
4 paper to the staff in 2002.

5 MEMBER APOSTOLAKIS: And?

6 MEMBER CORRADINI: Could you summarize
7 that?

8 MEMBER APOSTOLAKIS: What is going on now?
9 I mean, are you --

10 MR. PIETRANGELO: Now it's in research's
11 camp. We sent it in as kind of starting point for
12 discussion on how would you do this risk-informed,
13 performance-based technology neutral and we went
14 through Part 50 and tried to lift out what we thought
15 would be risk-informed, performance-based rules that
16 aren't very prescriptive.

17 I mean, this is a pretty short document
18 with the idea being to try to define the safety
19 envelope that the Commission would be comfortable with
20 and then have the individual designs through reg
21 guides try to show how they fit within that envelope.
22 So by technology neutral, it's really defining the
23 safety envelope that everybody needs to fit into and
24 then let the individual designs demonstrate how they
25 meet those.

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1 MEMBER APOSTOLAKIS: That particular
2 activity is not really one of the highest priority
3 items for the Commission. The industry agrees with
4 that?

5 MR. PIETRANGELO: Yes. It's a longer term
6 activity.

7 MEMBER APOSTOLAKIS: But on the other
8 hand, it is promoted as something that would help the
9 international community to have a multi-nation --

10 MEMBER CORRADINI: Multinational.

11 MEMBER APOSTOLAKIS: Multinational
12 regulatory process. So the question is -- Well, that
13 to me sounds a little bit contradictory, I mean, if we
14 are telling the international people "Here is a
15 starting point for developing this agreement" but at
16 the same time in our own shop that's kind of a low
17 priority.

18 The question, I have to have a question.
19 Right?

20 MEMBER CORRADINI: Yes.

21 MEMBER APOSTOLAKIS: The question is --
22 (Laughter.)

23 CHAIRMAN SHACK: That would be a good
24 start. Keep going.

25 MEMBER APOSTOLAKIS: The question is,

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1 Tony, first of all, is NEI favorable towards this
2 multinational thing and do you think that this
3 technology neutral framework should be developed at a
4 faster pace? They are two separate questions.

5 MR. PIETRANGELO: Yes. Let me take the
6 latter question first. I mean, we put one on to start
7 the discussion. So we think -- It's a long -- Rather
8 than a low priority I'd say it's a longer term
9 priority.

10 MEMBER APOSTOLAKIS: Yes.

11 MR. PIETRANGELO: We have a lot of other
12 things we have to get done here.

13 MEMBER APOSTOLAKIS: That's the problem.

14 MR. PIETRANGELO: Yes. It's longer term.
15 In terms of -- But we're supportive of it.

16 The previous question on the multinational
17 I think you're referring to the MDEP.

18 MEMBER APOSTOLAKIS: Yes.

19 MR. PIETRANGELO: The Multinational Design
20 Evaluation Program. I think that has pros and cons.
21 I think clearly the vendors would like to see that
22 come about because it would make their job a lot
23 easier to get design certification once versus having
24 to get it in 14 different countries. So that makes
25 sense from that standpoint.

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1 I'll be perfectly honest with you. I'm a
2 little worried about when you get 14 different nations
3 in the room with different regulatory schemes that the
4 only way to get consensus is you take the most
5 conservative piece of every country's regulatory
6 system and that becomes one and I'm not sure anybody
7 can meet that. So there are pros and there are cons
8 to it, I think.

9 But I think it's worthy pursuing. I know
10 that the chairman has talked about it a lot. So we
11 want to interact in that and make sure --

12 MEMBER APOSTOLAKIS: But you are not
13 involved now.

14 MR. PIETRANGELO: We are not involved in
15 that.

16 MEMBER APOSTOLAKIS: You're not involved.

17 MR. PIETRANGELO: Yes. Okay. Let's go to
18 our mission. I'm not going to spend a lot of time on
19 this. I mean, we're the advocate for the industry in
20 Washington. We're the policy organization. We're
21 obviously pretty pro-nuclear.

22 (Laughter.)

23 MEMBER APOSTOLAKIS: Shock.

24 MEMBER POWERS: A lot of lobbying.

25 MR. PIETRANGELO: We have a registered

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1 lobbyist at NEI. None of the people in our division
2 are lobbyists. The lobbyists reside in our Government
3 Affairs division.

4 What we do I think a little different than
5 some other trade associations is we have a pretty good
6 technical component within NEI and supported by the
7 rest of the industry and you see it all the time. We
8 try to develop guidance documents to implement rules
9 or to resolve issues that make it easier for our
10 members with the kind of principle being if we can get
11 a consensus industry way to implement something versus
12 104 units to try to figure out the way to implement it
13 there's a huge efficiency in that and I think it's
14 been proven over the years and we can generally take
15 action pretty quick on any given particular issue
16 through groups like the NSIAC that can make it happen
17 at their plant. So it's been very effective. Yes
18 sir.

19 MEMBER BLEY: Are all U.S. nuclear
20 utilities participants in NEI?

21 MR. PIETRANGELO: Yes.

22 MEMBER BLEY: Every one?

23 MR. PIETRANGELO: Every one. Let's go to
24 slide --

25 MEMBER BLEY: Is EDF a participant?

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1 MR. PIETRANGELO: I think EDF is a member
2 of NEI, yes.

3 MEMBER MAYNARD: There's a time limit on
4 some of these actions and stuff. I remember a new
5 immediate issue may come up and it may be done by
6 telecom. You get all the chief nuclear officers or
7 all the CEOs depending on what the item is and what
8 the issue is. So it doesn't have to be having a
9 meeting scheduled and coordinating a meeting. A lot
10 of times the immediate items can be handled right over
11 the telephone.

12 MR. PIETRANGELO: Yes. That's how the
13 heavy loads initiative was done pretty much.

14 I want to spend a little bit of time on
15 this slide. This is our 2007 business plan. It looks
16 much like our 2006 business plan and also looks a lot
17 like our 2008 business plan. It's not because things
18 never change, but I think the way we like to term it
19 is that we finally found a way to present what we do
20 and our members have really liked this cartoon here
21 because it really shows what we're about and there are
22 two principal core activities that all of our
23 activities revolve around and that's really enhancing
24 the business environment for safe and reliable
25 operation of our existing plants and more recently

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1 creating the business environment for new plant
2 deployment. So all of our essential activities which
3 are kind of foundation of what we do, they're not
4 mutually exclusive. They really all support either
5 one of these boxes and that's why we haven't had a big
6 debate within NEI about which companies are only do
7 new plants and which aren't interested because there
8 are things we're doing on new plants that actually
9 support existing plants as well from a supply chain
10 standpoint, from a workforce standpoint, political
11 support. There are all sorts of activities that
12 really go into both boxes.

13 The essential activities, most of the
14 nuclear generation activities resides under enhancing
15 the regulatory environment. We have had an essential
16 activity on use field for quite some time. A national
17 energy policy sustaining the infrastructure, again
18 this is a good example of how this essential activity
19 really goes to both existing plants and new plants.
20 Our communications and public relations people have a
21 branding program targeted to outreach and the most
22 recent essential activity is enhancing community
23 relations and incident response. This really grew out
24 of the tritium initiative that the industry took where
25 you have something that happens at a plant that gets

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1 a lot of publicity. There was a need to tackle the
2 issue directly and the NSIAD did that, but there was
3 a larger need to make sure that we're getting out in
4 the community surrounding the plants and interacting
5 with the people and you're not just coming when it's
6 bad news. You actually have a relationship already
7 established and a trust and credibility established
8 and really a lot of this we found we already had the
9 relationships established through our emergency
10 planning activities with the local communities. So
11 it's really trying to build on that base and make sure
12 that when something happens at a plant that you're not
13 talking to someone for the first time in the community
14 trying to explain what happens.

15 MEMBER APOSTOLAKIS: Are these activities
16 also offices within the NEI? I mean, are they --

17 MR. PIETRANGELO: No, they're not. The
18 offices that were on the previous slide. Yes, so it's
19 matrix across a section.

20 MEMBER ARMIJO: Just before you leave this
21 on the nuclear infrastructure.

22 MR. PIETRANGELO: Yes.

23 MEMBER ARMIJO: In the physical
24 infrastructure what I'm looking for is do you have a
25 position on the nation's R&D infrastructure,

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1 particularly lack of material test reactors, fuel
2 testing, hot cells.

3 MR. PIETRANGELO: I'm going to let John
4 address that one when he comes in.

5 MEMBER ARMIJO: I just was at the Light
6 Water Reactor Fuel Conference in San Francisco and saw
7 the facilities available to the Koreans, the
8 facilities available to the Japanese and the French.
9 The French are building a new test reactor and,
10 compared to that, the U.S. is in a sad state and I was
11 wondering if NEI has any initiatives going on or is
12 thinking about that R&D infrastructure to support a
13 regrowth of this industry.

14 (Off the record discussion.)

15 MR. MARION: I can speak to that. This is
16 Alex Marion. EPRI has been reviewing the capabilities
17 that we have within the U.S. to support our research
18 needs. There has been a lot of discussions with the
19 National Labs looking at their capabilities, etc. But
20 I'm not aware that a formal recommendation has been
21 made. I know that something is actively being
22 evaluated.

23 MEMBER ARMIJO: But if it did because what
24 I'm talking about is something that is a national
25 commitment. It's not just one company builds

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1 something. If they did, would the initiative flow
2 through NEI to work the Department of Energy or the
3 Federal Government to support a laboratory expansion
4 or a facility?

5 MR. MARION: Yes, it would.

6 MR. GAERTNER: Yes, I think the integrated
7 industry effort we would rely on NEI. Of course, at
8 EPRI, we would work to carry out the industry end of
9 that deal.

10 MEMBER ARMIJO: We encourage you to really
11 look at that because I think at this state, we're in
12 bad state here.

13 MR. PIETRANGELO: And then at the bottom
14 of this chart is our mission critical functions and
15 this is kind of the thing we do on a daily basis that
16 really helps us achieve our goals and our essential
17 activities and I won't read them to you but I'll tell
18 you that they're all extremely important and we were
19 talking about this internally for next year given that
20 it's an election year in 2009. We'll have a new
21 administration. We have new commissioners, new senior
22 management at the NRC probably in the next couple of
23 years. Just the relationship development piece of
24 that is a pretty big challenge when you have an
25 administration change-over.

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1 So you would probably see in our internal
2 plan activities to try to establish better
3 relationships with the new administration. It
4 wouldn't be aimed at particular issues per se, but
5 without that, you can't achieve any of what you want
6 to do in your essential activities. So that's kind of
7 on-going mission critical function for us.

8 MEMBER SIEBER: If you want to preserve
9 any of the subsets that you're working on now plus the
10 industry including the vendors. You have to make sure
11 that the National Energy Policy isn't destroyed.

12 MR. PIETRANGELO: Absolutely, and behind
13 that, I mean we recognize that we have to have
14 bipartisan support for nuclear energy on the Hill.
15 Our things take so long to get done that you can't
16 rely on one party or the other to get it done. You
17 really have to have support on both sides of the
18 aisle. So that's just -- We've done a lot better at
19 that in the recent past.

20 MEMBER SIEBER: Right now, that's an
21 uphill battle in my opinion.

22 MR. PIETRANGELO: This next slide just
23 lists a couple of the executive task forces we've
24 formed. I'm not going to go into any great detail on
25 these, but in some cases, the executive task force can

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1 really bring the horse power to an issue to try to get
2 some actions done quickly. Let's go to the next
3 slide.

4 MEMBER APOSTOLAKIS: Wait.

5 MR. PIETRANGELO: Okay.

6 MEMBER APOSTOLAKIS: What are the major
7 improvements, the two top major improvements, to a
8 regulatory process that you think should be pursued?

9 MR. PIETRANGELO: The two top ones?

10 MEMBER APOSTOLAKIS: Well, I'm sure there
11 aren't very many.

12 MR. PIETRANGELO: Let's go to slide after
13 that. We're getting to that.

14 (Off the record comments.)

15 MEMBER APOSTOLAKIS: You are? Okay. I
16 asked for two and you gave me four. That's good.

17 MR. PIETRANGELO: Alex just told me that
18 we've developed a white paper called "The Nuclear
19 Regulatory Process" and we passed in volume at the
20 Regulatory Information Conference and we've been
21 giving copies to anyone who wants one.

22 MEMBER APOSTOLAKIS: But you really don't
23 give me what needs to be improved. I mean, it's
24 buried there, less stable, less transparent and less
25 predictable. That's really what the problem is. You

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1 think that we're still less transparent.

2 MR. PIETRANGELO: No. I think --

3 MEMBER APOSTOLAKIS: I mean, we put
4 everything on the website. We call people, "Do you
5 have anything to say?"

6 MR. PIETRANGELO: Let me try to drill down
7 on it just a tad. What licensees like is
8 predictability. They want to comply. They want to
9 know the regulations, how they're going to interpreted
10 and what they need to do to comply and we have a long
11 history now with most of the plants 25, 30, 35 years.
12 It gets a little -- And when positions change on what
13 compliance means that causes a lot of consternation in
14 the industry. That can happen through the inspection
15 process. That can happen through the review of an
16 amendment request, generic communications. It can
17 happen in a lot of different mechanisms. It's hard to
18 conduct the day-to-day business when long standing
19 things seem to change.

20 MEMBER APOSTOLAKIS: But I know that has
21 been a major complaint of the industry in the last 30
22 years. But I thought that the actions that the agency
23 took the last ten years have made significant
24 progress.

25 MR. PIETRANGELO: Perhaps. No question

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1 about it.

2 MEMBER APOSTOLAKIS: So is it still an
3 issue?

4 MR. PIETRANGELO: It still is. It still
5 is. We're not supposed to get into technicality. I'm
6 not going to go through a bunch of examples but I'll
7 just give you another on improving the regulatory
8 process. This is a rulemaking process.

9 MEMBER APOSTOLAKIS: Yes.

10 MR. PIETRANGELO: Fitness For Duty Rule
11 took ten years and the thing is about 1,600 pages
12 long. Part 52 took a long time. That's about 1,200
13 pages long. The security rulemaking, we're not done
14 with yet. That's about another 1,200 pages. And now
15 there's an emergency planning rulemaking effort that
16 I think the initial draft is about 1,000 pages. I
17 mean, that's a lot of --

18 MEMBER APOSTOLAKIS: No.

19 MR. PIETRANGELO: We worked the whole Part
20 50, I think, in about 25 pages. Okay.

21 MEMBER APOSTOLAKIS: I'm really interested
22 in what you're saying, Tony, and maybe we can also
23 improve the communication between you guys and us here
24 because I would certainly love to know why you think
25 1,200 pages is excessive and what should be

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1 eliminated.

2 MEMBER ARMIJO: Where's the substance?
3 Yes, there has to be some substance in those 1,200
4 pages.

5 MR. PIETRANGELO: Do you like it when you
6 get a 1,200 page rulemaking?

7 MEMBER ARMIJO: Absolutely not. Yeah.

8 MR. PIETRANGELO: And I don't think NRC
9 management likes it in particular either. The thing
10 is in the concurrence process. If you make a change
11 to something in there, then it has to go back and
12 that's why rulemaking tend to take so long. Now I'm
13 sure the Commission doesn't like it.

14 MEMBER SIEBER: The route itself is short.
15 It's the explanation.

16 MEMBER APOSTOLAKIS: The route itself is
17 short.

18 MR. PIETRANGELO: Not always. So I think
19 that's an area where there is some major improvement
20 that can be made.

21 MEMBER MAYNARD: I agree that there can
22 and should be improvement there. It is a little bit
23 of a two-edge sword though. If it is too quick and
24 easy to change the rules, that could create some
25 instability in itself, too.

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1 MR. PIETRANGELO: There are pros and cons
2 but I think the details -- I mean, when we say risk-
3 informed performance-based like the maintenance rule
4 probably had as much positive impact on risk
5 management as any other rule that was done and it's
6 probably a page and a half.

7 MEMBER APOSTOLAKIS: Yes.

8 MR. PIETRANGELO: It specifies the
9 outcome, not the how-to. That's what reg guides do.
10 Reg guides do how-tos. It shouldn't be all that
11 detail in the rulemaking and so there are ways to
12 improve it.

13 VICE CHAIR BONACA: I understand what you
14 say. I'm just intrigued by the use of the words "less
15 stable, less transparent and less predictable" than
16 when. I mean, I think that these characteristics that
17 you quote here have been typical.

18 MR. PIETRANGELO: Yes.

19 VICE CHAIR BONACA: Twenty years, thirty
20 years ago. So I'm trying to understand when --

21 MR. PIETRANGELO: I can give you a line.
22 I think when the reactor oversight process first came
23 out in late '99, early 2000, we went through a period
24 there about two years that I mean it was a very stable
25 environment and even though the ROP was just being

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1 kicked out. I think there were two events that kind
2 of drove us back to where we were 10 or 20 years ago.
3 One was the September 11th and then Davis Besse on the
4 back of that and we kind of reverted back some in the
5 regulatory process.

6 A lot of the security things were not done
7 in the best regulatory process and there were good
8 reasons for it as well. But it's not -- It shouldn't
9 be the day-to-day way to do business the way security
10 was rolled out on this. I know we're trying to catch
11 up now with the rulemaking, the proper way to do it,
12 but that's an example.

13 VICE CHAIR BONACA: Yes. Okay. I
14 appreciate it.

15 MR. PIETRANGELO: Okay.

16 MEMBER POWERS: I'm struggling to
17 understand what a stable definition of compliance
18 would look like. The only one that I can think of
19 that's stable, predictable and transparent is verbatim
20 compliance, absolute verbatim compliance. Anything
21 else that has any discretionary capability is going to
22 vary from issue to issue. I don't think you want
23 that.

24 MR. PIETRANGELO: When you -- Certain
25 regulations get implemented. Some require you to

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1 submit something. Some are validated through an
2 inspection when the regulation is first rolled out.

3 The point is that it's not that things
4 can't changed. Things can change. But there's a
5 process that should be used to make changes, not today
6 I think it's this and yesterday I thought it was that.
7 If you think it's this today, you should enter that
8 into a regulatory analysis to decide whether there is
9 safety benefit or that's commensurate with the
10 implementation process of it.

11 So it's not that the staff can't change
12 their mind on an issue. But there's a process that
13 should be followed when a change of position is
14 undertaken.

15 MEMBER POWERS: But you've been around and
16 complain about 1,200 pages. The two positions align
17 well with each other because as soon as you say
18 there's a process and people have input into this
19 process, you're going to get a proliferation of paper.

20 MR. PIETRANGELO: I am not a fan of 1,200
21 pages rules. I think when the rule is that
22 prescriptive then even if you want to change something
23 you have to go back into the rulemaking process versus
24 the how-to in a reg guide is a lot easier to change.

25 MEMBER POWERS: Also not very familiar

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1 with 1,200 page rules either.

2 MR. PIETRANGELO: Well, there's a lot of
3 them recently.

4 MR. MARION: If I might just add
5 something, this is Alex Marion again, we've had recent
6 discussions with the NRC in really focusing, bearing
7 down, on what the real core issues are with the
8 regulatory process and these discussions have led to
9 a paper that we've developed to identify and screen
10 issues as they arise whether they are initiated by an
11 inspection activity or an issue raised during a
12 license amendment review or whatever. But screen the
13 issue for potential generic implications and then if
14 they are generic, engage the industry and the staff
15 right away to determine what course of action needs to
16 be take.

17 That's going to have some positive
18 influence to this and bring the industry and the NRC
19 closer because one of the things that we found is that
20 we have a different interpretation of some of the
21 terminology as compared to the NRC staff. Backfitting
22 to the industry is a good example where we look at
23 that as any change in NRC's position whether it's been
24 articulated during an inspection that affects the
25 licensing basis of the plant without due process.

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1 The NRC as I understand their
2 interpretation of backfitting is the act of imposing
3 a new position on a licensee. Okay. So it's the act
4 of imposing as opposed to the change. There's a
5 difference there. So we're in to preliminary dialogue
6 to come to agreement on some of the terms and
7 backfitting is one of the key ones and I think that
8 will help improve the situation as time goes on.

9 VICE CHAIR BONACA: Yes. I'd like a brief
10 comment. On the other hand, September 11th created an
11 environment that regulators are responsible for and
12 there you have a situation that it takes years to
13 understand the implications. So probably your comment
14 regarding B.5.b and the fact that as you learn more
15 about what events could be or whatever, you're
16 generating new information that clearly creates
17 instability because you have a means of adding
18 requirements as you learn.

19 That unfortunately is going to be true.
20 Some event is going to happen there that is going to
21 drive us to have some instability. But that's not
22 really what you're referring to.

23 MR. PIETRANGELO: No. There were good
24 reasons for that that you just stated. But that
25 shouldn't be the notice operandi for how you do the

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1 normal regulatory process.

2 MEMBER APOSTOLAKIS: I'll tell you what.
3 I think it would help relationship building, Tony, if
4 instead of saying less predictable, less this and that
5 --

6 MEMBER CORRADINI: You say more.

7 MEMBER APOSTOLAKIS: You say more. We
8 would like to see more predictability. In other
9 words, you grant the other guy that there is some
10 predictability.

