

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

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ISSUES AND RELATED REGULATORY REQUIREMENTS

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UNITED STATES OF AMERICA
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BRIEFING ON EVOLUTIONARY LIGHT WATER REACTOR
CERTIFICATION ISSUES AND RELATED
REGULATORY REQUIREMENTS

- - - -

PUBLIC MEETING

Nuclear Regulatory Commission
One White Flint North
Rockville, Maryland

Friday, April 27, 1990

The Commission met in open session, pursuant
to notice, at 9:00 a.m., Kenneth M. Carr, Chairman,
presiding.

COMMISSIONERS PRESENT:

KENNETH M. CARR, Chairman of the Commission
THOMAS M. ROBERTS, Commissioner
KENNETH C. ROGERS, Commissioner
JAMES R. CURTISS, Commissioner
FORREST J. REMICK, Commissioner

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STAFF SEATED AT THE COMMISSION TABLE:

SAMUEL J. CHILK, Secretary

WILLIAM C. PARLER, General Counsel

JAMES TAYLOR, Executive Director for Operations

DR. THOMAS MURLEY, Director, Office of Nuclear Reactor Regulation

CHARLES MILLER, Director, Standardization and Life Extension Project, NRR

ASHOK THADANI, Director, Division of Systems Technology, NRR

JAMES PARTLOW, Associate Director for Projects, NRR

WILLIAM TRAVERS, Chief, Emergency Preparedness Branch, NRR

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

9:00 a.m.

CHAIRMAN CARR: Good morning, ladies and gentlemen.

The purpose of today's meeting is for the NRC staff to brief the Commission on evolutionary light water reactor reviews planned and in progress.

There are currently several items before the Commission relating to evolutionary plant certification issues, scheduling and specific design reviews. In view of these multiple items under consideration by the Commission, I anticipate that the Commission will have questions on these related issues.

I understand that copies of the staff's presentation slides are available at the entrance to the meeting room.

Do any of my fellow Commissioners have opening remarks?

If not, Mr. Taylor, please proceed.

MR. TAYLOR: Good morning. As you mentioned, Mr. Chairman, this is to go over the staff's proposed process for the evolutionary and passive advanced light water reactor review. We'll also be prepared to discuss schedules and resources.

1 We're also prepared to discuss the technical policies
2 in SECY-90-016, if the Commission desires.

3 The ACRS has sent the staff and Commission
4 their views on the technical issues in that paper and
5 I'm now reviewing and expect to issue today the
6 staff's response to the ACRS letter. In general, on
7 SECY-90-016, the staff and the ACRS are in general
8 agreement on the issues, the treatment of the issues.

9 The staff, for the past several months, has
10 been active in getting the policy process development
11 prepared to present to you. We request Commission
12 guidance in the following areas. First, agreement on
13 the staff review process for the ALWRs discussed in
14 SECY-90-146, which is the subject of this briefing;
15 reaffirmation of the priorities of the review which
16 we'll be discussing; and Commission decisions on the
17 technical policy issues in SECY-90-016.

18 We'll also discuss as mentioned some of the
19 staff review resources today, but we're not asking the
20 Commission for early or final decisions on that
21 subject. We'll be making recommendations on resources
22 as part of the five year plan budget discussions which
23 are in the process of being put together and will be
24 submitted to the Commission for the next budget cycle,
25 probably in June.

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1 Mr. Miller -- with me, I'm sorry, at the
2 table are Ashok Thadani, Charlie Miller from NRR, the
3 Director of NRR, Tom Murley, Mr. Partlow and Mr.
4 Travers from NRR.

5 I'll now ask Charlie to commence the
6 briefing.

7 MR. MILLER: Thank you.

8 I'd like to say a few words on the review
9 priorities. The staff's been following the guidance
10 that was provided by the Commission last December
11 concerning the review priorities through the
12 evolutionary plants. This guidance instructed the
13 staff to assign equal priority to the General Electric
14 ABWR, the System 80+, Combustion Engineering's design,
15 and the EPRI requirements document for evolutionary
16 plants until such a time that there has been a
17 domestic interest expressed in the United States.
18 We've been doing that and in addition the Commission
19 directed the staff that upon receipt of the EPRI
20 requirements document for passive plant designs to
21 conduct or complete a review and to issue the final
22 safety evaluation report after Commission guidance has
23 been incorporated on policy issues which may come up
24 along the way, and we do anticipate that there will be
25 quite a few.

1 Before we were to proceed with the LRB
2 review to the extent that it would be taken to the
3 ACRS for comments and recommendations sent to the
4 Commission, the activities on the EPRI passive plant
5 requirements document and the safety evaluation will
6 have been issued. However, the staff is planning to
7 have early interactions with the vendors themselves
8 because the vendors testing programs and their co-
9 development work and the early work on the drafting of
10 the LRBs is already in progress and we think that it's
11 important that we continue to dialogue with them on
12 these subjects and the participate to the extent
13 that's practicable.

14 (Slide) May I have viewgraph number 3,
15 please?

16 When the staff sent the Commission SECY-90-
17 065, we had committed at that point in time to try to
18 perform an analysis where we could do an evaluation
19 for how we might improve upon the review process and
20 make our recommendations to the Commission. We've
21 done so recently when we submitted SECY-90-146 which
22 is currently before the Commission. The proposed
23 process would be somewhat different than that directed
24 in the SRMs in December, but would allow the
25 Commission's overall objectives to be achieved. The

1 staff understands these objectives to be the
2 identification of policy issues for Commission
3 consideration as early as possible, the expedition of
4 ALWR reviews consistent with efficient use of NRC
5 resources, and continued close coordination with the
6 ACRS.

7 The most important feature of the proposed
8 process would be that the policy issues needing review
9 by the Commission will be resolved simultaneously with
10 ongoing staff review activities. This will prevent
11 the potential for hold points during the review
12 process that could cause scheduler delays. Commission
13 guidance pertaining to the policy issues would be
14 incorporated into the final SER before it would be
15 issued.

16 (Slide) May I have viewgraph 4, please?

17 Viewgraph 4 displayed some savings in the
18 order of months that could be achieved by instituting
19 such a review process. I think the key focus on the
20 schedule charts that are before you should not be on
21 the absolute dates that were actually presented in
22 SECY-90-146, but rather on the scheduler savings that
23 could be realized by instituting the revised process
24 proposed by the staff. These savings are modest in
25 some cases, but fairly significant in others.

1 The dates that have been presented in the
2 paper itself can only be achieved if the review
3 process proceeds in a manner that is not only
4 extremely smooth, but contains no contingencies or
5 unexpected problems. It also assumes that the issues
6 in 90-016 are resolved in the very near-term. We've
7 been trying to use those as a basis for conclusions in
8 the review thus far.

9 Doctor Murley will now speak about resources
10 and any new policy developments that we have before us
11 that might somewhat affect these schedules.

12 DOCTOR MURLEY: Thank you, Charlie.

13 (Slide) I'll have to ask us to go back to
14 viewgraph 2, where we have resources here, and mention
15 to the Commission, which I'm sure is obvious, that
16 both the schedules and the resource estimates are just
17 that, the best estimates we can do based on a new
18 process for us. These are new designs and we're
19 reviewing it under a rule that's never been done
20 before. So, the staff does not have -- I mean the
21 reviewers themselves do not have fixed guidelines that
22 they've been through before. That's why these
23 resource estimates are the best we can do. They are
24 the same ones that we sent to the Bevill committee in
25 response to questions at the hearing, for example.

1 COMMISSIONER REMICK: Am I correct though
2 that reviews under Part 52 should be at least as
3 resource intensive as past reviews? Is there any
4 reason to believe that they'd be less when we're
5 talking about new designs and a new regulation? It
6 seems to me that they would be at least as intensive.

7 DOCTOR MURLEY: It's not clear. In some
8 areas -- I would say in general yes. I don't want to
9 be coy, but there may be -- the standard is different.
10 The standard for a certification, certified design is
11 not necessarily the same standard as for an FTOL. But
12 I think because that we're plowing new ground, that it
13 is going to be more resource intensive, yes.