11 CHAIRMAN SHACK: That he's made some
12 progress.

13 MEMBER APOSTOLAKIS: Okay.

14 MR. PIETRANGELO: I appreciate that.
15 Thank you.

16 MEMBER APOSTOLAKIS: Then we would be men
17 of the '90s relationship.

18 CHAIRMAN SHACK: Men of the '90s?

19 (Laughter.)

20 MR. PIETRANGELO: The rest of the slides
21 here are not as -- I want to leave, make sure we have
22 enough time for John and Clair. Just with that, if
23 you have any questions.

24 MEMBER APOSTOLAKIS: Is PRA still a tool?

25 MR. PIETRANGELO: It's still a tool,

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1 George.

2 MEMBER APOSTOLAKIS: Okay.

3 MEMBER MAYNARD: I think we'll have some
4 time at the end.

5 MR. PIETRANGELO: Yes.

6 MEMBER MAYNARD: Have good presentations
7 and maybe have some more open discussion.

8 MR. PIETRANGELO: Great.

9 MR. GAERTNER: Thank you. I'm John
10 Gaertner and my current position is Senior Business
11 Operations Manager for the Nuclear Sector of EPRI.
12 But I've spent my entire career in technical divisions
13 of EPRI and I've met many of you in many different
14 capacities, your different capacities and mine,
15 throughout the years. So it's a pleasure to speak
16 before you today.

17 I'm going to give you an overview of the
18 nuclear power sector at EPRI, but I'm going to begin,
19 back up a little bit, and tell you a little bit about
20 the EPRI, what our picture is globally, a little bit
21 how we function and then end with a discussion or at
22 least a listing of many of the activities that we are
23 involved in with our partners, INPO, NEI and others
24 globally. The first slide please.

25 First of all, EPRI is relatively a young

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1 organization founded in 1973. We are a nonprofit
2 corporation in the United States which we means we are
3 owned by the public. So we are required by our
4 charter to be unbiased, objective, nonprofit and we've
5 elected to be an membership organization. So we are
6 a very collaborative organization.

7 Our membership is participants in the
8 electric power industry and we are entirely
9 voluntarily funded. So everyone comes and gives to us
10 every year of their own volition and because of our
11 nonprofit status, our collaborative research must be
12 to the benefit of our members, to our customers and to
13 the society at large. We spend a lot of time
14 protecting our nonprofit status and our charter and
15 sometimes even our own members have some consternation
16 with that because they want to take some of our work
17 and run with it in certain ways and we can't do that.
18 We have to maintain our objectivity and these very
19 strict rules.

20 We have over 700 North American members of
21 EPRI at large and that represents over 90 percent of
22 the U.S. electricity generated. But like I said,
23 we're voluntary. So we still have some members that
24 are not participating in EPRI. But that is no true in
25 the nuclear sector. We have full participation in

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1 nuclear.

2 We are also a global organization. We
3 have at this time over 130 international participants
4 and our global penetration or interest is still
5 growing although we're beginning to peak on that a
6 little bit. We're quite global at this time. Next
7 slide please.

8 At EPRI, we have four major sectors. We
9 divide all of our research into four major sectors.
10 I certainly don't intend to go over the details of
11 this slide, but I do want you to appreciate these four
12 major divisions.

13 The first one on the left is entitled
14 Generation and Distributed Resources. In that sector
15 of EPRI, we perform all of the R&D that has to do with
16 electricity generation with the exception of nuclear
17 power. That's taken out. But all other forms of
18 generation are dealt with in that sector.

19 The second sector there is Nuclear Power.
20 That's our largest. Nuclear Power is our largest
21 sector in terms of R&D dollars at Nuclear. And I will
22 go into that R&D in considerable detail in this talk.

23 The third sector is Power Delivery and
24 Markets. That is primarily the grid and the
25 distribution system. But it also deals with what

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1 markets are in there because how your grid is designed
2 and how it's operated and the reliability of that grid
3 depends on how electricity is moved through that grid.

4 So we do research in the markets area and that's in
5 that sector also.

6 Finally, we have a sector on the
7 environment which is probably our most academic and
8 purely scientific of our sectors. We do quite a bit
9 of work in the air quality and water quality areas as
10 well as questions of EMF, high voltage safety,
11 occupational health and safety and most recently
12 climate change. Next please.

13 Now back to our nuclear power sector
14 mission, you'll see a clear analogy here with NEI. We
15 work closely with NEI and INPO on identifying what we
16 think the strategic issues are within the industry
17 from the industry's standpoint and so we spend time
18 together to discuss that. Then we go our separate
19 ways and decide how we would carry that out with our
20 own charters. So like NEI, we have a commitment to
21 safe, reliable, environmentally sound and cost
22 effective technology and then we look at that from two
23 perspectives. One is our utilization of our existing
24 nuclear assets and the other is support, the
25 deployment of new nuclear technologies. But because

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1 there is considerable overlap in that R&D that is much
2 of the R&D we do is applicable to both. We don't --
3 Although we look upon them separately, we also often
4 are doing the same task for both objectives. Next
5 please.

6 I'm going to go back a little bit to our
7 membership within the nuclear sector so that you have
8 an appreciation of how extensive it is. First of all,
9 all of the 26 U.S. nuclear operators are members of
10 EPRI. That has not always been the case, but it is
11 today. So we have full domestic participation as full
12 members in EPRI.

13 We also have ten international members.
14 Our most loyal and our earliest member and our closest
15 ally if you will in R&D has been Electricite de
16 France. However, we also have British Energy. We
17 have all of the Canadian reactors and Romanian
18 reactors through a relationship with a CANDU Owners
19 Group. We have two companies in Japan, TEPCO and
20 Chubu with hopes of expanding our Japanese membership.
21 We have all of the Spanish utilities through an
22 agreement with UNESA and Brazil and our most recent
23 addition is South Africa. So these are all full
24 members.

25 We also have many other people who

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1 participate on individual programs but are not full
2 members and we also have some parts of the globe in
3 which we are not engaged and that's primarily would be
4 India and the former Soviet public --

5 MEMBER POWERS: North Korea.

6 MR. GAERTNER: And then we have some of
7 the smaller ones also. But we have chosen not to
8 engage with those people at this time although we are
9 looking. For example, we've recently had an visit
10 from India on ways we might be begin to collaborate
11 with them.

12 MEMBER APOSTOLAKIS: Are Taiwan and South
13 Korea members?

14 MR. GAERTNER: Taiwan and South Korea are
15 not members at this time. However, they are
16 participants in many of our programs. But they are
17 not full members at this time. Next please.

18 As I said, a very important part of the
19 way we work at EPRI is collaboration. So our
20 relationships as Tony said for NEI are very important
21 to us also. On the lower left-hand side, we list, of
22 course, the strong relationship with have among EPRI,
23 INPO and NEI. But we also have other very strong
24 relationships with the Department of Energy and with
25 the NRC Office of Research and I'm going to get into

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1 that in some detail later on because we have a very
2 formal relationship with the NRC Department of
3 Research so that we work very closely with them but
4 very carefully through a very clear set of rules.

5 And we also have a formal relationship
6 with the Idaho National Laboratory. We are a partner
7 in that laboratory, not a managing partner, but a
8 research partner in Idaho National Laboratory.

9 VICE CHAIR BONACA: John, the question I
10 have is you still operate with the advisory task
11 forces, do you?

12 MR. GAERTNER: Oh yes, absolutely, and
13 I'll get into that, how that works.

14 VICE CHAIR BONACA: That's really a strong
15 link to the nuclear industry.

16 MR. GAERTNER: Yes. I'm going to get into
17 that in some detail because it's very important to
18 understand why we work on what we do and that's our
19 relationship with our members.

20 We also have global relationships with
21 research agencies throughout the world. Many of the
22 leading research facilities in Europe and Asia we
23 work very closely with. And then we try to build
24 strong cooperation with the vendors, with NSSS Owners
25 Groups and universities. Particularly recently, we've

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1 been able to build a much healthier and stronger
2 relationship with the NSSS Owners Groups.

3 For awhile there, when the industry was
4 not growing, there tended to be a little bit of
5 competition between what the owners groups wanted to
6 do through their vendors and EPRI, but now I think the
7 resources are scarce. The mission is much bigger and
8 there's much more room for everybody and we're working
9 much more closely with them. Next please.

10 I want to stop just one moment here and
11 tell you about our nuclear strategic plan. Prior to
12 2002, we were a little bit of a loose cafeteria style,
13 if you will, organization in a way. We had 26,
14 anywhere from 26 to 28, programs depending on what
15 snapshot in time you're looking and they didn't have
16 good cooperation. They operated quite independently.
17 There was, of course, oversight cooperation but it
18 wasn't as much as we had hoped.

19 And when our former vice president, Ted
20 Marston came back he wanted to build a much tighter
21 and more strategic organization. So Ted asked me to
22 come back to EPRI. I had left for a number of years.
23 He asked me to come back and work with him to develop
24 an EPRI nuclear strategic plan. We did that and it
25 has greatly affected our organization and our

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1 performance and I'll tell you how in a moment.

2 But, first of all, our strategic plan, we
3 have clear vision and we know what the strategic goals
4 are of our industry members and we work, as I've said
5 earlier, we developed those along with NEI and INPO.
6 So we have a common vision and a common understanding
7 of the industry's strategic goals with these
8 organizations. But then we go our separate way. We
9 have a different mission on what to do to address that
10 vision and those strategic goals.

11 We have identified from that ten technical
12 areas. So we've been able to pull what was formerly
13 about 26 programs into ten very strategic technical
14 areas and I'll tell you what those are in a minute.
15 Each of those technical areas develops annually an
16 action plan and we actually use the words "action
17 plans" to define each of these ten technical areas.

18 From that action plan, we develop a three
19 year research portfolio and we work on a three year
20 budget cycle and we also have a process of identifying
21 what we call change initiatives. That is this is
22 where we want to be strategically in this technical
23 area. This is where we are. What change initiatives
24 do we need to direct us more towards that to where
25 we'd like to be and every year we identify these

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1 change initiatives and we use whatever discretionary
2 funds we can find to move toward, to fund those
3 initiatives to move in that direction.

4 MEMBER CORRADINI: So let me ask a
5 question. You use the terminology. You didn't call
6 them task forces. What did you call them?

7 MR. GAERTNER: Action plans.

8 MEMBER CORRADINI: Action plans. So how
9 are your action plans coordinated with the NEI task
10 force? How is this all -- Or is it?

11 MR. GAERTNER: They are not coordinated.
12 However, we invite NEI in many of those actions plans
13 that are working on issues, if we're working on the
14 technical end of issues that NEI is working on the
15 policy end or the implementation end, then we invite
16 NEI to participate in our action plan meetings. They
17 don't vote. They're merely there to offer their
18 perspective of those industry issues.

19 MEMBER CORRADINI: So let me ask a broader
20 question and maybe this is not the right place. So
21 you can defer it. I guess I looked upon the three
22 organizations in some sense as addressing the
23 industry's needs and the industry's needs can be
24 essentially sorted in terms of time and also general
25 categories, policy, technical.

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1 MR. GAERTNER: Operations.

2 MEMBER CORRADINI: Well, I was going to
3 say operations obviously with INPO, but I was thinking
4 of you used the term community -- You didn't use
5 community relations but I interpreted that to be the
6 case which is the population, the general public.

7 So I have these three bins and then I have
8 time as it rolls out. I'm curious. Where does -- And
9 I expect EPRI is going to be in the longer term. So
10 in terms of how you fit in, if I took an area in terms
11 of materials, I want to pick something that's
12 important, at least, from one group's perspective.
13 You called it management materials issues. If NEI is
14 approaching materials issues, how does EPRI couple
15 into that from an R&D standpoint so that it is
16 seamless put together so that they're not spending
17 money on something you should be spending money on or
18 they're addressing an issue that is more short-term?
19 Do you see where I'm -- I'm struggling with how time
20 fits in and a topic fits in so that it's in some sense
21 coordinated.

22 MR. GAERTNER: Yes. I'll give you from my
23 seated EPRI how that looks and let's do materials.
24 We've, of course, have been doing fundamental
25 materials research for years. So we have a lot of

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1 expertise at EPRI. We have a lot of tools. We have
2 facilities to define and investigate inspection
3 techniques, so forth. We have all that.

4 So when a materials -- Let's imagine we
5 have an emergent issue occur in the industry,
6 something like the Wolf Creek dissimilar metal weld
7 issue on the pressurizers. NEI will generally take
8 the lead in mobilizing the industry and the industry
9 either through NEI or through in this case a very high
10 level task force. NIONK ***9:32:45, it is one of your
11 --

12 MR. MARION: If I may, let me set the
13 stage here. We mentioned earlier, this is Alex Marion
14 again, that we had undertaken this material initiative
15 in 2003. That provided an overall framework of what
16 the industry activities are going to be going forward
17 relative to addressing materials issues.

18 Part of that initiative called for an
19 advisory body to be established that reported directly
20 to our chief nuclear officers and that's referred to
21 as Materials Executive Oversight Group and all of the
22 industry groups that are involved in materials issues
23 that are either represented by EPRI or represented by
24 the NSSS Owners Groups are represented in that effort.

25 Now we provide oversight coordination. We

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1 don't deal with the implementation. We rely on the
2 EPRI groups or the NSSS Owners Groups to address the
3 implementation aspect. But all within the framework
4 that we've established.

5 Additionally, we have EPRI representation
6 on this advisory committee and EPRI has NEI and INPO
7 representation on their related advisory committees.
8 So we have I think a significant level of
9 coordination.

10 VICE CHAIR BONACA: One question I have --

11 MR. MARION: But we don't -- NEI does not
12 necessarily want to influence EPRI's decision making
13 as far as budgets and projects. That's their advisory
14 --

15 MEMBER CORRADINI: Clearly, they have four
16 bins and only Nuclear is one of the bins.

17 MR. MARION: That's correct.

18 VICE CHAIR BONACA: Let me take an example
19 where I'm curious now how it works. I know how it
20 used to work but there is a Nuclear Power Council I
21 think still for EPRI that really decides, makes,
22 certain decisions regarding a location of funding.
23 Say that robust fuel was one of the problems. But the
24 industry was converging on that. INPO had zero effect
25 fuel, coals, and NEI was involved in that.

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1 What is the linkage of this Nuclear Power
2 Council that makes these kinds of decisions on the
3 funding for EPRI to NEI and INPO? I mean, is there a
4 linkage there whereby you can influence that through
5 the linkage?

6 MR. MARION: Yes.

7 VICE CHAIR BONACA: Or are there some
8 other means?

9 MR. MARION: There is a linkage. Jay
10 Thayer is the Vice President of Operations. He's on
11 loan to NEI's executive from Entergy is their NEI
12 representative on the Nuclear Power Council.

13 VICE CHAIR BONACA: Okay.

14 MR. MARION: Additionally, and I don't
15 know who the INPO representative is.

16 MR. GODDARD: This is Clair Goddard from
17 INPO and let me just add that INPO is also represented
18 on the EPRI Nuclear Power Council. I have represented
19 INPO. Currently, Rick Jacobs who is our Vice
20 President of Technical is the INPO representative. In
21 addition, Rick and previously me participated on the
22 Materials Executive Oversight Group, associated Action
23 Plan Working Groups, for materials issues in both NSSS
24 systems and in fuel. So that continues.

25 INPO's role in all of that, of course, is

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1 to try to influence, but not dictate where the
2 guidelines go and our focus is on excellence, not
3 minimum compliance. And then our role in that after
4 the guidelines are developed and promulgated in the
5 industry is to follow up and make sure that they're
6 being implemented properly and we do that through our
7 plan evaluation activities.

8 VICE CHAIR BONACA: Okay. So you do have
9 a linkage at that level.

10 MR. GODDARD: Yes.

11 MR. GAERTNER: From EPRI's point of view
12 in the fuel reliability area, obviously it was
13 identified as an important issue by NEI. It was taken
14 up with the way in which it would be implemented at
15 the plants is being developed by INPO. What we did at
16 EPRI is working together with these organizations. We
17 identified what were the fundamental technical needs
18 to support that implementation and we identified very
19 strong technical needs and so EPRI over a three year
20 period and we did this through our own advisory
21 structure and with our own funding structure, we are
22 committed to develop four very important technical
23 guidelines that we will then hand over to our
24 membership and they will be totally coordinated with
25 INPO's implementation of that fuel reliability

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1 initiative. So while we maintain as we must our
2 technical objectivity and we clearly define our
3 technical role, these guys can use that information.
4 That's how we work together.

5 VICE CHAIR BONACA: Okay.

6 MEMBER CORRADINI: That helped. Thank you.

7 MEMBER MAYNARD: I think that one of the
8 real ties is that the funding for NEI, the funding for
9 EPRI, the funding for most of these comes from the
10 same utilities who are providing. They're on the
11 advisory committees and the people making the
12 decisions within NEI to do something if EPRI is the
13 one to do it. So therefore a real linkage and a real
14 tie is there.

15 VICE CHAIR BONACA: I'm trying to
16 understand more where the decision is made. I mean,
17 yeah, their location of funds comes through Power
18 Council down, but the decision is made at the high
19 level for the whole industry and that involves NEI and
20 that involves INPO that fuel needs to be improved.
21 Okay. So there has to be a program and, you know, at
22 the beginning if I remember it was a funding of \$44
23 million. That probably increased through the years.
24 So that's a major commitment and now I'm trying to
25 understand how now it works, how the decision is made,

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1 that strategically you have to have that improvement
2 happening for the whole industry and then it trickles
3 down into the different activities.

4 MR. GAERTNER: Do keep in mind that 30
5 percent of EPRI's funding comes from non-domestic
6 membership. So we must be very sensitive. What we're
7 doing, the good news is because it's technical, it may
8 not fit exactly in the -- The implementation may not
9 fit the exact way that INPO has elected to do it in
10 other countries when the policies might be different
11 than the NRC or NEI.

12 But we try to craft that technical
13 solution so that it's generically useful. It's not
14 always. There may be a greater incentive to do it for
15 domestic than foreign, but that's an important
16 criteria for us.

17 MR. MARION: And if I may just close and
18 give you a current sense of fuel reliability, there's
19 an executive committee within the EPRI structure
20 that's chaired by Joe Shepherd from South Texas
21 Project. I'm on the executive committee. INPO is
22 represented on the executive committee and the
23 chairman of that committee periodically reports to the
24 industry chief nuclear officers of NEI on the status
25 of activities in terms of progress in achieving the

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1 fuel performance issue.

2 VICE CHAIR BONACA: Okay. So that's how
3 you look at it at the highest --

4 MR. GAERTNER: CNOs is where the current
5 coordination occurs.

6 MR. MARION: Go on to the next slide,
7 John.

8 MR. GAERTNER: I told you that there were
9 ten -- that we have through the nuclear strategic plan
10 we had condensed our work into ten very strategic
11 areas and these are the ten. I'm not going to go over
12 them, but in my remaining talk, you'll see that I'm
13 going to mention a number of particular activities and
14 projects that address many of these different areas.
15 I think you'll see in those ten areas really an
16 opportunity to work on almost all the important
17 technical issues that face the nuclear industry. Next
18 please.

19 Just momentarily a question or a
20 presentation of our leadership team. Our president
21 and CEO is Steve Specker who comes to us used to be
22 the CNO of General Electric Nuclear, our Senior Vice
23 President of R&D is Mike Howard. We have a new this
24 week Vice President and CNO within EPRI and that
25 person is Chris Larsen. Dave Modeen has stepped down

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1 for personal reasons, but he'll remain within our
2 sector at EPRI and a very important resource. So that
3 may be news to some of you.

4 And I also have highlighted below the
5 direct reports to the vice president. Four of those
6 we roll our ten technical programs up for management
7 purposes into four larger groups and NDE and advanced
8 nuclear technology which is really new plants, plant
9 technology and materials and chemistry. Next please..

10 MEMBER MAYNARD: Now fuels in materials
11 and chemistry.

12 MR. GAERTNER: Fuels is in materials and
13 chemistry, yes.

14 This is intentionally a very busy slide.
15 I'm going to use it to bring up the point that Mario
16 was raising and that is how does our advisory
17 structure influence the way we do business. It
18 certainly does.

19 Our Nuclear Power Council which is that
20 red bar up there within our Nuclear sector, that is
21 our highest level advisory governance body. There is
22 one member from each of our 36 members nominated and
23 represented. On the Nuclear Power Council, each
24 company gets one vote regardless of size and they set
25 our -- they oversee the activities of all of the

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1 underlying programs and committees.

2 Each of those blue boxes is an action plan
3 working group. That's an advisory committee where
4 technical experts in those areas as well as one
5 representative from the Nuclear Power Council who
6 serves as chairman where they oversee all of the
7 technical work that's being done in each of those
8 technical areas. We meet twice a year, everybody
9 together, hundreds of advisors coming together with a
10 large number of EPRI staff where we review our
11 progress to date on activities. We review the
12 proposed allocation of moneys to new issues and we
13 review the what emergent issues are coming up and how
14 to prepare for those.

15 The red underlined names which you may not
16 even be able to read and even that's okay because that
17 just shows that these are the 19 programs that we have
18 and then below those we have many technical advisory
19 groups and users groups that function to carry out
20 more detailed technical advice to us. So all and all,
21 we have hundreds of member advisors advising us
22 throughout the year and coming together in a very
23 formal structure to be certain that we are working on
24 what the members need and that they're satisfied with
25 our results and so forth.

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1 There is, of course, a little bit of
2 struggle there because throughout this we are not
3 contractors to these people. We are an independent
4 research organization. They are purely advisory. But
5 we work very hard to meet their needs within our
6 charter.

7 MEMBER BLEY: John.

8 MR. GAERTNER: Yes.

9 MEMBER BLEY: Some of these like
10 especially Equipment Reliability and some of the
11 Materials, certainly the issues cross over with those
12 of non nuclear power plants. Is there any trading or
13 joint work or are those organizations really pretty
14 separate?

15 MR. GAERTNER: In Equipment Reliability,
16 there is quite a bit. It turns out in Materials not
17 so much because our materials are quite unique. Now
18 in the fundamental science of materials, corrosion
19 research and so forth there is. But in the issues
20 that we generally face which have a regulatory flavor,
21 we don't. So Materials not so much. Equipment
22 reliability we do.

23 I forget where I was.

24 (Laughter.)

25 MR. GAERTNER: Next slide. Just one other

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1 item on that slide. I knew I was holding a thought.
2 Above that Nuclear Power Council, we have a Research
3 Advisory Council which would look at the research in
4 all four of our sectors and whether those are
5 sufficiently balanced and coordinated and then we have
6 an overall board of directors at EPRI. So the Nuclear
7 Power Council although downwardly operates very
8 independently., upwardly is reportable to Research
9 Advisory Council and a board of directors made up of
10 our members. Next please.

11 Because of the way we're structured we're
12 able to look at issues and technical challenges in a
13 very integrated way. For example, if we are asked to
14 address a materials issue on the primary side of a
15 nuclear power plant, we are able to bring to bear many
16 different programs and expertise on those issues.

17 For example, we will generally work on the
18 NDE and inspection side to determine how to best
19 evaluate in the field that issue and how to go about
20 the inspection all the way to certifying the
21 inspectors and certifying the process for that
22 inspection. We also might look at the radiation
23 exposure implications and come up with radiation
24 exposure procedures to address that. We may look at
25 the implications that that may have on fuel.

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1 We may be looking at an additive, for
2 example, to mitigate a materials problem. Well, that
3 additive might have an effect on the fuel. We'll
4 immediately go to our fuels people and address that.
5 We may use some risk-informed arguments either to
6 strategize an immediate response to that activity or
7 a long-term response and we may have to deal with a
8 radioactive low-waste issue or an equipment
9 reliability issue in association with that. So we do
10 that in a very integrated way within EPRI. We're
11 probably the only organization in the world who can
12 bring to bear so much technology to an issue. Next
13 please.

14 MEMBER ABDEL-KHALIK: Now how does the
15 issue identification process work?

16 MR. GAERTNER: It can come about in two
17 ways. It can come about within EPRI because we have
18 these, even at the lowest level, meetings with our
19 members. We have technical advisory groups of very
20 detailed technical experts almost at the program level
21 and at the management level. These can bubble up
22 through that structure or they can come about
23 externally and if they do, they're usually brought in
24 at a higher level into the Nuclear Power Council and
25 so forth. For example, it might come from an NSIAC

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1 concern, came out of an NSIAC issue, and they said,
2 "EPRI, we'd like you to look into this."

3 MEMBER ABDEL-KHALIK: But is there an
4 inherent structural self interest that sort of
5 prevents some issues from bubbling up?

6 MR. GAERTNER: I don't believe so. We've
7 tried to avoid that through our -- We have this
8 nuclear strategic plan process which operates, we have
9 our advisory structure process which operates and we
10 have all of this, our fingers in and our ears open in
11 all these other organizations. I should hope there
12 wouldn't be any institutional bias that would keep an
13 issue from coming up at EPRI.

14 Now what we can do with that issue, we
15 might be restricted because of our charter. I mean,
16 we have to -- If it's a policy issue, we would not
17 take the lead.

18 MEMBER SIEBER: I think another instance
19 is when the issue affects only one or two plants.

20 MR. GAERTNER: We even have a way -- If it
21 affects a single plant, that's correct. It's unlikely
22 that they would come to EPRI for that. They would go
23 about the solution.

24 But we have about 40 percent of our
25 funding at EPRI that comes through our membership

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1 subscriptions. The remaining 60 percent is what we
2 call supplemental. That is work that doesn't qualify
3 as broadly generic and didn't get authorized through
4 our advisory structure. But there was interest by a
5 smaller group of utilities or there was interest by a
6 broad group but it didn't really qualify as research.
7 For example, it might be continuation of a users group
8 on a piece of software and it's not really research,
9 but it's still in their best interest that it be done
10 at EPRI. So we do that work through our supplemental
11 program which is very large. It's slightly more than
12 half of our work.

13 MEMBER SIEBER: Right. Larger than the
14 subscription part.

15 MR. GAERTNER: Pardon me?

16 MEMBER SIEBER: Larger than the
17 subscription part.

18 MR. GAERTNER: At this point, it is larger
19 and we're always trying to make our subscription part
20 bigger. But that's a give and take process basically.

21 MEMBER SIEBER: Right.

22 MR. GAERTNER: It takes time to sometimes
23 catch up.

24 MEMBER SIEBER: Well, as a former utility
25 person, it's hard to pay money for something that you

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1 don't really need but you could pay a lot when you
2 need it.

3 MR. GAERTNER: Thank you. Can you say
4 that?

5 (Laughter.

6 MR. GAERTNER: I wanted to -- The
7 remainder of my talk really goes over what are some of
8 the issues we're working on and I think you'll see
9 there are many of the same issues that you heard from
10 NEI and even if you didn't hear from NEI, they're
11 probably involved in them from their perspective along
12 with us because the issues I've chosen here except at
13 the very end are those that I thought might cross your
14 desks and so they have some regulatory implications.
15 We do much work that doesn't have regulatory
16 implications at EPRI. But most of what I'll talk
17 about here does.

18 Of course, we have a very large initiative
19 right now in digital I&C as you well know. We've done
20 a decades worth of work on behalf of the industry on
21 the technical aspects of digital I&C and we're very
22 pleased now to bring to bear that work and that
23 expertise to try to move forward along with NEI and
24 with the NRC on this digital I&C and human machine
25 interface issues.

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1 We've been deeply involved in this
2 inspections of dissimilar metal welds at EPRI. We
3 just completed an extensive finite element analysis
4 and the establishment of acceptance criteria that
5 utilities could use to justify their schedule for
6 inspections on the issues associated with the
7 dissimilar welds concerns at Wolf Creek and that was
8 very successful and NRC just accepted that technical
9 work. We're very proud of that.

10 We've done a lot of work to support risk-
11 informed regulations, again, mostly with the policy
12 leadership and the leadership of NEI on the interface
13 with NRC, but we developed the technical guidelines to
14 support the risk managed tech specs that was just
15 approved by the NRC. We at EPRI are trying to take
16 the lead to work to identify and make progress on a
17 pilot application of 50.69 and so we have been able to
18 get funding available, we've identified a candidate
19 and as Tony said, we hope to make progress on that.

20 We also have worked on the technical
21 foundation for the risk-informed fire protection. A
22 lot of the PRA we've done and we did it under a
23 memorandum of understanding with NRC Research. So as
24 far as the PRA data and basic requirements as well as
25 some of the tools available such as fire modeling

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1 tools we've developed at EPRI.

2 We're also working on some containment
3 coating issues in relationship to Generic Safety Issue
4 191.

5 MEMBER POWERS: Who's doing that work?

6 MR. GAERTNER: Pardon me?

7 MEMBER POWERS: Who's responsible for that
8 work in your shop?

9 MR. GAERTNER: In our shop, Tim Eckard in
10 the Equipment Reliability Group. Tim is a coatings
11 expert.

12 We are doing technical work on emergency
13 planning in order to show ways in which the next wave
14 of emergency planning guidelines and requirements can
15 be risk-informed and can be modernized with the better
16 knowledge we now have of source terms and physical
17 scenarios that would actually occur at plants.

18 We're involved in the BWR steam dryer
19 issue which is an impediment right now for BWRs to
20 move ahead with further power upgrades. We're working
21 to help develop an analysis technique for steam dryers
22 and we also played a large role in developing alpha
23 radiation guidelines when the NRC took issue with the
24 industry's -- with the consistency and quality of some
25 of the radiation monitoring that the industry was

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1 doing. Industry came to EPRI and we were working with
2 our members. We have developed new alpha radiation
3 guidelines. So these are examples of the way in which
4 we work keeping in mind that the work we're doing is
5 very technical and very objective and we hand that
6 work over either to the members or to other INPO or
7 NEI, an appropriate organization, to move that forward
8 through regulatory interface or in establishing
9 industry policy. Next please.

10 MEMBER MAYNARD: I don't know if you need
11 to go through each one of these. You might pick out
12 some and then maybe, some of the members, if you have
13 a specific one you might --

14 MR. GAERTNER: Yes. In fact, I'll take two
15 out of here and then I'll let you ask questions. This
16 is just more issues to give you an idea of the breadth
17 of work. The fuel reliability one we already talked
18 about but that's one we're working primarily with INPO
19 and not closely with NEI just because INPO is
20 responsible for the implementation of that initiative
21 and so we're supporting that with technical
22 guidelines.

23 The aircraft impact is an interesting one.
24 We took that -- After 9/11 on behalf of the industry,
25 we did quite a bit of detailed technical work on

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1 aircraft impacts, detailed finite element modeling,
2 investigation of sizes of the threat and so forth and
3 we did a lot of work for existing plants and we
4 reported that work both directly to the Commission and
5 through NEI to our members. Now we've found that,
6 this recent proposed rulemaking for new plants to
7 address aircraft impact, that information or the work
8 we've done is of potentially great value. And so we
9 are -- The new plant vendors are working.

10 What we're doing is we're providing the
11 methodology and we're providing the consistent, the
12 guarantee of consistency and peer review, for that
13 technical work for the new plant vendors. They're
14 doing the work, but we are providing technical
15 assistance and peer review for that work. So that's
16 something -- That's a place where we did the work and
17 it has turned out to be very important on behalf of
18 the industry.

19 MEMBER ARMIJO: John, could you just
20 expand on the LNT models and the radiation threshold
21 work, what you're doing and where do you expect to go
22 with it?

23 MR. GAERTNER: That's correct. There was
24 a -- It's called a gray beard group. A number of
25 prominent industry people were called together and

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1 asked, "Is there anything we can do?" Apparently,
2 this linear, non-threshold issue as you know is the
3 low level, the health effects are very low levels of
4 radiation, seriously affects the industry as far as
5 the way in which we do maintenance, the exposure of
6 our workers as well as the potential when we have to
7 communicate the impact of nuclear power to the public.
8 It plays a large role in what we say and it looks a
9 lot worse than we believe it is. But we operate
10 conservatively under that linear non-threshold
11 assumption.

12 So this gray beard group got together and
13 said it's time to rethink this. What they asked EPRI
14 to do and what we're doing now is we're doing a very
15 thorough search of what -- this is not the first time
16 this has been done of course. But a very thorough
17 look at what is out there. What is the potential for
18 having a better, more accurate, more favorable model.
19 So we are doing that at EPRI. This is just the first
20 task. But if that's successful, then we're prepared
21 to move ahead with the industry to propose a less
22 conservative and more accurate model. That's what
23 we're doing.

24 MEMBER CORRADINI: Have you engaged the
25 NCRP on this because unless you engage it, a

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1 national/international group on this, I think it will
2 be tough split?

3 MR. GAERTNER: Yes. This definitely has
4 to be a very integrated effort and will be.

5 MEMBER MAYNARD: Okay. Any of the other
6 items on this page?

7 MEMBER POWERS: I'd just comment that the
8 only way to make headway on that is to come up with a
9 biochemical model and so far people haven't found an
10 easy way to do that.

11 MR. GAERTNER: Okay. I have to take this
12 information because this is not my area of depth.
13 Next please.

14 I have one other subject I want to talk
15 about and that is I want to explain to you how we
16 operate, how we work collaboratively with NRC Research
17 and to do that I'm going to go back a little bit in
18 history and we worked -- many organizations work very
19 collaboratively especially on severe accident
20 management issues in the '70s and '80s. There was a
21 lot of collaborative R&D work, but that died out very
22 much in the '90s. There seemed to be considerable
23 amount of concern about independence and no one had
24 sorted out in what ways we needed to be independent.
25 Of course, we needed, the NRC and industry needed to

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1 reach conclusions independently. But how much could
2 they work together?

3 In the late '90s, I think we sorted that
4 out for a lot of reasons. First of all, there became
5 a greater appreciation that we had common R&D goals.
6 We knew we didn't have enough resources to do
7 everything totally independent and in some respects,
8 the risk-informed regulation really encouraged us. We
9 found that it was a detriment to have come to our
10 conclusions so independently because after you've
11 gotten the whole analysis done, you know, after you
12 build the house, it's hard to look at the studs. So
13 it's really good to lay out as much as you can, reach
14 agreement on data, maybe some general methodologies
15 and to validate perhaps some of those methodologies
16 jointly, then to move together independently. And
17 once we sorted that out, I think we are now at a point
18 where RES and EPRI are encouraging increased
19 collaboration. Next please.

20 So we have a very robust memorandum of
21 understanding with RES and EPRI. The collaboration
22 includes defining what the issues are and what the
23 data needs are and in collecting that data even doing
24 analysis where that analysis has the purpose of either
25 validating the data or doing sensitivity studies or

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1 comparing methodologies.

2 But we don't go so far as doing analysis
3 that will then be presented to the decision maker or
4 that will establish policy. So we don't do regulatory
5 analysis and we don't offer solutions, but we do the
6 fundamental data analysis and data collection. Next
7 please.

8 So what exactly are we working on
9 together? We have -- The top three areas are what we
10 call MOU addenda. We have very clear scopes of work
11 for those first three areas where NRC Research, we
12 have activities and we're bringing those together, in
13 the area of PRA and that includes a number of very
14 important scope and quality issues.

15 George asked about where we're going with
16 PRA. Well, one thing we're doing is we're absorbing
17 a lot of the change we've done over the last decade
18 because we now have standards, we now have Reg Guide
19 1.200, we now have to make sure that we have the
20 technology and the products that live up to those high
21 technical standards and we're doing that at EPRI and
22 we're doing that closely with RES.

23 We're also working closely on fire risk
24 and I told you about that including PRA methods.
25 We're also doing joint training because of the huge

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1 number of resources that are needed right now because
2 of everyone interested in the risk-informed fire
3 protection.

4 The third area is PWR materials as well as
5 NDE. I told you some of the work we're doing there
6 and we are working collaboratively also in the NDE
7 area which is primarily how to do inspections of some
8 of these industry concerns.

9 Other areas that we're working on under
10 our memorandum of understanding but we're working just
11 more generally have to with the MAAP code. MAAP code
12 is extremely important to the industry because it's
13 the severe accident code that's used by almost
14 everyone. It's used worldwide but it's particularly
15 important that this code have maintained its pedigree,
16 that it has credibility with the NRC and that it be of
17 impeccable quality and so we are working closely with
18 NRC Research to develop documentation, case studies
19 and so forth to demonstrate that quality to the NRC.
20 But we are not -- The NRC is not developing a formal
21 SER and this is all cooperative information exchange.

22 As I said, we're working extensively in
23 the digital I&C area with RES. Again, we don't have
24 a formal memorandum but we're working in a lot of
25 areas.

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1 We have worked in dry cask storage and
2 transportation risk assessment, very successful joint
3 work there.

4 And we've done a lot of fuel analysis in
5 the past together. It's very expensive to fuel
6 analysis and there are very few facilities to do it.
7 So we work cooperatively there.

8 We're looking at some potential future
9 topics and those include looking together into the
10 prospects for high burn-up fuel. We're looking at
11 doing further work in seismic together. And there's
12 interest in looking into extending plant life beyond
13 60 years. We're interested in looking at some of the
14 technical issues like concrete issues and things like
15 that that we've not looked at in the past.

16 If I could just have one more minute, I'd
17 like to mention the seismic area. We've been doing
18 seismic work at EPRI for a long time, both extensive
19 seismic hazard or extensive seismic PRA work. We've
20 done a lot of testing and we've done a lot of
21 evaluation of earthquake damage that we have extensive
22 databases of that work and when the earthquake
23 occurred in Japan two months ago at the seven Unit
24 TEPCO BWR plant and TEPCO is one of our members, we
25 mobilized immediately and sent people there. We gave

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1 then our technology and they are busy employing that
2 technology to get those seven units back online as
3 expeditiously as possible and we're also using that
4 extensive information to answer concerns in this
5 country that may have been caused by that earthquake.
6 Next please.

7 Two areas that I didn't mention that we're
8 working on is we're getting involved in integrated
9 spent fuel management issues, looking at advanced fuel
10 cycles, very much a research area, and finally we're
11 looking at new plant deployment, both light water
12 reactors and we're interested in next generation
13 plants.

14 George, you asked about the risk-informed,
15 technology neutral area. We've done work there that
16 we hope will be used by the Department of Energy INL
17 and by NRC when they think about the licensing
18 approach for the NGNP and I believe that although they
19 probably won't use a risk-informed, technology
20 neutral, they won't wait for such an approach, in
21 order to move ahead with the NGNP, I think they're
22 going to use a lot of the principles from that so that
23 the method they're using would be applicable. Next
24 slide please.

25 MEMBER APOSTOLAKIS: So they are going to

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1 build the NGNP.

2 MR. GAERTNER: Pardon?

3 MEMBER APOSTOLAKIS: They will build the
4 NGNP?

5 MR. GAERTNER: EPRI, INL and DOE certainly
6 hope so and I believe NRC.

7 (Laughter.)

8 MEMBER CORRADINI: And a few members of
9 Congress, too.

10 MR. GAERTNER: The funding horizon is very
11 short as you know.

12 A number of you asked the question "Where
13 does EPRI fit in in the timing?"

14 MEMBER APOSTOLAKIS: With the
15 collaboration with the NRC, are you also collaborating
16 in the area of human reliability?

17 MR. GAERTNER: We are in a very -- We are
18 -- We have a users group, a human reliability users
19 group, and NRC participates in that and that
20 collaboration is done through that. But I don't think
21 we're doing anything, any active research.

22 MEMBER APOSTOLAKIS: I thought there was
23 going to be a benchmark exercise with EPRI
24 participation.

25 MEMBER BLEY: It's an international

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1 benchmark and I'm not sure. I know some of your
2 contractors are involved in it. Jeff has been --

3 MR. GAERTNER: It's part of the users
4 group.

5 MEMBER BLEY: Yes.

6 MR. GAERTNER: And we're both working on
7 it. But I would say we're working on it together.

8 MEMBER APOSTOLAKIS: Okay.

9 MR. GAERTNER: And finally, is where does
10 EPRI fit in within the timing and with the specific
11 tasks? We try to say -- As I've said many times and
12 it's very important is we try to stay very separate
13 from both the policy and the regulatory interface.
14 But we do provide input. Both we can provide
15 scientific and technical foundation that can go into
16 industry policy decisions. We provide technical
17 solutions while issues are being worked. And we
18 provide technical implementation guidelines that we
19 then hand off to the appropriate -- either to our
20 members or to INPO to support implementation.

21 MEMBER MAYNARD: What I'd like to do right
22 now, this is a longer segment schedule way than what
23 we normally have. We had a break scheduled for after
24 this. What I would like to do is move that break up
25 and take about a 15 minute break right now and then

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1 come back and finish up with Clair and with questions
2 and stuff. So we'll be back here at 10:25 a.m. Off
3 the record.

4 (Whereupon, at 10:12 a.m., the above-
5 entitled matter recessed and reconvened at 10:29 a.m.)

6 MEMBER MAYNARD: All right, now we'll
7 continue and Clair, INPO.

8 MR. GODDARD: Thank you, Mr. Maynard, and
9 good morning. I'm Clair Goddard, INPO's Vice
10 President of Systems, and unlike my colleagues, this
11 is my first time meeting with this committee to I'm
12 not sure the extent to which my prepared remarks will
13 hit the target for you, so I do trust that you'll ask
14 questions along the way.

15 MEMBER MAYNARD: Not a problem.

16 MR. GODDARD: I gathered that already.
17 The specific areas I plan to cover in this overview
18 are a little bit about INPO's history, organizational
19 structure, the relationships we have with the industry
20 and industry support organizations, our cornerstone
21 programs and lastly some of the issues that are high
22 on our list of things we're working on. Next slide,
23 please.

24 INPO operates from offices in Atlanta,
25 Georgia and our office facility also houses the

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1 National Academy for Nuclear Training, which operates
2 under the auspices of INPO, to integrate training
3 activities for all US nuclear utilities, and the
4 Atlanta Center of the World Association of Nuclear
5 Operator or WANO is also collated with INPO and I'll
6 talk more about them a little later. Next slide,
7 please.

8 I know it's no surprise to anybody in the
9 room that INPO was formed by the nuclear electric
10 utility industry in response to the accident at Three
11 Mile Island in 1979. Soon after that accident, Bill
12 Lee, who at the time was President of Duke Power, led
13 a national movement to bring together nuclear
14 operators in a cooperative organization to share best
15 practices and establish standards of excellence for
16 safety. US utilities with operating licenses or
17 construction permits for nuclear plants were involved
18 in INPO's development and soon after the organization
19 was founded, all such utilities became members of
20 INPO.

21 We were incorporated in October of 1979
22 and began operation in Atlanta in December of that
23 same year and Dennis Wilkinson, who was the commanding
24 officer of the first US nuclear powered submarine the
25 Nautilus, was also our first President. Next slide,

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1 please.

2 Of course, with the clarity of hindsight,
3 we know now that many of the fundamental problems that
4 contributed to TMI's accident were hardware,
5 procedures, training, and attitudes towards safety.
6 The Kemini Commission Report provided for the need to
7 set and policed excellence standards in the industry
8 and that would be self-set and policed, provide for
9 systematic gathering and sharing of operating
10 experience, have accredited training programs and
11 foster a dramatic change in the attitude toward
12 nuclear safety.

13 And in forming INPO, the nuclear industry
14 took an unusual step. The industry placed itself in
15 the role of overseeing INPO and its activities, while
16 at the same time endowing our organization with the
17 authority to bring pressure for change on individual
18 members. And it's a fairly unprecedented model, I
19 think it was at the time and still is, of self-
20 regulations with peer review by an industry. Next
21 slide.

22 Since its inception, INPO's mission has
23 remained the same and that's to promote the highest
24 levels of safety and reliability, to promote
25 excellence in the operation of nuclear electric

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1 generating plants, and in conducting our activities,
2 we consistently promote strong emphasis on safety
3 culture and conservative decision making in the
4 industry.

5 It's important to understand that INPO is
6 chartered as a 501(c)(3) non-profit corporation under
7 the Internal Revenue Service Tax Code. That
8 organizational charter specifically prohibits INPO
9 from advocating nuclear power or lobbying to shape
10 policy, so we are not in that domain. Next slide.

11 This slide shows our current membership
12 and participants and 27 utility members who currently
13 operate the 104 nuclear power plants are members of
14 INPO. In addition to that, we have a subset of co-
15 owners as associate members. Not all co-owners are
16 member of INPO but many are. In addition, we have and
17 international participant program which currently
18 includes 12 countries. I'm not going to name them all
19 but a couple were mentioned that are not full members
20 of INPO or of EPRI, excuse me, specifically, South
21 Korea and Taiwan are affiliated with us at INPO. And
22 in addition to that, we have a supplier participant
23 program which currently has 18 members and probably
24 not a surprise, as interest in the country grows for
25 building new plants, so has the interest in the

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1 supplier program.

2 In the last 12 months, we've added four
3 new supplier participants and we expect some more in
4 the near term. All of the US NSSS suppliers and major
5 AE firms are members of INPO.

6 MEMBER MAYNARD: Why are some of the
7 international or some of the foreign utilities part of
8 INPO? You know, they're part of WANO and they have
9 their own region over there. I'm just curious as to
10 why they --

11 MR. GODDARD: Well, that is a very good
12 question because all of these nations, their utilities
13 are also members of WANO. They have chose to have
14 this relationship with INPO and I should say they
15 chose to retain it, because INPO's international
16 program preceded the formation of WANO. And they have
17 chose to stay with INPO because it's their belief that
18 they get a greater level of access to industry
19 guidelines and standards that are beyond what they get
20 through WANO.

21 MEMBER ARMIJO: Are these utilities still
22 subject to all the rules and authority of INPO? I
23 mean, do they -- are they equivalent to members, US
24 members as far as their responsibilities?

25 MR. GODDARD: They are not equivalent to

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1 members in that they do not have representation on our
2 Board of Directors, nor do we have the same level of
3 authority to impose sanctions that we do with our
4 domestic members.

5 MEMBER MAYNARD: You do peer reviews of
6 them, but I don't know that you do an assessment.

7 MR. GODDARD: Well, in fact, we have begun
8 and are now doing assessments for all of the WANO
9 Atlanta center plants for which we do peer reviews.

10 MR. GAERTNER: But that's a WANO effort,
11 not an INPO.

12 MR. GODDARD: That is through WANO but it
13 is different because WANO does not do assessments
14 worldwide in conjunction with peer reviews, so that is
15 a very different part of this. I hesitate, too, Mr.
16 Maynard, because some of these international plants do
17 not get peer reviews through the WANO Atlanta Center,
18 so therefore, they don't get an assessment. One
19 example of that would be the utilities in Spain. Next
20 slide, please.

21 This bubble chart, I guess, shows our
22 relationships with a variety of organizations. A
23 number of these have already been discussed so I'm not
24 going to go into detail. We've talked about members
25 and associate members, but a couple things worth

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1 noting and reiterating what has already been said.
2 INPO has a very strong relationship with Electric
3 Power Research Institute and the Nuclear Energy
4 Institute and also with the industry's insurance
5 company, Nuclear Electric Insurance, Limited. Those
6 relationships are formalized and very healthy. We
7 also have a relationship with the Department of Energy
8 and obviously, we have a very important relationship
9 with the NRC which we view as an independent
10 relationship, one that is very complimentary.

11 And the details of our relationship are
12 spelled out in our company's institutional plan and in
13 the Memorandum of Understanding that we have with the
14 agency.

15 MEMBER SIEBER: Does NEIL still have
16 access to INPO plant evaluations?

17 MR. GODDARD: Yes, they do.

18 MEMBER SIEBER: That's the tool.

19 MR. GODDARD: That's correct, and they
20 still use those results to help set their premiums.

21 MEMBER SIEBER: Okay.

22 MR. GODDARD: Question?

23 MEMBER MAYNARD: No, no, that helped me in
24 understanding.

25 MR. GODDARD: Okay.

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1 MEMBER SIEBER: It's an important feature.

2 MR. GODDARD: And this I Chart is our INPO
3 Organization and in many ways we are similar to a
4 typical US company. We have a Board of Directors.
5 Our Board is a representative board. It's not all of
6 our members and it is elected by the full membership
7 annually. Our Chairman is Lou Hay, Chairman and Chief
8 Executive Officer of FPL Group, Inc. And the Board
9 elects and manages the President and Chief Executive
10 Officer, who is Jim Ellis and Jim has been in that
11 role since May of 2005.

12 Because we are kind of an internal Board,
13 we don't have an outside perspective on it, the
14 founding fathers of INPO established an advisory
15 council. It's currently nine to 15 professionals from
16 outside INPO's membership. And they meet periodically
17 to review our activities and provide advice on broad
18 organizational topics and methods and they do provide
19 input to our Board of Directors. The Advisory Council
20 is composed of distinguished professionals from areas
21 related to our activities; education, science,
22 engineering, business executives, as well as experts
23 in organizational effectiveness, human relations and
24 utility finance.

25 I'm not going to go through all of our

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1 divisions, but I would just summarize by saying out
2 divisions are grouped into our four key functions;
3 industry evaluations, industry performance
4 improvement, industry training and accreditation and
5 then lastly, our support services organization. I'm
6 going to talk in some detail about our four
7 cornerstone programs a little later. Next slide.

8 I'm not going to read these but just to
9 mention, a few years ago, we sought to define the
10 essence of what makes INPO unique and in doing so,
11 established these areas as our core values. Next
12 slide.

13 Okay, these are our four cornerstone
14 programs. They have been such since the company was
15 founded and they're the means by which we promote our
16 mission which is highest levels of safety and
17 reliability and excellence. I'm going to give you
18 just a brief overview of each one. Central to
19 everything we do is a strong plant evaluation process.
20 And plant evaluations today are accepted as part of
21 conducting normal plant operations. I think every
22 single power plant, nuclear utility out there has INPO
23 plant evaluation on their high level calendar of
24 events.

25 Each plant in the US nuclear industry

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1 receives a valuation about every 24 months and they're
2 performance oriented, emphasizing both results that
3 the plant staff achieves and the behaviors and
4 organizational factors that are important to drive the
5 current performance that we see and that may be
6 predictive of either sustaining excellence or in
7 perhaps predicting performance decline in the future.

8 Each plant evaluation is conducted by a
9 team of qualified experiences evaluators and their
10 teams, in general, I'll say are composed of about one-
11 third full time INPO employees, about one-third of
12 employees who are on loan to INPO from our membership
13 at any one time and about one-third of people who step
14 out of their current job for a utility and join the
15 team as what we call an industry peer to bring
16 contemporaneous experience in their areas to the
17 evaluation team.

18 And in addition to that, the teams also
19 have host utility peer evaluators and every team has
20 an industry executive to serve as an advisor to the
21 team. The scope of every evaluation includes a
22 detailed look at traditional functional categories,
23 including operations and maintenance, engineering and
24 these typically correspond to the nuclear station
25 organization. But in addition and probably more

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1 importantly, the teams also evaluate cross-functional
2 areas and these are processes and programs and in some
3 cases, just behaviors that cross organizational
4 boundaries and address -- and these looks address the
5 organizational integration and interfaces including
6 areas such as safety culture, plant operational focus,
7 configuration management, work management, equipment
8 reliability and organizational effectiveness. And
9 that last part is, quite frankly, we evaluate how well
10 the management team is leading the organization.

11 MEMBER SIEBER: Do you still make a
12 distinction between plant evaluations and corporate
13 evaluations?

14 MR. GODDARD: Yes, we do. Every plant --
15 yes, that's a good question because I don't have that
16 in my remarks but we do, as I said, conduct the plant
17 site evaluation every two years about. In addition to
18 that, we have performed corporate evaluations for most
19 of our history and the frequency with which we do
20 those has cycled a bit and in our early years, we did
21 quite a number and then they tailed off as the
22 industry consolidated and we had fewer members.

23 In the last few months, in fact, our Board
24 of Directors has empowered us to begin routinely
25 conducting corporate evaluations at every utility and

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1 to do them periodically.

2 MEMBER SIEBER: If you go to a company
3 that operates 10 nuclear plants and you find the same
4 issues in several of the plants, that becomes a
5 corporate issue. As I recall, they used to increase
6 the frequency in which to do evaluations of corporate.
7 Is that still correct?

8 MR. GODDARD: That's still true. We
9 always have the ability to do what we call a for cause
10 plant evaluation at any time or a corporate evaluation
11 and the corporate evaluations have grown to have some
12 acceptance, and I think they do add value for the
13 reasons --

14 MEMBER SIEBER: I think you could get to
15 the root cause of issues but sometimes these issues
16 originate in the corporate offices. There's nothing
17 the plant can do about it other than say, "Yes, sir".

18 MEMBER APOSTOLAKIS: One example of an
19 undesirable safety culture was Davis-Besse, and I'm
20 wondering why your evaluations didn't catch anything
21 there. Have you guys done a self-assessment or --

22 MR. GODDARD: Oh, absolutely, and the
23 question you asked is one that we've asked ourselves
24 much as the NRC asked itself and we did a very
25 detailed review of our activities associated to Davis-

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1 Besse. We brought in outsiders to participate on that
2 look and we developed a very detailed action plan to
3 strengthen our cornerstone so that we could minimize
4 the possibility of such an event occurring again
5 undetected. And that included things like being more
6 systematic in how we review or follow up on industry
7 operating experience and a number of other things.

8 We actually had sixteen action items that
9 I couldn't name off the top of my head now.

10 MEMBER APOSTOLAKIS: I remember in the
11 early announcements from INPO some senior person said,
12 "The reason why we didn't catch it was because we did
13 not connect to dots". What dots were these?

14 MR. GODDARD: I can't answer the question
15 because I don't know who you're speaking of or --

16 MEMBER APOSTOLAKIS: Oh, he was a vice
17 president.

18 MEMBER SIEBER: For those of you who were
19 in the military, you can go to a plant and compare it
20 to a group who are good at soldiering where all the
21 people know what to say and for a moment they can make
22 the plant whatever, look pretty good and the staff and
23 all the other stuff. Some people are better at that
24 than others. Okay, so you could get a pretty decent
25 SALP score back in the days when they did that and

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1 INPO score, marching through that process and still
2 have defects in the plant.

3 You actually have to either find people
4 who know where those defects are and question them or
5 see them yourself in order to be able to determine
6 what the true condition of the plant really is. But
7 most of the time, the condition of the plant reflects
8 itself through the attitude of the workforce.

9 MEMBER MAYNARD: On the other side of the
10 coin in defense if INPO in other areas, there have
11 been a number of cases where INPO has taken action and
12 interacted with the Board of Directors of companies
13 with things that are identified. You don't always
14 hear about those actions and, you know, most of the
15 times, that's something that even the industry doesn't
16 always know what's going on but I think that they
17 learned some things from Davis-Besse but I don't think
18 that's consistent with their performance in other
19 areas.

20 MR. GODDARD: Well, of course, you can't
21 prove the negative. I mean, we can't prove the things
22 that we've prevented or the interactions we've had
23 that may have turned performance around before things
24 declined. But the point you make is a good one and we
25 do have some interactions with Boards of Directors.

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1 Sometimes those are requested where a Board will ask
2 INPO's Chief Executive Officer to come provide a brief
3 on how we view their nuclear operation and in some
4 cases, we force that interaction, as you suggest.

5 The bottom line on evaluations, whether
6 they are corporate or a plant is that they are very
7 focused on the things not done to excellence and
8 that's really the principal reason why our plant
9 evaluation reports are not available for public
10 release.

11 MEMBER APOSTOLAKIS: And what is the
12 standard of excellence?

13 MR. GODDARD: The standard of excellence
14 is defined by the industry and in some cases, with
15 input from EPRI, from NEI.

16 MEMBER APOSTOLAKIS: So they are realistic
17 standards then.

18 MR. GODDARD: Oh, yes, yes. We have a
19 book we call "The Performance Objectives and
20 Criteria". Those are the standards by which we
21 conduct plant evaluations and as our Chief Executive
22 Officer is fond of saying, it's an open book test
23 because everybody knows the criteria that they're
24 going to be graded to but the bottom line is that
25 those standards of excellence are very difficult to

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1 achieve and that's by design because we always the
2 industry to be striving to get better.

3 MEMBER MAYNARD: What's excellent today
4 may not be excellent tomorrow. It's a --

5 MR. GODDARD: Those standards are not
6 static. They have been revised a number of times
7 throughout our history.

8 MEMBER APOSTOLAKIS: Other industries,
9 particularly the chemical industry, they like the
10 concept of continuous improvement. Do we have
11 anything like that? From our side here, I mean, to
12 meet the regulations, that's good enough but from your
13 side, is there such a thing as a continuous
14 improvement principle?

15 MR. GODDARD: Absolutely. That's what
16 we're all about is really striving to analyze
17 continuous improvement in the industry through peer
18 review and emulation, through sharing of best
19 practices, and operating experience. And we actually,
20 part of this evaluation, I didn't mention it in the
21 overview I gave but a specific cross-functional area
22 we evaluate at every plant site is performance
23 improvement; how is that plant organization using it's
24 corrective action program, its self-assessment
25 activities, its benchmarking activities to improve its

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1 own performance?

2 MEMBER SIEBER: If you would look, George,
3 at the evaluations done in the 1980s, if you did
4 fairly well on one early in the 1980s and didn't
5 change your method of operation to improve, the next
6 evaluation you got was not good. And I also would
7 say that I think for every issue or bad culture that
8 INPO has missed, there have been five to 10 that
9 they've caught before it became a problem.

10 MEMBER MAYNARD: I think that was a good
11 question. I think it's really good that INPO is here
12 because most of our interactions typically with the
13 industry is on regulatory issues and the industry
14 wants bare minimum requirements.

15 MEMBER APOSTOLAKIS: Yeah.

16 MEMBER MAYNARD: But that doesn't mean
17 that they want to operate to bare minimum
18 requirements. That's where the INPO, the excellence
19 part and the continuous improvement come in.

20 MEMBER SIEBER: It actually turns out to
21 be cheaper to run a plant for excellence than it is to
22 run it --

23 MEMBER APOSTOLAKIS: In the long run, in
24 the long run.

25 MEMBER SIEBER: Yeah, right. It may take

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1 awhile to get there.

2 MR. GODDARD: And the last thing I'll say
3 about evaluations unless there are more questions is
4 that we do follow up on these plant evaluations. So
5 there is an accountability to the industry for every
6 organization we evaluate to use that report to improve
7 performance which is also in the continuous
8 improvement.

9 We come back two years later and if we see
10 the same problems, we call that out as a related area
11 for improvement and it has a higher significance when
12 we then, you know, provide an assessment of the plant
13 and then report to the Chief Executive Officer. Every
14 plant evaluation culminates with an oral report to the
15 utility's Chief Executive on the results of the plant
16 evaluation and a numerical assessment.

17 MEMBER APOSTOLAKIS: But one thing, I
18 think that every major organization has to battle
19 against is routine operations, maybe boredom. You
20 know, we are doing this many, many times. How does
21 one fight that? I mean, it's easy to talk about
22 safety culture and questioning attitude and always
23 being alert, but I don't know that one can do that,
24 including myself, you know, for a very long time.
25 Now, I'm not reviewed by INPO but --

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1 MEMBER CORRADINI: Thank God.

2 (Laughter)

3 MEMBER APOSTOLAKIS: I asked for that. So
4 in your experience, I'm just curious, how difficult is
5 it to fight that kind of thing? And the natural
6 tendency of people to say, "Oh, hell, we've been doing
7 this for such a long time, I know how to do that in my
8 sleep", and then, of course, something happens.

9 MR. GODDARD: Yeah, we agree it's very
10 difficult and in fact, we think it's probably one of
11 our greatest challenges when we conduct a plant
12 evaluation is when it's done in a plant that's achieve
13 excellence for a long period of time because sometimes
14 the issues are more subtle and it's more difficult to
15 communicate a need for change to the organization.
16 That's something we struggle with, too, and are always
17 on the lookout for. We've done very detailed analysis
18 of cases where plants have operated well for many
19 years and then declined and a couple of things that
20 that revealed is that, first of all, leadership is
21 central to maintaining and sustaining excellence, and
22 typically either changes in leadership or just a
23 change in focus of leadership is the first thing that
24 will cause a plant to begin to decline. So we're --
25 we pay a lot of attention to that.

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1 MEMBER APOSTOLAKIS: Now, as you know, as
2 you know, this agency expanded the reactor oversight
3 process to include some aspects, I guess, of safety
4 culture and it's performance based. Now, I'm sure
5 your approach is also performance based but you must
6 be going beyond that in the sense that are you
7 interviewing people or doing things? I mean --

8 MR. GODDARD: We go beyond performance
9 base. We really look hard at behaviors and the
10 attitudes of the people. We do conduct interviews.
11 We conduct a survey, a written survey, so we get a lot
12 of input. I'm not going to tell you that we have that
13 area fully understood. I mean, we continue to work on
14 it.

15 MEMBER APOSTOLAKIS: No, I understand,
16 yeah.

17 MR. GODDARD: But yes, we go beyond the
18 performance base.

19 MEMBER APOSTOLAKIS: Because one thing
20 that's always intriguing me is this questioning
21 attitude that the IAEA has made a central part of
22 safety culture and I'm really wondering how one can
23 convince oneself that there is a questioning attitude.
24 I don't know that.

25 MEMBER SIEBER: The Navy once did a study

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1 that showed that the significant factor in performance
2 of ships was who the captain was and the crew could be
3 any old crew, the ship could be any old ship but a
4 good ship had a great captain.

5 MR. GODDARD: I think that's consistent
6 with what our study showed. Okay, if I could, yeah,
7 move on to training and accreditation. Our training
8 and accreditation cornerstone involves technical and
9 operational education of the nuclear working force.
10 Accreditation of utility training programs is an
11 important part of the program and it's designed to
12 identify strengths and weaknesses in training programs
13 and help in making needed improvements. The process
14 includes a self-evaluation by our members with
15 assistance provided by the INPO staff, an onsite
16 evaluation by teams of INPO and industry personnel and
17 then lastly, a review of the accreditation team visit
18 results by an independent national nuclear accrediting
19 board composed of eminent scholars and executives.

20 I emphasize independent because while the
21 plant evaluation results are decided by INPO's
22 executive team at an assessment grade determined by
23 our Chief Executive Officer, accreditation is -- the
24 accrediting board does not have an INPO staff member
25 sitting on the board. So it is completely independent

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1 for us and for the industry. If training programs
2 meet the Board's standards, then the Board will award
3 accreditation or renew accreditation. When I say
4 establish it or award it, because we're coming up with
5 new plants where we're going to be looking at
6 accrediting some new training programs for the first
7 time in many years.

8 And if there are problems identified, the
9 Board can place training programs on probation or in
10 an extreme case, withdraw accreditation. And
11 accreditation is maintained on an ongoing basis and
12 it's formally reviewed primarily in two areas, for
13 operator training and then technical training programs
14 on four-year cycles. And those cycles are typically
15 offset by two years. So we're looking at half the
16 training programs at every plant site every two years
17 with the thought being that if problems are evident in
18 one area, they're probably evident in the other one,
19 too.

20 In addition, we conduct a variety of
21 courses and seminars to help personnel better manage
22 nuclear technology, more effectively address
23 leadership challenges and improve personnel
24 performance. We don't provide technical training at
25 INPO. The courses we provide are really focused more

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1 on the leadership and sharing of best practices. Our
2 courses are aimed at every level from Chief Executive
3 Officer down to site level executives, to plant
4 managers and down to front line supervisors. And we
5 run many seminars annually.

6 MEMBER ABDEL-KHALIK: Who defines that
7 standards for accreditation?

8 MR. GODDARD: They are also established
9 through the industry and documented in a standards for
10 accreditation of nuclear power plant training
11 programs.

12 MEMBER ABDEL-KHALIK: So it's not the
13 Board.

14 MR. GODDARD: No.

15 MEMBER MAYNARD: But the accreditation in
16 the beginning, I believe there's some people from
17 academia that are part of the advisory committee and
18 accreditation is more than just the industry deciding
19 what it wants to do.

20 MR. GODDARD: Right.

21 MEMBER MAYNARD: It fits in with the
22 process similar to a university program being
23 accredited but it is geared primarily towards what's
24 needed for the nuclear power plant.

25 MR. GODDARD: That's true.

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1 MEMBER MAYNARD: Many of the same
2 attributes are looked at in either case.

3 MEMBER SIEBER: It seems to me every
4 accrediting board have outside people.

5 MR. GODDARD: Oh, every -- and since
6 there's interest, I'll just tell you, and Dr.
7 Corradini is on our accrediting Board, so he probably
8 has a better view of this than I do. I'm not --

9 MEMBER CORRADINI: I was hoping you
10 wouldn't say that because I'd get it from him because
11 I'm sure he's participated in more of them than I
12 have which is my experience when I was in the utility
13 industry was a little different, much less fun.

14 MR. GODDARD: An accrediting Board is
15 composed of five individuals. There is a Chairman,
16 who is typically an industry senior executive. There
17 is another industry senior executive. Now the rule is
18 that those two people cannot be from the utility whose
19 plant -- whose programs are up for review. Okay, then
20 there is a member of the Board who is nominated by the
21 Nuclear Regulatory Commission and the rule there is
22 that they cannot be a current NRC employee. So
23 typically, we have people who are nominated by the NRC
24 after they retire.

25 In fact, Ellis Merschoff was just

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1 nominated and will join the Board at the next
2 turnover.

3 MEMBER CORRADINI: You have the last three
4 EDOS.

5 MR. GODDARD: Yes, yeah, Joe Callen is a
6 member of the Board.

7 MEMBER SIEBER: That was not always the
8 case.

9 MR. GODDARD: Yeah, it is now. I can't
10 speak to the distant --

11 MEMBER SIEBER: Years ago it could be --

12 MR. GODDARD: We also have a member from
13 academia and a member from industries outside of
14 nuclear power and in the past we've had companies like
15 Airbus, Motorola, Texas Instruments represented. And
16 the Board makes its decision by majority vote. So a
17 three to two vote will -- could renew an accreditation
18 or put it on probation. So the key thing to take out
19 of this is, even though the industry has two
20 representatives, it -- the industry does not have a
21 majority. Any questions? Okay. Any other questions
22 on training or accreditation?

23 Okay, moving to analysis, this is where
24 INPO reviews and analyzes operating experience from
25 domestic and non-US nuclear plants and this program is

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1 one where we are receiving constantly voluntary
2 reports made by our members on events that occur at
3 the plant site. In a typical year we'll get anywhere
4 from 2500 to 3,000 separate OE entries. That's what
5 we call them, and we analyze them to identify and
6 communicate trends, themes, lessons learned of
7 importance to the industry with the goal of preventing
8 similar events from reoccurring at other plants.

9 We share this information primarily
10 through out website and through a nuclear network
11 which is a worldwide internet based communications
12 system, so it's used by our members and all of our
13 participants, including the international
14 participants. Information most significant to safety
15 is typically published in what we call significant
16 operating experience reports or SOERs. And our
17 members are expected to, on receipt of those
18 documents, review the recommendations and implement
19 actions in the recommendations to prevent those
20 significant events from reoccurring. And we follow up
21 on those specifically through the plant evaluations.

22 And if we find recommendations that are
23 not being implemented properly, we will call that out
24 as an area of improvement. We also provide what we
25 call just in time operating experience in a format

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1 that's designed to be accessible to plant personnel,
2 working level people and used in real time to help
3 them prepare for and perform specific tasks. And
4 that's most often used in pre-job briefings.

5 Our fourth and final cornerstone is the
6 assistance area. And between evaluations, we monitor
7 performance of our member stations to identify areas
8 where assistance can be used to improve performance or
9 respond to indications that there may be a decline
10 taking place. And we also will provide at the request
11 of our members, visits to plant sites by INPO and
12 industry personnel from -- to look at specific
13 requests.

14 MEMBER SIEBER: Before you turn from that
15 slide, those four areas are in turn evaluated by the
16 evaluation group that are typically composed of
17 industry representatives, Bob Seal (phonetic) who many
18 of you remember was on the one that I was team leader
19 for, Gary Yates, (phonetic) and so INFO subjects
20 itself to an evaluation process so that these programs
21 work. I guess the other person on my team was a Navy
22 guy and so they go after the leadership experience to
23 look at the overall programs to make sure the elements
24 are there and the people are following them. I think
25 that's a tribute to the process because they subject

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1 themselves to the process that everyone else is
2 subjected to.

3 MEMBER MAYNARD: We have a little over 10
4 minutes.

5 MR. GODDARD: Yeah, I'll come to a close
6 here. Assistance also has the lead at INPO for
7 conducting workshops, seminars and working meetings
8 similar to what NEI and EPRI already described so I
9 won't go into detail. Next slide, please.

10 I mentioned WANO and that INPO serves as
11 the home for the Atlanta Center of WANO and we think
12 this is one of our key relationships and I wanted to
13 just give you a little more detail. WANO was formed
14 by the International Nuclear Committee or Community as
15 a result of the Chernobyl accident and WANO's mission
16 is very similar to INPO's and it's to maximize the
17 safety and reliability of the operation of nuclear
18 power plants through the exchange of information and
19 encouraging communication, comparison and emulation
20 among its members.

21 It operates through four regional centers.
22 They're in Atlanta, Paris, Moscow and Tokyo and a
23 coordinating center which is in London. And all
24 operating nuclear power plants worldwide are members
25 of WANO. INPO represents the US nuclear industry as

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1 WANO's -- in WANO activities and as a member of WANO.
2 Other WANO Atlanta Center members are located in
3 Brazil, Canada, India, Mexico, Pakistan, Romania and
4 South Africa. So you can see it's a pretty diverse
5 membership. And those countries choose to belong to
6 us primarily because of the similarities in
7 technology.

8 I mean, Pakistan has a CANDU Reactor which
9 is a wider part of our center. We also INPO provides
10 WANO AC resources to support it's day-to-day
11 activities and we provide access to our computer
12 servers for WANO, so among other things.

13 But INPO through WANO and through our
14 international relationships through the international
15 program I mentioned, and through some more detailed
16 activities with organizations such as the Japanese
17 Nuclear Technology Institute actually directly
18 interacts with about three-quarters of the world's 440
19 plus nuclear plants. So we have quite a reach for an
20 organization of about 350 people.

21 MEMBER ABDEL-KHALIK: Are there any export
22 controls constraints imposed on you through
23 participation of countries that are not -- who are not
24 signatories of the NPT?

25 MR. GODDARD: I don't know that I can

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1 answer that question completely. You know, we --
2 because of the nature of what we do which is focused
3 on safety and reliability of nuclear power plant
4 operations, we really don't have access to technology
5 which could be used to proliferate nuclear weapons.
6 We do, you know, sometimes deal with some difficulties
7 gaining access for people into the US for some of our
8 -- some of our seminars, but that has not been
9 something we haven't been able to work through the
10 State Department to resolve.

11 MEMBER MAYNARD: I don't know the details.
12 At the beginning of WANO there was -- it took a lot of
13 interaction and a lot of work with the State
14 Department and the Justice Department and everybody
15 else to find a mechanism to be able to do as much as
16 they can. That was a difficult part to get over, but
17 I don't know the details of what can or can't be done
18 right now.

19 MR. GODDARD: I could look into that and
20 get back to the committee if that would be a desire.
21 I can't go much farther in that question.

22 MEMBER ABDEL-KHALIK: But I know that
23 universities are now struggling with that issue.

24 MR. GODDARD: If I could, I'll move onto
25 the next slide which is four INPO focus areas. I

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1 think you've heard about every one of them some in the
2 other presentations today. The first is fuel. That
3 was a question early on and I don't want to repeat
4 what's already been said, but we do collect a lot of
5 industry performance data and fuel or -- and
6 performance indicator data and fuel is an area that we
7 have grown more interested in because many plants are
8 operating with albeit minor, they are fuel cladding
9 failures.

10 And roughly a quarter of the plants today
11 are operating with some fuel defects. So it's -- you
12 know, because of its importance in one of the three
13 barriers to release fission products to the environs,
14 and the fact that it's the only area of significance
15 where the industry has a negative performance trend
16 over the last 10 years, we have really raised the
17 importance of this issue in the industry.

18 We changed our goal for fuel performance.
19 It has historically been to strive for zero fuel
20 defects. A subtle but important change in the 2010
21 goal is that we will achieve zero fuel failures. And
22 INPO has taken a leadership role here with great
23 support from the Electric Power Research Institute,
24 NEI, and probably more importantly with all of the
25 fuel vendors to address this issue. So we have put

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1 together some pretty detailed guidelines and through
2 our evaluation process, we've begun to review
3 systematically how plants are implementing those
4 guidelines to achieve zero fuel failures at their
5 plants, or if they already are achieving that, to
6 insure that they will sustain that level of
7 performance.

8 Next in the switch yard, grid and
9 transformer area, the blackout of 2003, obviously,
10 raised a lot of attention in this area but actually
11 since 2000, the industry has experienced an increasing
12 trend in a number of events related to these systems
13 and components and several, as you know, have been
14 consequential. So INPO, working with the industry,
15 with NEI and EPRI, became more aggressive in our
16 efforts to insure reliability of offsite power and to
17 minimize the operational risk. And we've seen a
18 number of contributors to the problems, including
19 aging, power uprates, equipment maintenance
20 shortfalls, and quite frankly, the ineffectiveness of
21 communications between the nuclear plant operator and
22 the grid operator, which has kind of grown more
23 significant with the change in the industry where in
24 many cases the plant no longer owns its switch yard
25 but has to interface with a different owner.

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1 So we started conducting review visits in
2 this area in 2004 and it remains an ongoing initiative
3 and we expect to complete a visit to every plant site
4 by the end of 2008.

5 MEMBER BLEY: I'm just a little curious.
6 If part of the problem is that the switch equipment is
7 now owned and operated by other organizations, they're
8 not part of INPO, so you don't have the same leverage
9 we would assume; is that true?

10 MR. GODDARD: That's accurate and I guess
11 it's very similar to the NRC. I mean, we work through
12 our member to drive excellence in this area. What we
13 expect of our members is that they will establish
14 detailed coordination plans with their grid and switch
15 yard operator to make sure that they're meeting
16 established guidelines and standards for performance
17 in these areas.

18 MEMBER CORRADINI: So can I ask a question
19 here? It would seem to me that a task force would be
20 or has been formed that would feed back to EPRI which
21 is the -- I would assume in some sense looking over
22 research and higher reliability for the grid, where is
23 the feedback into work in terms of improved
24 reliability of the grid or do you have to go through
25 essentially the transmission companies which I assume

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1 are EPRI members? Or is there a different approach to
2 that?

3 MR. MARION: This is Alex Marion again.
4 Immediately after the 2003 blackout, we put a team
5 together that involved INPO, NEI, of course, the
6 utilities, but more importantly we included North
7 American Electric Reliability Council. And NERC has
8 had extensive interactions with INPO in trying to
9 model some of the INPO programs so that they can deal
10 with the transmission organizations and other
11 stakeholders who were responsible for reliable
12 operation of power transmission system.

13 MEMBER CORRADINI: Just for the sake of my
14 understanding, is NERC the equivalent of INPO relative
15 to the transmission grid or is it more of -- it's not
16 regulatory.

17 MR. MARION: Well, it is now.

18 MEMBER CORRADINI: It is now?

19 MR. MARION: Yeah, with the Energy Policy
20 Act of 2005, a --

21 MEMBER CORRADINI: Excuse me.

22 MR. MARION: -- task was given to NERC to
23 develop standards and implement the standards and
24 enforce them. We have responsibilities with NERC and
25 we're closely coordinated with them.

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1 MEMBER CORRADINI: I see, all right, thank
2 you.

3 MEMBER SIEBER: That varies across the
4 country. You know, you have five or six reliability
5 groups. One of the best ones is right around here.

6 MEMBER CORRADINI: We are kind of running
7 close on time. We need to --

8 MEMBER SIEBER: There's communications,
9 analytical tools and so forth.

10 MEMBER CORRADINI: It's my job to crack
11 the whip here.

12 MR. GODDARD: This is my last slide. I'm
13 not going to talk about emergency preparedness and
14 knowledge retention and detail. I'll just say that
15 when INPO was founded, emergency preparedness was a
16 very important element of our organizational structure
17 and that over time, as the industry improved in that
18 area, we got out of that business. Primarily through
19 working with NEI and input from NEI, we in 2004 re-
20 established this as an organizational element for us
21 and we're now looking at every plant again in that
22 area.

23 And knowledge retention, you know, we,
24 again, are coordinating with NEI, EPRI, to begin to
25 deal with the large loss of personnel, this industry

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1 has begun to see and will see over the next five to 10
2 years. I think that's my last slide, so unless there
3 are questions --

4 MEMBER MAYNARD: One thing that I think
5 was mentioned in couple of presentations but I think
6 it's important to talk just a bit more about, and
7 that's the loaned employees because INPO has a number
8 of loaned employees. Also INPO has reversed on these
9 where INPO employees will go work at a utility for
10 awhile to stay current which I think is important to
11 the overall process. And many of the INPO
12 individuals, full time employees, came out of the
13 industry anyway. Yourself was at Pilgrim there for a
14 number of years.

15 To a lesser degree but to the same extent,
16 NEI also has some loaned employees and provides some
17 mix there. The other thing I want to just point out,
18 the peers for the evaluations, there's a couple of
19 benefits to that. First of all, you do get some
20 additional looks by real time people responsible for
21 that on the team looking at it, but a side benefit
22 that everybody has really recognized is that those
23 people take back a lot of things to their utility that
24 helps themselves a lot more too, so it's a real good
25 process.

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1 The last thing is evaluations. A retiring
2 chief nuclear officer doesn't count days, he normally
3 counts the number of E&A visits he has left.

4 (Laughter)

5 MEMBER MAYNARD: Any other questions here
6 before we wrap it up? Well, I'd like to -- I really
7 appreciate you coming and spending the time and being
8 able to do it in an environment where we're not
9 talking about a given specific issue that we may be at
10 loggerheads on or whatever. So I really appreciate
11 you time in coming. With that, I'll turn it back over
12 to you, Mr. Chairman.

13 CHAIRMAN SHACK: Well, thank you again,
14 very much. I'd like to just keep going with P&P if we
15 can. That will give us incentive to get through it
16 quickly because everybody will want lunch and a break.

17 (Whereupon, at 11:21 a.m. the above-
18 entitled matter concluded.)
19
20
21
22
23
24
25

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CERTIFICATE

This is to certify that the attached proceedings
before the United States Nuclear Regulatory Commission
in the matter of:

Name of Proceeding: Advisory Committee on
Reactor Safeguards

Docket Number: n/a

Location: Rockville, MD

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



Katherine Sykora
Official Reporter
Neal R. Gross & Co., Inc.

Nuclear Energy Institute: Mission, Goals and Issues

Anthony R. Pietrangelo

Vice President, Regulatory Affairs

October 5, 2007



Discussion Topics

- **Organization and Governance**
- **Mission**
- **How NEI accomplishes the Mission**
- **Business Plan Goals and Activities**
- **NEI integration with other industry organizations**

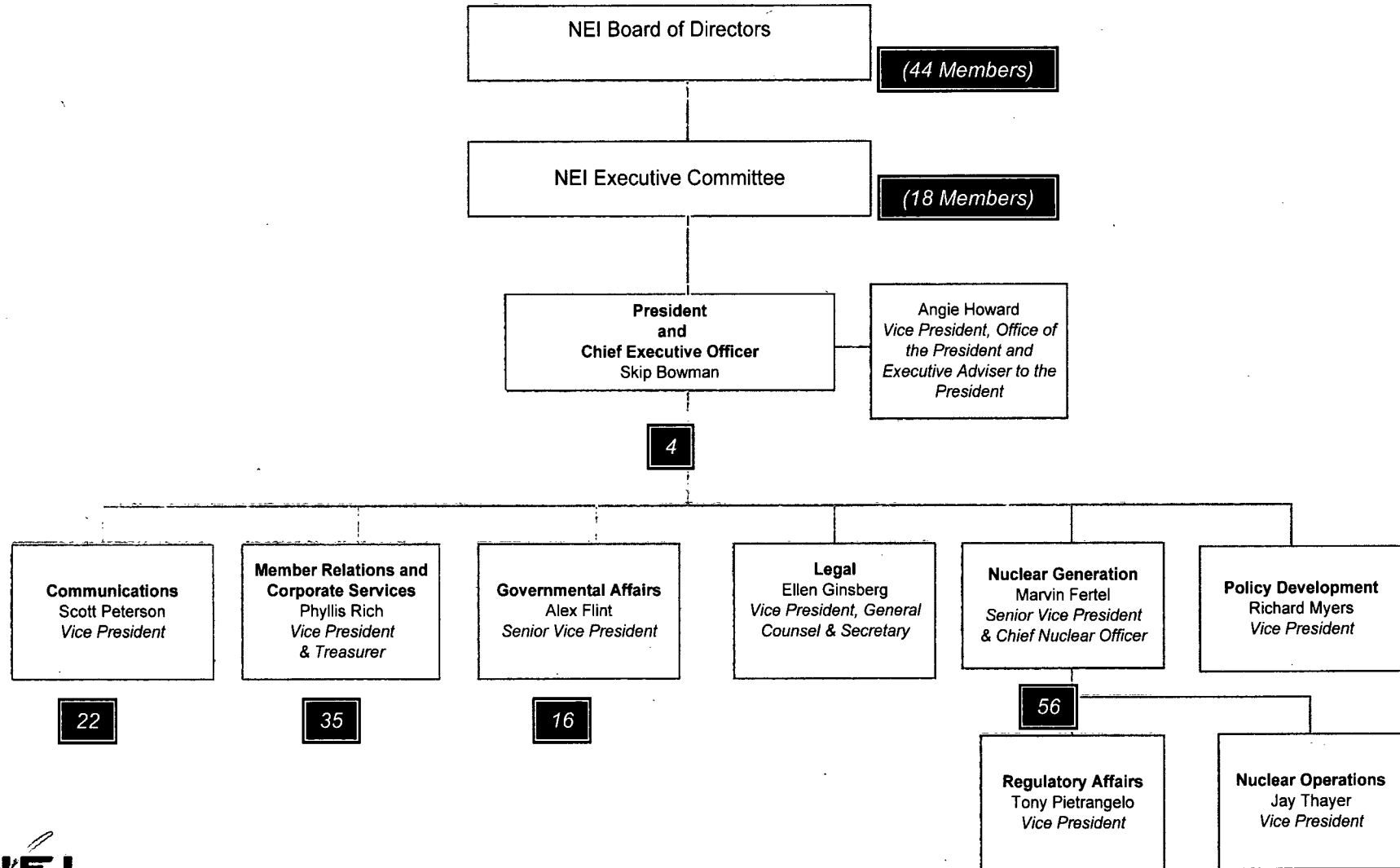
NEI's Members

284 Member Companies

- **All U.S. nuclear utilities**
- **International nuclear utilities**
- **NSSS and major component vendors**
- **Architect/engineering firms**
- **Radiopharmaceutical manufacturers**
- **Fuel suppliers**
- **Universities**
- **Labor unions**
- **Law firms**



NEI Organization



NEI Committees, Working Groups and Task Forces

- **Advisory Committees**
- **Standing Committees**
- **Executive Task Forces**
- **Working Groups**
- **Issue Task Forces**

Nuclear Strategic Issues Advisory Committee (NSIAC)

- **Chairman – Brew Barron (Duke CNO)**
- **Full Committee**
 - CNOs of each operating utility and similar executive-level individuals of INPO, major vendors and architect engineers
- **Steering Committee**
 - Operating utility CNOs
- **Formal Initiatives**
 - 80% vote of utility CNOs on an issue commits the industry



Most Recent Formal Initiatives

- **Management of Materials Issues**
- **Standardized Security Plans**
- **Industry Composite Adversary Force To Support NRC Force-on-force Exercises**
- **Portable Qualifications**
- **Cyber Security**
- **Groundwater Protection**
- **Fuel Reliability**
- **Heavy Load Lifts**

Topics Covered in 8/30 NSIAC

- **Materials Initiative**
- **Risk-Informed Regulation**
- **Security**
- **Seismic Issues**
- **Used Nuclear Fuel**
- **Fuel Supply**
- **Workforce Issues**
- **NEI Litigation**
- **FirstEnergy-NEIL Lessons Learned**
- **Reactor Oversight Process**
- **GSI 191 PWR Sumps**
- **Regulatory Issues**
- **INES Reporting System**
- **GL on Medium Voltage Underground Power Cable**
- **Digital I&C**
- **GL on Gas Intrusion in ECCS, DHR & CS**
- **Fire Protection/NFPA-805**

NEI Mission

- **Ensure the formation of policies that promote beneficial uses of nuclear energy and technologies**
- **Provide a forum to resolve technical, regulatory and business issues for the nuclear business**



Accomplishing the Mission

- **Policy direction on critical issues**
- **A unified nuclear energy industry approach to address and resolve nuclear regulatory issues and related technical matters**
- **Advocacy and representation before the Congress, Executive Branch agencies, regulatory bodies, media and state policy forums**

Accomplishing the Mission

- **Accurate and timely information to policy makers, the public and other constituencies**
- **Assistance to the nuclear energy industry with regard to state issues such as environmental considerations**
- **Encouragement to educational institutions to promote education in nuclear energy disciplines**

2007 Business Plan

CORE ACTIVITY 1

Enhancing the Business Environment for the Safe and Reliable Operation of Existing Plants

CORE ACTIVITY 2

Creating the Business Environment for New-Plant Deployment

ESSENTIAL ACTIVITIES

Enhancing the Regulatory Environment	Managing Used Nuclear Fuel	Advancing a National Energy Policy	Sustaining the Nuclear Infrastructure	Branding & Building Public Support	Enhancing Community Relations & Incident Response
<ul style="list-style-type: none"> Regulatory Oversight Safety-Focused, Risk-Informed Regulation Security & EP New-Plant Deployment Fuel Cycle Radiation Protection 	<ul style="list-style-type: none"> Fuel Acceptance Waste Confidence Funding Licensing EPA Standard Nevada Standard Canister Advanced Technologies 	<ul style="list-style-type: none"> Implementation of EPACT 2005 Funding For DOE Nuclear Activities Recognition Of Environmental Benefits Long-range Policies 	<ul style="list-style-type: none"> Work Force Fuel Supply Physical Infrastructure Financial Community Outreach 	<ul style="list-style-type: none"> Coordination With Member Efforts Targeted Advertising Outreach to Media, Policy Makers Outreach to State, Labor 	<ul style="list-style-type: none"> Industry Community Relations Programs Benchmarking Against Other Industries Community Relations "Tools" NEI Emergency Plan / Improved Coordination

NEI

NUCLEAR
ENERGY
INSTITUTE

MISSION-CRITICAL FUNCTIONS

Influencing Public Policy & Policymakers	Influencing the Political Process	Relationship Development	Member Support: Policy Coordination	Member Support: Information & Technology	Internal Operations
--	-----------------------------------	--------------------------	-------------------------------------	--	---------------------

20070228

New Executive Task Forces

- **Improving the Regulatory Process**
- **Community Relations and Incident Response**
- **Competitive and Reliable Fuel Supply**
- **Immigration and the Work Force**

Improving the Regulatory Process Executive Task Force

- **Barnie Beasley** **Chairman, President, CEO, SNOC**
- **Bill Levis** **President and CNO, PSEG**
- **Mike Sellman** **President and CEO, NMC**
- **Joe Sheppard** **President and CEO, STPNOC**
- **Mike Kansler** **President, Entergy Nuclear Operations**
- **Dave Christian** **Sr. VP Nuclear and CNO, Dominion**
- **Tom O'Neill** **VP Regulatory and Legal Affairs,
Exelon**
- **Mano Nazar** **Sr. VP and CNO, AEP**
- **Marv Fertel** **Sr. VP and CNO, NEI**



Improving the Regulatory Process

- **Regulatory actions directly impact industry**
- **NRC critical to present and future**
- **NRC entering a challenging period**
- **Problem:**
 - **Overall industry performance high, however...**
 - **Regulatory environment less stable, less transparent and less predictable**
 - **Formal regulatory processes not being followed**

Objectives

- **Increase safety focus in regulations, reviews and oversight**
- **Achieve formal promulgation and consistent interpretation of regulatory requirements**
- **Enhance public understanding of, and confidence in, the NRC**
- **Improve industry's communication of regulatory concerns in a timely and factual manner**

Activities

- **Initiated discussion with NRC**
- **Established industry clearinghouse (web board) for regulatory process issues**
- **Conducted industry self assessment**
- **Ongoing activities:**
 - **Implement recommendations from assessment**
 - **Met with EDO to discuss assessment**
 - **White paper on the regulatory process**
 - **Re-energize the Committee to Review Generic Requirements**

Expected Results

- **NRC using formal rulemaking process for new requirements**
- **NRC more focused on risk significant issues**
- **Congressional oversight well informed**
- **Industry meeting its commitments**
- **NRC and industry priorities well understood**

NEI's Mission Critical Functions

- **Influencing public policy/policymakers**
- **Influencing the political process**
- **Relationship development with outside organizations, institutions, agencies and individuals**
- **Direct member support**

NEI Member Communications

- **Administrative Point of Contact (APC)**
- **NEI sends several letters per month to the APCs and others.**
 - **Requests for review/comments on proposed rulemaking and generic communications**
 - **Format and content for generic responses to NRC**
 - **Status of key generic issues**

NEI Web Pages

- **Public site**

- <http://www.nei.org>

- **Member Site**

- <http://member.nei.org>

- For password contact Suzanne Stuart 202.739.8005

- **Clean and Safe Energy Coalition**

- <http://www.cleansafeenergy.org/>

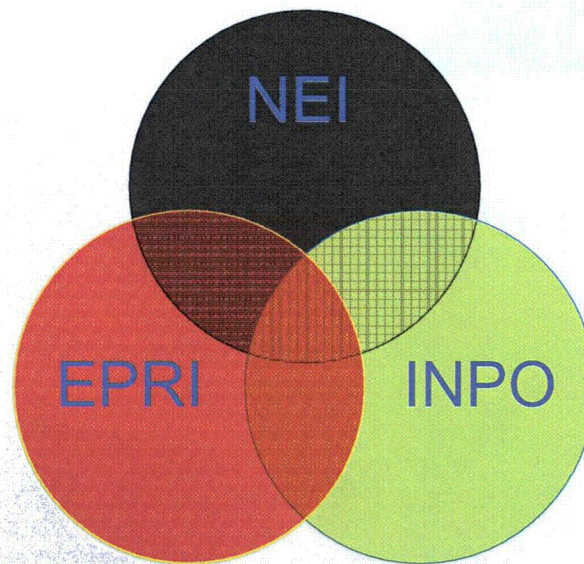


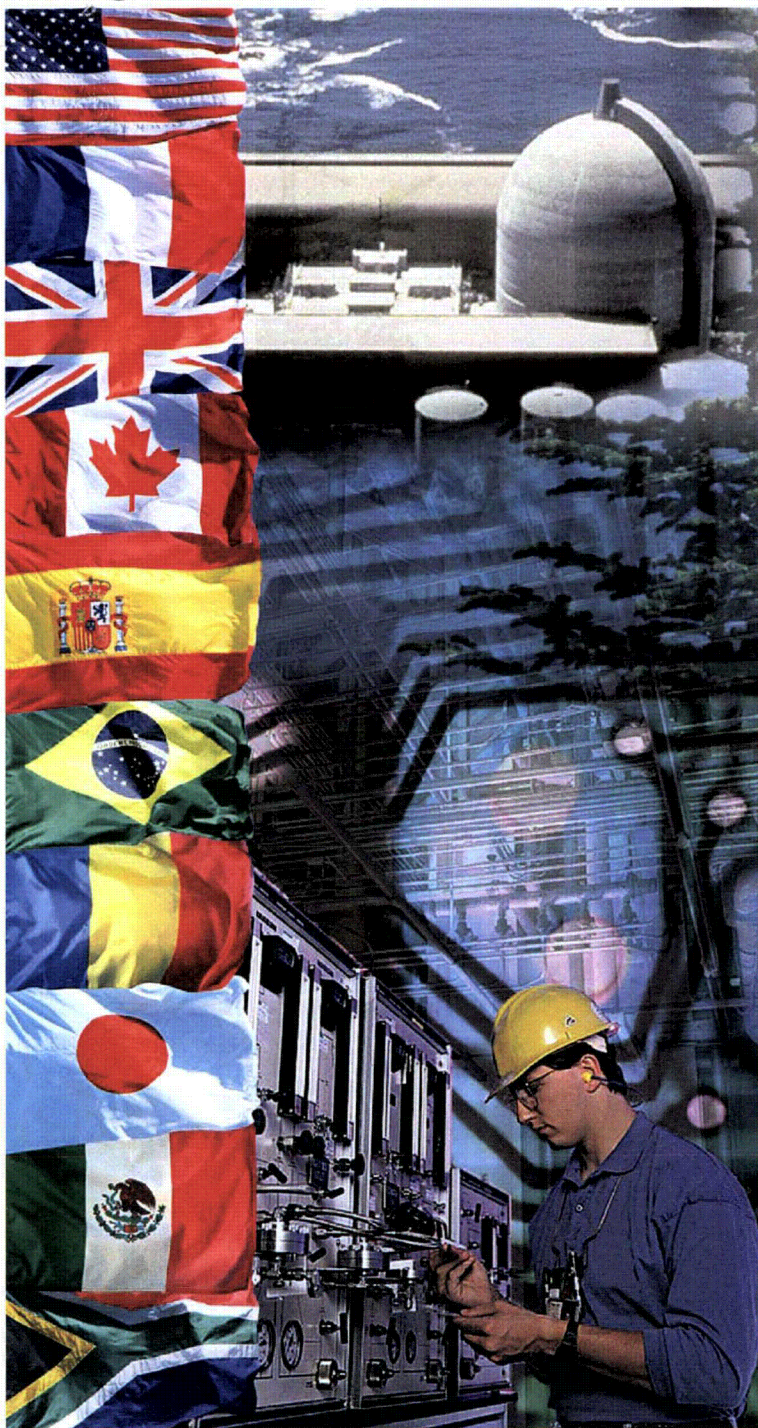
NEI as a Resource

- **NEI Directors and Project Managers**
- **Matrixed team approach to issue resolution**
- **NEI guidance documents**
- **Emerging generic issues**
- **Help on inspection, engineering or licensing issues**
- **Relationships with the federal government, agencies, Congress and media**
- **Loaned executives and employees**



Partners in Supporting the Nuclear Industry





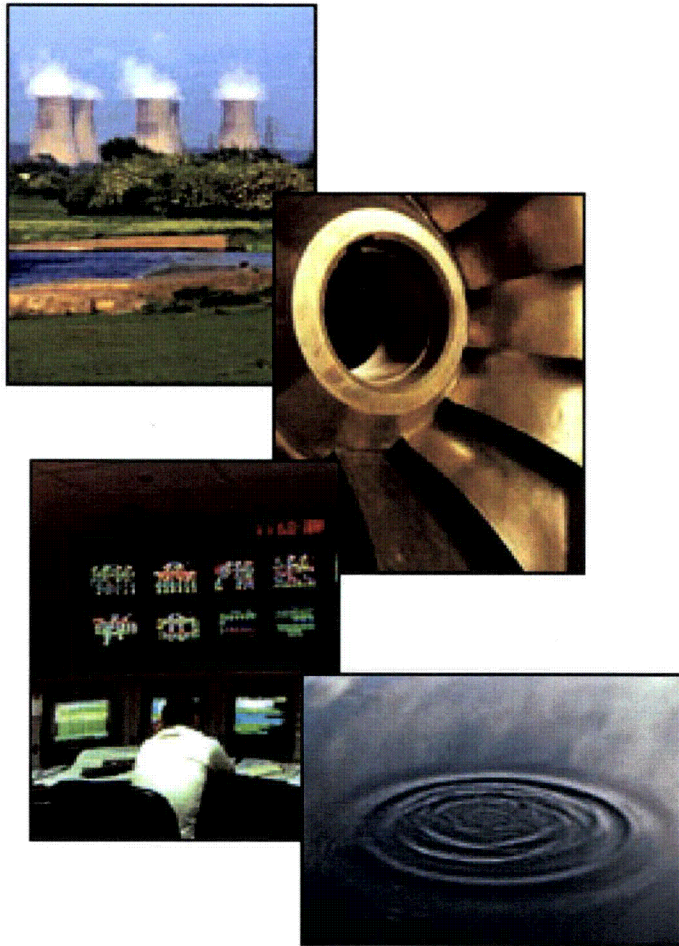
Overview of the Nuclear Power Sector at EPRI

John Gaertner

Sr. Business Operations Manager
EPRI Nuclear Sector

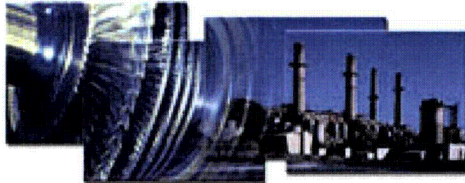
October 5, 2007

EPRI Background



- **Founded in 1973**
- **Unbiased, non-profit energy research consortium**
- **Voluntary funding from energy industry participants**
- **Collaborative research benefits members, their customers, and society**
- **Over 700 North American members (represents over 90% of U.S. electricity generated)**
- **Over 130 International participants**

Power Industry Technology Areas



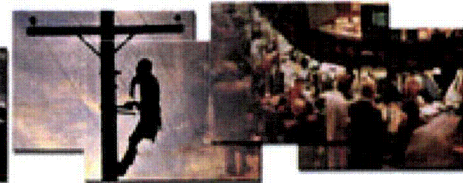
Generation & Distributed Resources

- Environmental Controls
- Major Component Reliability
- Combustion Turbines
- Maintenance, Operations and Workforce
- Advanced Coal Plant Portfolio
- Distributed and Renewable Generation Resources
- Generation Planning: Economics and Fuels



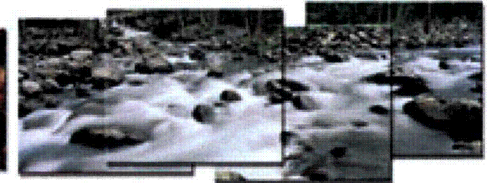
Nuclear Power

- Material Degradation/Aging and Chemistry
- High Performance Fuel
- Radioactive High-Level Waste & Spent Fuel Management
- NDE & Material Characterization
- Equipment Reliability
- Instrumentation & Control Hardware and Systems
- Nuclear Asset-Risk Management
- Safety/Risk Technology & Application
- New Nuclear Plant Deployment
- Low-Level Waste & Radiation Management



Power Delivery & Markets

- Strategic Initiatives
- Security
- Power Markets & Risk
- Assets, Planning & Operations
- Power Quality
- Transmission Reliability & Performance
- Distribution Reliability & Performance
- Electric Transportation and Energy Utilization
- Enterprise Asset Management



Environment

- Air Quality
- Global Climate Change
- Land & Groundwater
- Water and Ecosystems
- EMF Health Assessment and RF Safety
- Occupational Health and Safety

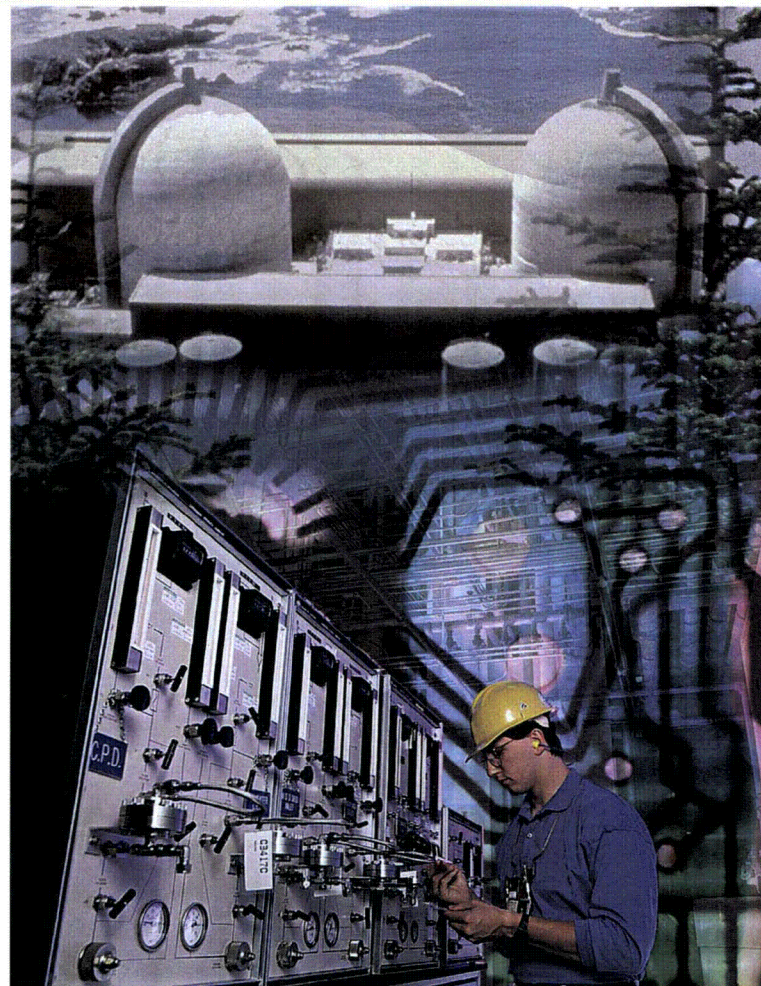
EPRI Nuclear Power Sector Mission

Develop cost-effective
technology

to

Maximizes
the utilization
of existing
nuclear
asset

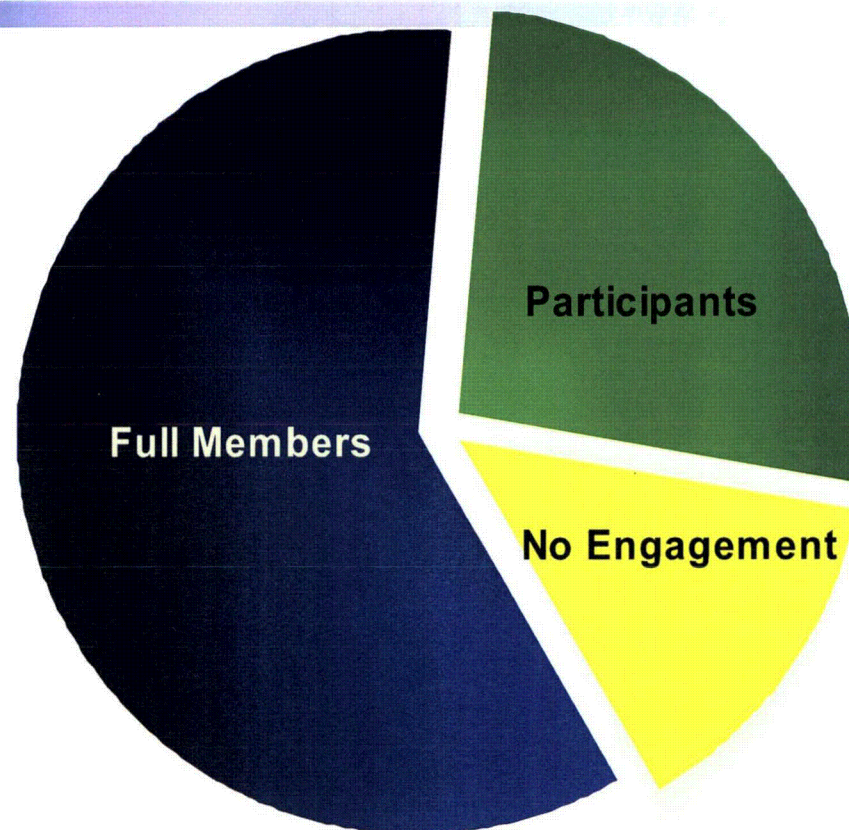
Supports the
deployment
of new
nuclear
technology



EPRI Worldwide Nuclear Participation

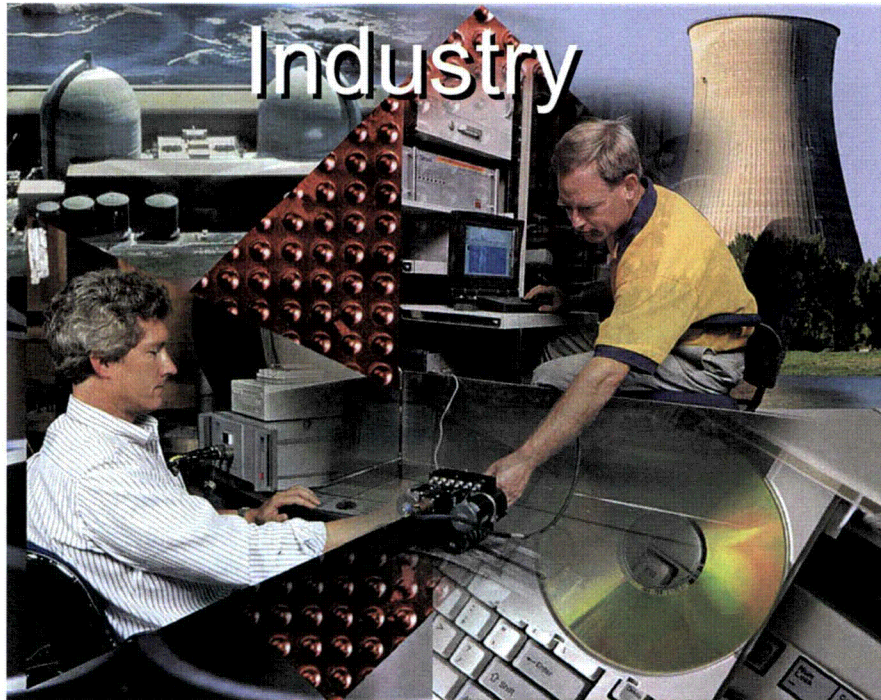
Full Members

All 26 U.S. Utilities
Electricité de France (France)
British Energy (U.K.)
CANDU Owners Group
(Canada and Romania)
TEPCO (Japan)
UNESA (Spain)
Rolls Royce (U.K.)
Eletronuclear (Brazil)
CFE (Mexico)
Chubu (Japan)
Eskom (S. Africa)



Membership and Program Participants Include Over 80% of the World's 443 Operating Commercial Units.

EPRI's Key Interfaces in the Nuclear Industry



- Relationships with DOE, NRC Office of Research, and Idaho National Laboratory
- Global relationships with other research agencies
- Cooperation with vendors, NSSS Owners Groups and universities

EPRI
Technology

INPO
Operational
Excellence

NEI
Regulatory/
Public/
Government

**Collaboration is
key to EPRI mission**

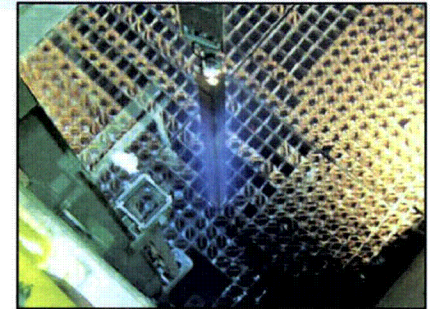
EPRI Nuclear Strategic Plan

- Vision and Strategic Goals
 - Developed with NEI and INPO
- Strategic Technical Areas Identified
- Action Plan developed for each Technical Area
 - 3-Year Budgets and Portfolios developed from Action Plan
 - Change Initiatives identified to keep strategic focus
- Advisory structure parallels Strategic Plan structure
- Action Plans updated annually
- Nuclear Strategic Plan Updated every 2 years

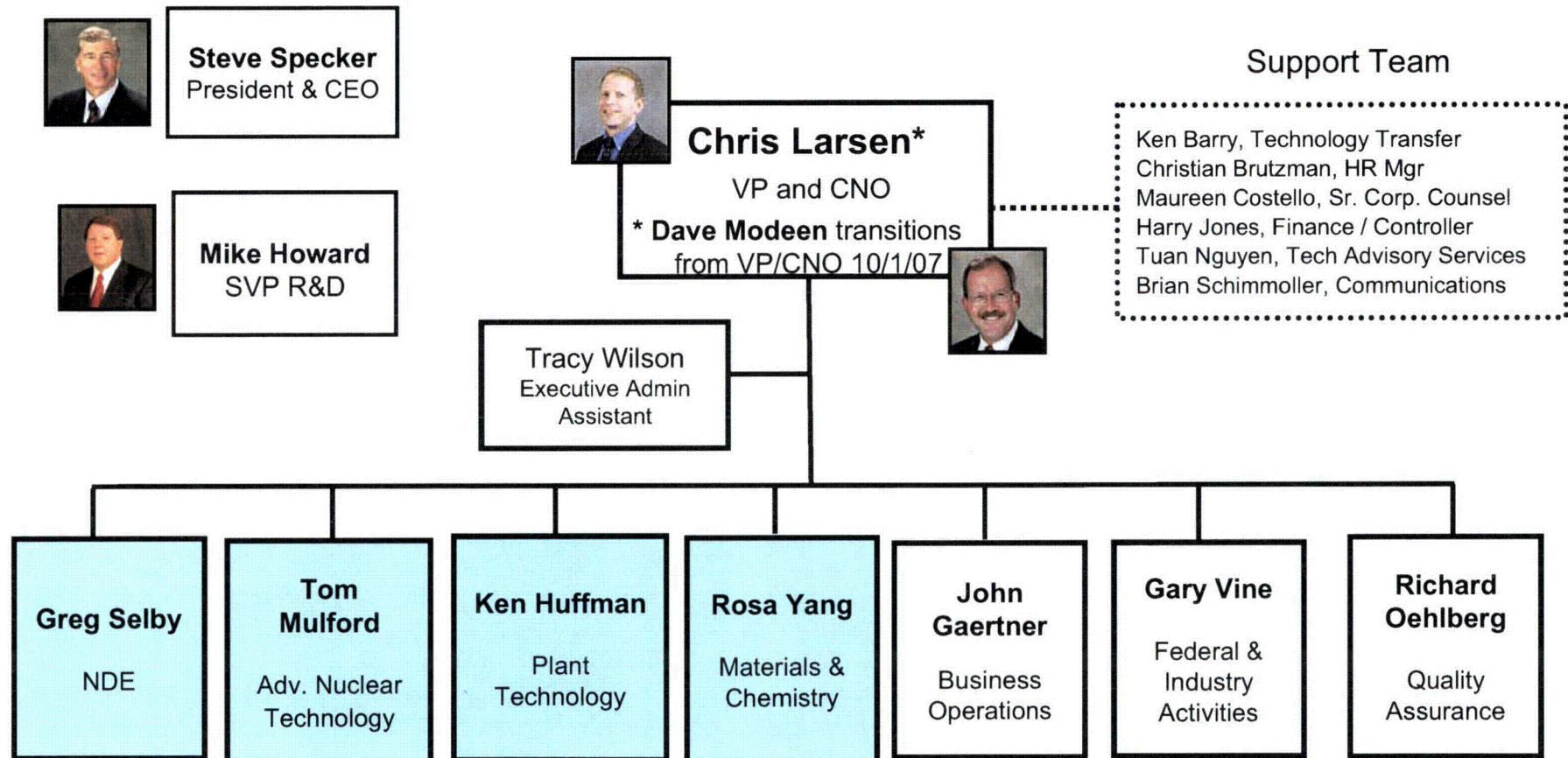
Nuclear “Action Plans” Address Key Industry Issues

The Nuclear Program’s 10 Strategic Action Plans:

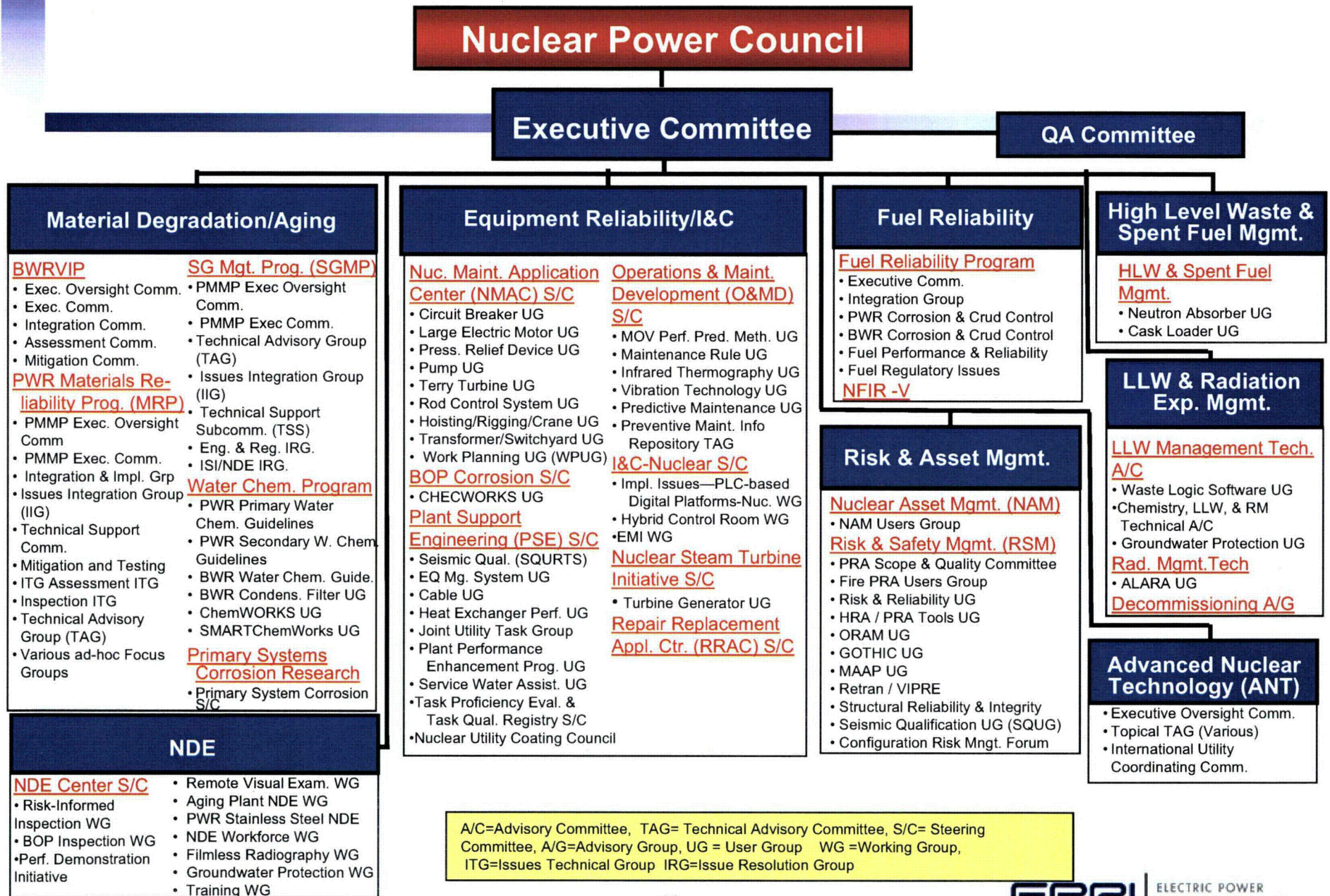
- Materials Degradation/Aging (including Chemistry)
- Fuel Reliability
- High-Level Waste and Spent Fuel Management
- Low-Level Waste and Radiation Exposure Management
- Non-Destructive Evaluation and Materials Characterization
- Equipment Reliability
- Instrumentation & Control Modernization
- Nuclear Asset/Risk Management
- Safety Risk Technology and Applications
- Advanced Nuclear Technology



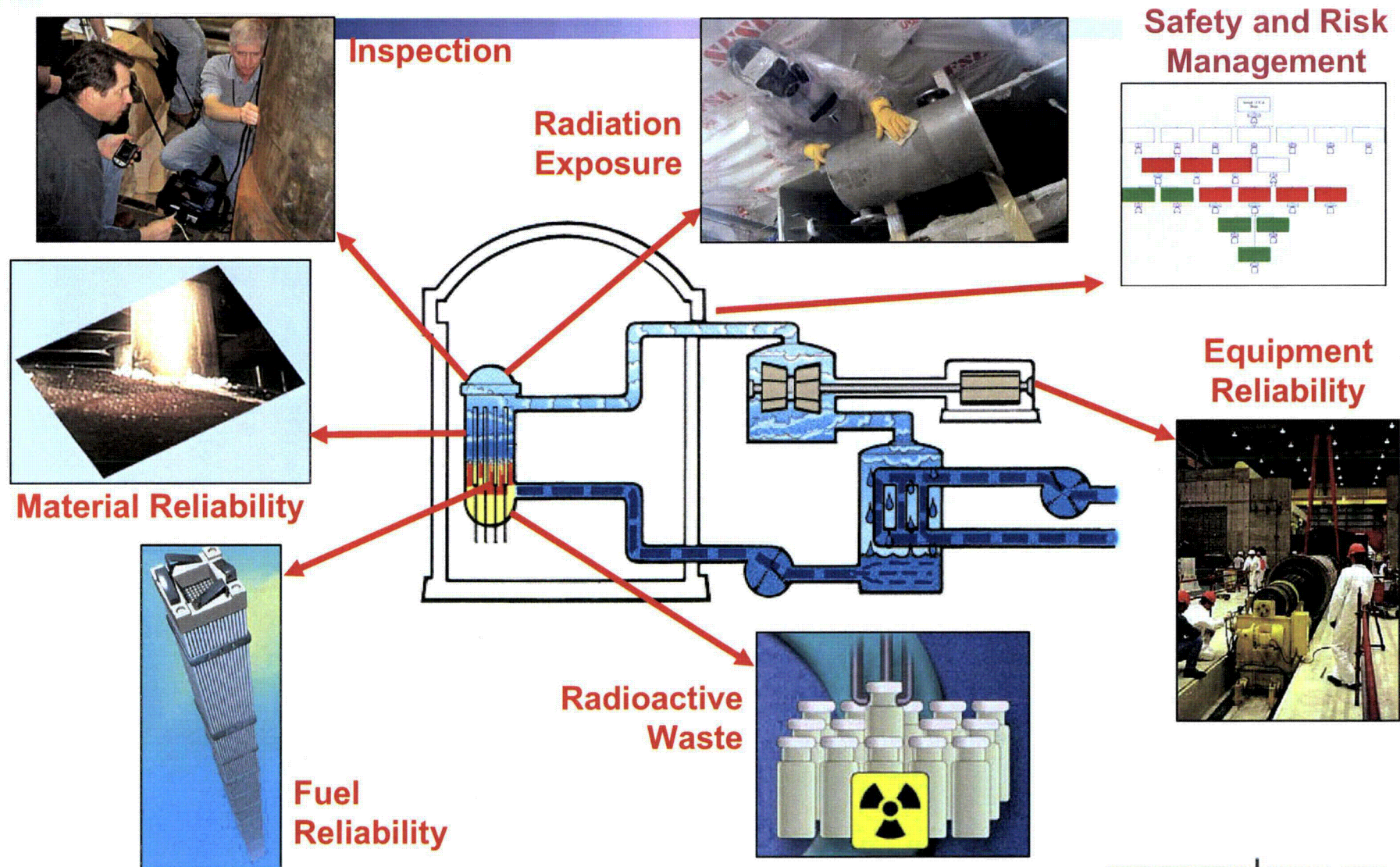
Nuclear Power Sector Leadership Team



Nuclear Power Advisory Structure with Committees



Integrated Approach to Improve Plant Performance



Recent Technical Support for Regulatory Issues

- Digital I&C
- Inspections of Dissimilar Metal Welds
- Risk Informed Regulations
 - Risk Managed Tech Specs
 - 50.69
 - Risk Informed Fire Protection
- Containment Coatings
- Emergency Planning
- BWR Steam Dryers
- Alpha Radiation Guidelines

Other Key Technical Support for Issues with NEI and INPO

- Management of Materials Issues
- Fuel reliability
- Aircraft impact
- Seismic hazard and K-K response
- Grid reliability
- Rigging, lifting and moving
- LNT models & data; improved radiation threshold
- Medium Voltage Power Cables
- Burnup credit for spent fuel transportation
- Groundwater protection

NRC/EPRI R&D Collaboration -- Perspective

- Extensive collaboration among NRC, DOE, EPRI, NSSS Vendors on nuclear R&D in 1970s and 80s
- R&D collaboration rare during 1990s
 - Legal concerns with “independence” became obstacle to issue closure
- What has changed since late 1990s?
 - Greater appreciation of common R&D goals
 - Diminished resources for R&D suggests leveraging
 - Risk-informed regulation encourages convergence on R&D assumptions, data, models, etc.
- RES and EPRI both encouraged to increase collaboration

NRC/EPRI R&D Collaboration – Without Compromising Regulatory Independence

- RES-EPRI MOU focuses on data needs and joint efforts to collect the data needed to support issue resolution.
 - Collaboration includes:
 - Defining issue & data needs, joint collection of data and review for completeness and accuracy, data validation, reporting to decision-makers.
 - Collaboration does not include:
 - regulatory analysis or specific solutions to regulatory issues.
- Issue resolution enhanced -- NRC and industry are starting with the same technical basis for resolution

Active Topics in EPRI/RES MOU

- PRA, including Scope and Quality
- Fire Risk, including PRA methods, training
- PWR Materials and NDE
- MAAP Applications
- Digital I&C
- Dry Cask Storage and Transport Risk
- Fuel Failure Analysis

- Potential Future Topics:
 - HBU Fuel, Seismic, License Renewal to 80 Years

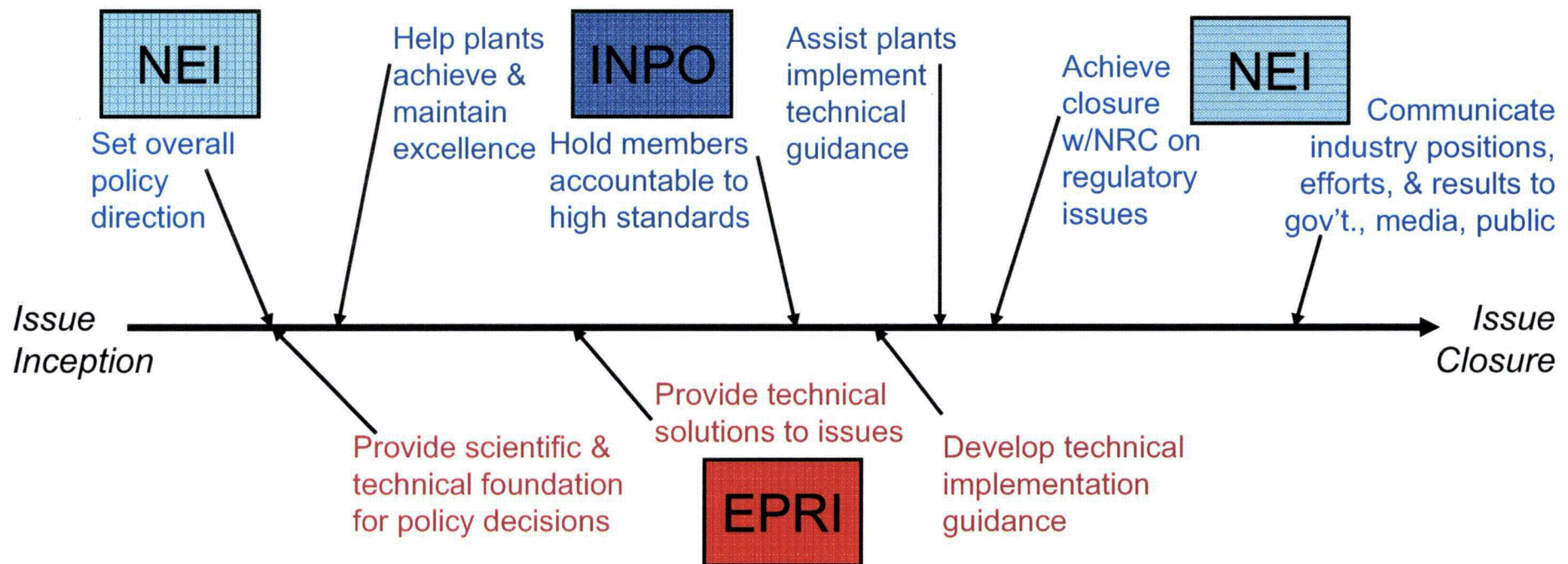
Additional R&D Areas

- Integrated Spent Fuel Management
 - Geologic repository
 - Advanced fuel cycle planning and demonstration
- New Plant Deployment
 - Reflect lessons learned in design
 - Anticipate obstacles to construction, testing, operation
 - Technical analysis to support ESP and licensing

EPRI-INPO-NEI Memorandum of Agreement

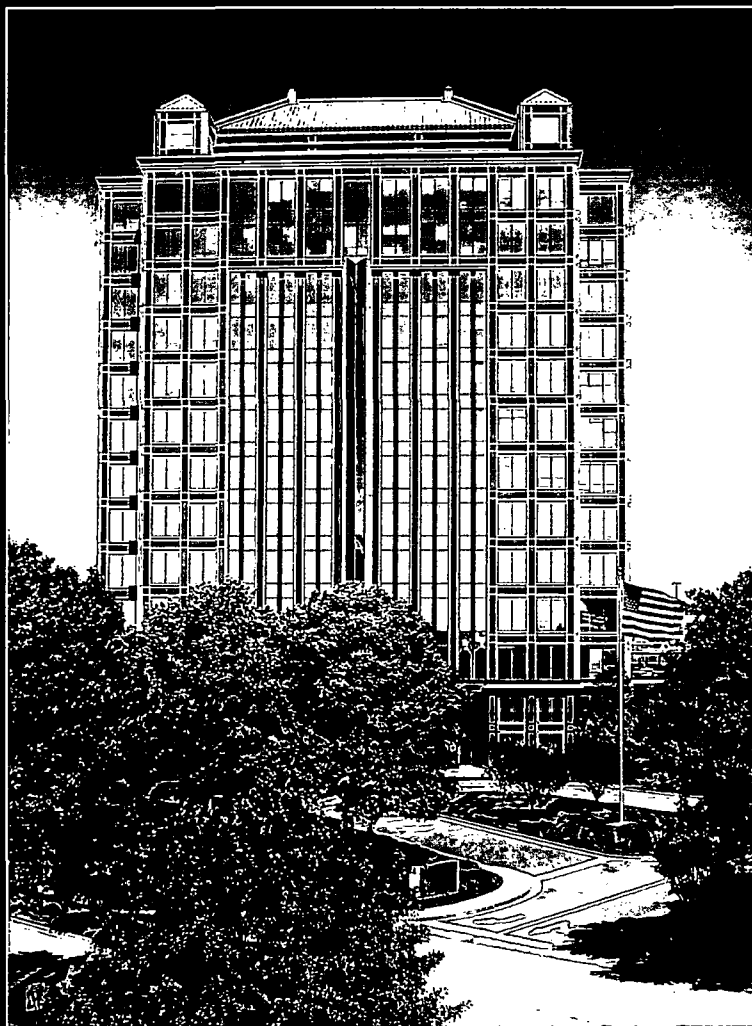
Goal: Effective coordination, efficient use of utility resources, teamwork, minimizing duplication, integrated support to plant owner/operator needs

Typical process for addressing a technical issue:



INPO Overview

Clair Goddard
Vice President
Assistance

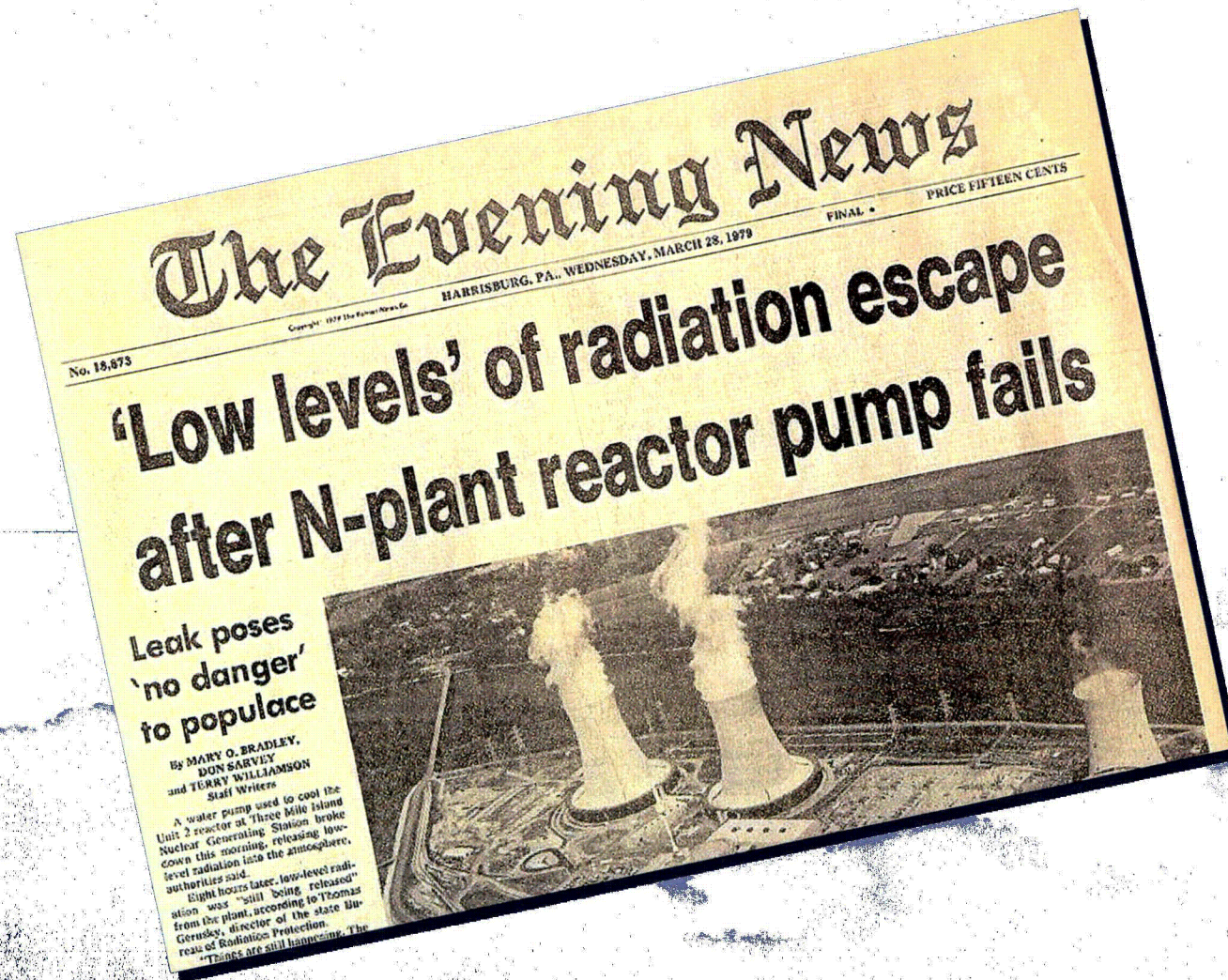


Institute of
Nuclear Power
Operations

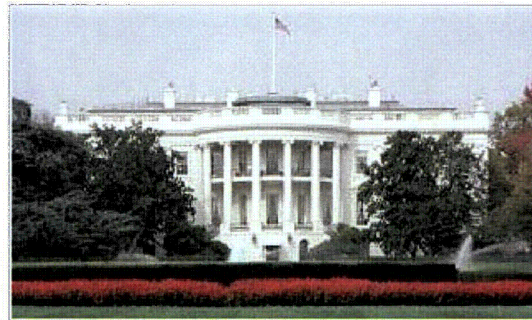
National Academy
for Nuclear Training

World Association
of Nuclear
Operators

Birth of *INPO*[®]

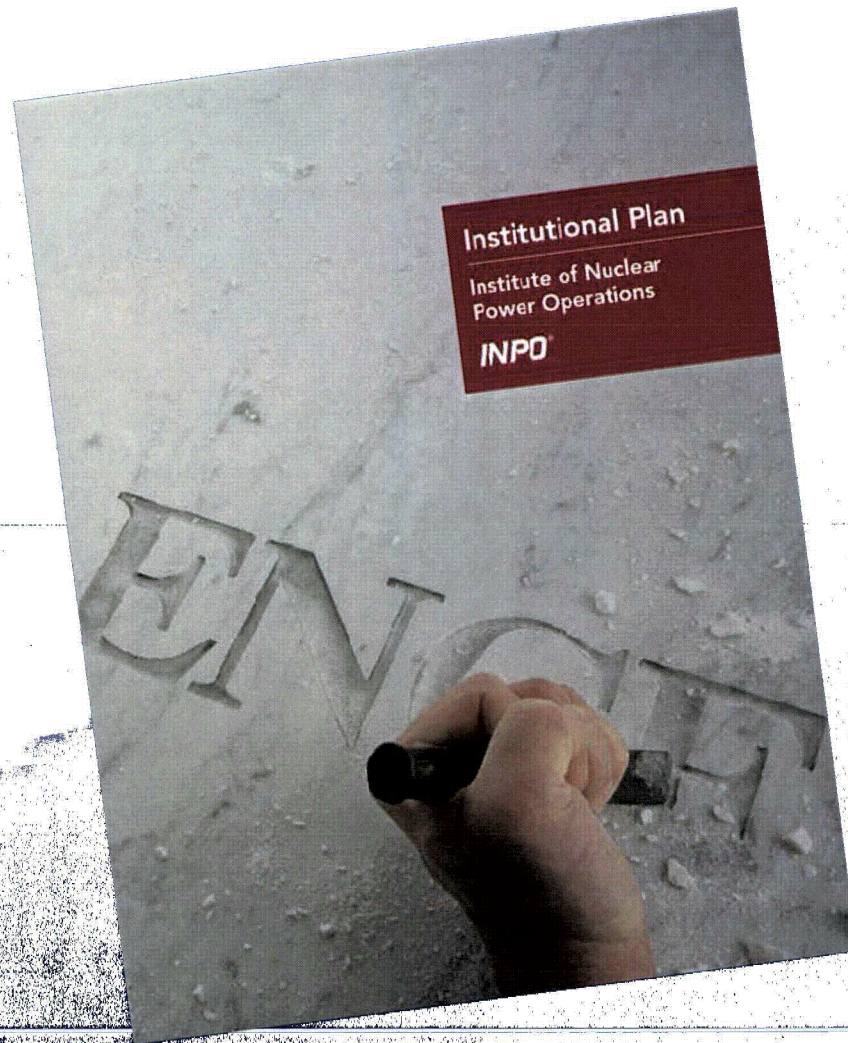


President's Commission on the Accident at Three Mile Island



- Set and police its own standards of excellence
- Integration of management responsibility
- Systematic gathering & analysis of operating experience
- Agency-accredited training institutions
- Operator continuing training & plant simulators
- Dramatic change in attitude toward safety (safety culture)

INPO's Mission



To promote
the highest levels
of safety and reliability
– to promote
excellence –
in the operation of
nuclear electric
generating plants

INPO[®] Members and Participants

Members



27 U.S. Utility Members who operate nuclear power plants and 38 Utility Associate Member co-owners

International Participants (12)



Brazil



Canada



France



Japan



South
Korea



Mexico



Romania



Slovenia



South
Africa



Spain



Taiwan



United
Kingdom

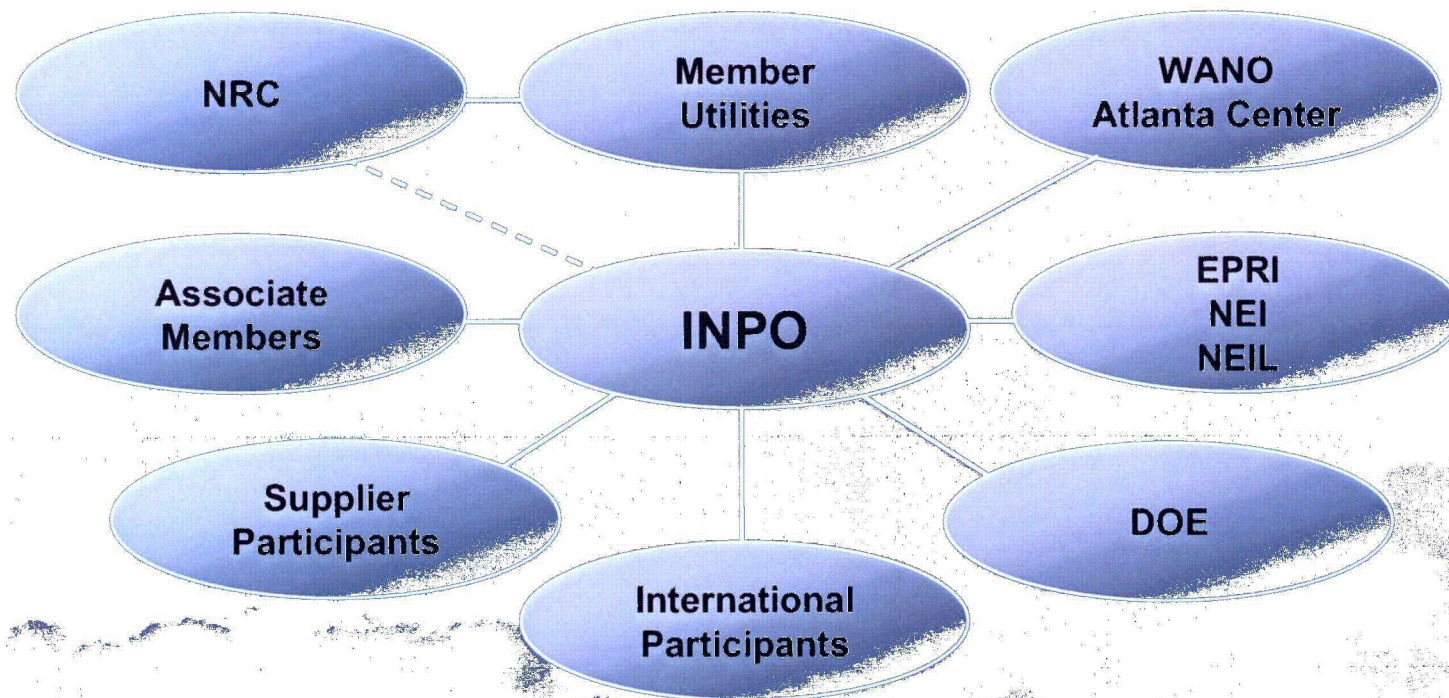
Supplier Participants (18)

AREVA
Bechtel
BHP Billiton
Black & Veatch
Day & Zimmermann
General Electric

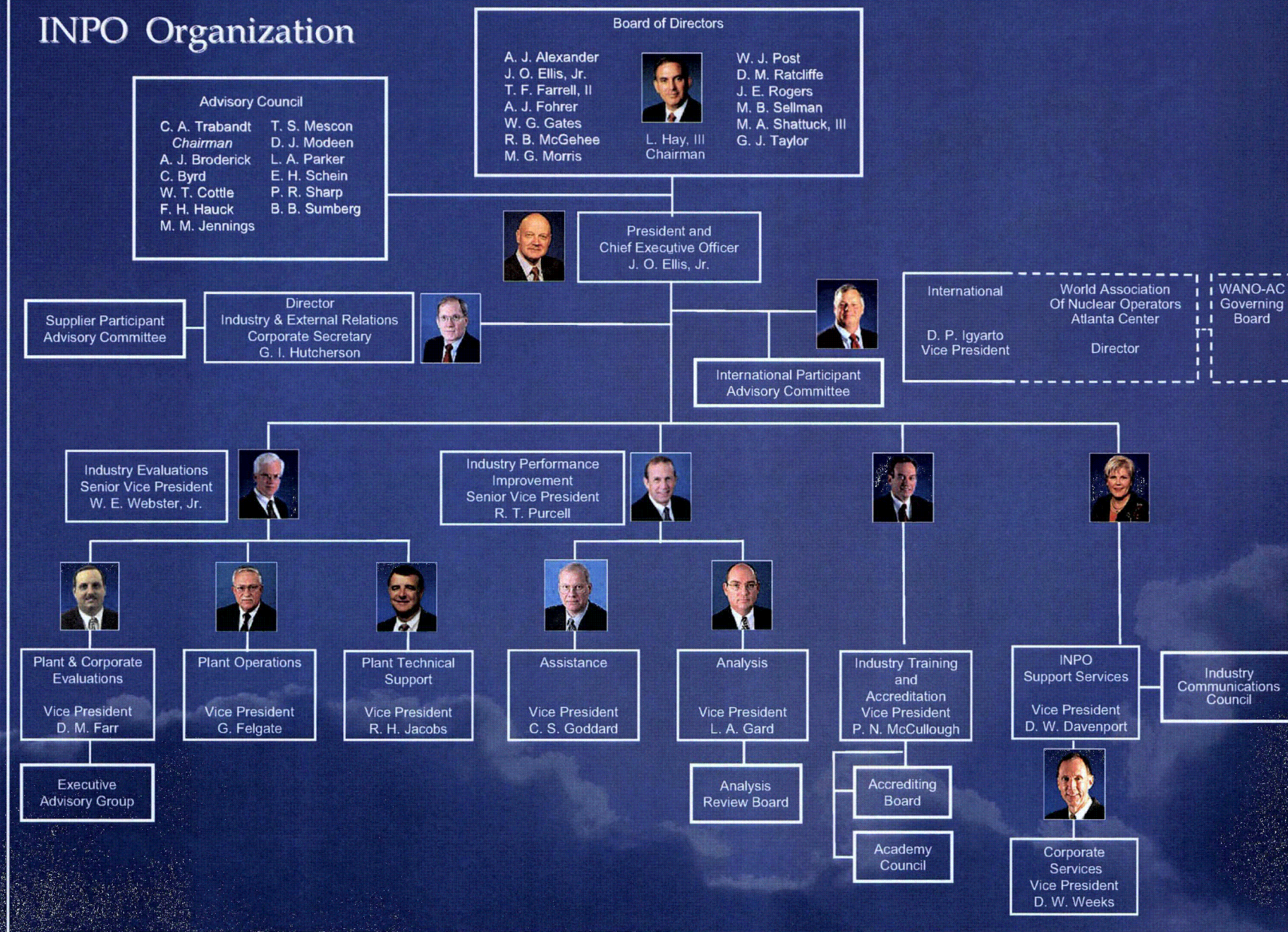
Hitachi
Honeywell
Louisiana Energy Services
Mitsubishi
Nuclear Fuel Services
PBMR

Sargent & Lundy
Scientech
The Shaw Group
Toshiba
Washington Group
Westinghouse

INPO[®] Relationships



INPO Organization



October 1, 2007

Core Values

Excellence... Make it better.

We are committed to learning, improvement and personal growth.

Perseverance... There is no finish line.

We are relentless and vigilant about nuclear safety and reliability.

Leadership... Make things happen.

We work with the industry to identify needs and aggressively stimulate industrywide progress.

Relationships... Knock down walls. Build bridges.

We respect each other. We work as a team and build a community that shares, compares and improves.

Integrity... We are what we say and do.

We are accountable for our words and actions. Honesty and sincerity are fundamental to our credibility.

INPO[®] Cornerstone Programs

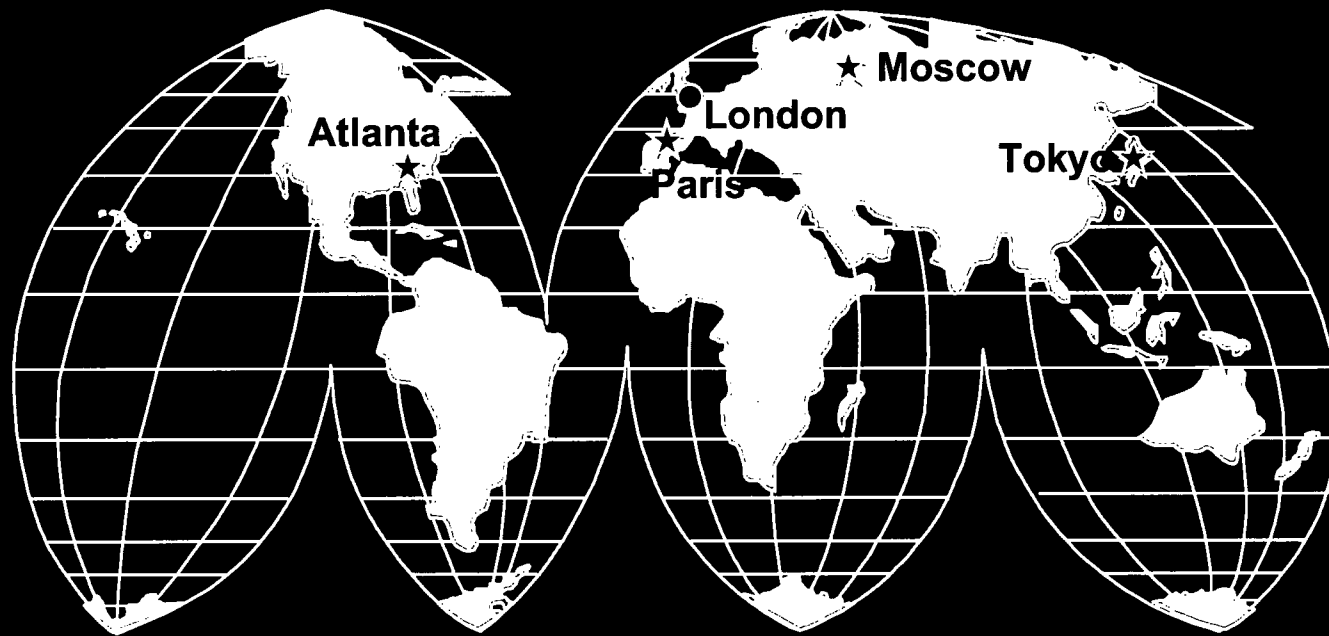
Evaluations

Training &
Accreditation

Analysis &
Information
Exchange

Assistance

WANO Organization



○ Coordinating Center ☆ Regional Centers

INPO[®] Focus Areas

Fuel
Performance

Transformer,
Switchyard and
Grid Issues

Emergency
Preparedness

Knowledge
Retention

INPO®