14 COMMISSIONER REMICK: I would think so.

15 DOCTOR MURLEY: Yes.

16 Now, I should say, if you'll look at the
17 fiscal '90 column where we have 18 FTE shown here,
18 we've not been spending at that rate this year. We've
19 only been spending at two-thirds that rate, at the
20 budget rate. So, in that sense --

21 CHAIRMAN CARR: Why is that?

22 DOCTOR MURLEY: I'll get to that.

23 There is not a problem with the number of
24 people available at this stage because we're in this
25 intense policy development stage where we cannot turn

1 the staff loose to do reviews when policy isn't
2 settled. And the staff can really only make review--
3 progress in designing -- design reviews when we're
4 operating within known policy guidelines. We can't
5 have each reviewer out there setting his own policy.

6 The difficulty we face with the advanced
7 light water reactor design reviews is that NRC does
8 not have any regulations that give design requirements
9 for severe accidents. The Agency decided in 1985 that
10 a severe accident rule was unnecessary. So therefore,
11 the staff has been working within the policy
12 guidelines that do exist, namely the regulations that
13 exist for the non-severe accident parts of the plan,
14 the post-TMI improvements, the USIs and the high and
15 medium generic safety issues, the severe accident
16 policy statement and the standardization policy
17 statement. Those were the boundaries of the policies
18 that we've been working to for the last, let's say,
19 three or four years.

20 Now, there's a question as to -- I mean in
21 that review we have raised a number of other policy
22 questions that are before the Commission now. But
23 while that's being resolved, the staff can't really go
24 ahead very efficiently because we don't know whether
25 there's going to be a containment guideline or not,

1 whether the ATWS requirements we proposing or not,
2 it's just an uncertain time for us.

3 COMMISSIONER REMICK: Tom, if I may
4 interrupt, I agree that there's some extremely
5 important policy issues that we need to get back to.
6 There's just no question in my mind. Those are
7 important and I can understand where you might be held
8 up on those, but in reviews there are a considerable
9 number of issues that aren't dependent on policy
10 issues currently before the Commission. Why can't the
11 staff proceed on those?

12 Just an offhand example comes. I heard that
13 Palo Verde took out their optic cables and things and
14 so forth. Yet I think some of the new designs are
15 proposing to have the fiber optic cables. Is the
16 staff considering the impact of that on those designs?
17 I don't think that's a policy issue before the
18 Commission at all, but it's certainly a technical
19 issue that I would think the staff should be
20 addressing. I don't want to get into that issue as
21 one, but I'm just giving you an example of -- I think
22 there are many things --

23 DOCTOR MURLEY: Oh, there are.

24 COMMISSIONER REMICK: -- many things.

25 DOCTOR MURLEY: Yes.

1 COMMISSIONER REMICK: APWR, SBWR, all the
2 thermal hydraulic tests have been completed and I
3 don't think the staff has even looked at the data from
4 the SBWR, yet the tests are completed, the facilities
5 are closed up --

6 DOCTOR MURLEY: Now, that's right, but
7 you're mixing up the passive plants with the large
8 units.

9 COMMISSIONER REMICK: But I thought we were
10 discussing light water plants here, evolutionary and
11 passive, in your SECY document.

12 DOCTOR MURLEY: Yes, but in the past, I was
13 talking about the rate of spending and why we have not
14 been spending at this rate, at the budget rate. It's
15 largely because we're, I think, trying to settle
16 policy issues. There is, nonetheless, a fair amount
17 of work that has gone on. We have looked at the
18 experimental facilities on the passive plants. I've
19 seen them myself. I've gotten briefed on them. We've
20 been out to San Jose and looked at them. We've not
21 turned on a large program on it, but --

22 COMMISSIONER REMICK: Yes. All I'm talking
23 to is the actual data from SBWR tests, I don't think
24 the staff has looked at, from what I'm told. Let's
25 not get into the details of the issues. I'm just

1 trying to point out --

2 DOCTOR MURLEY: They're not independent
3 details.

4 COMMISSIONER REMICK: My point is I think
5 there are many things that the staff could be doing.

6 DOCTOR MURLEY: If -- yes.

7 MR. TAYLOR: We -- you know, that's why we
8 need to resolve these issues. These are in the direct
9 line of work. If we get these policy issues resolved,
10 I think you'll see the resource expenditures begin to
11 climb and we'll be addressing those that we're ready
12 to resolve. Of course that's the purpose of these
13 consultations with the Commission.

14 COMMISSIONER REMICK: I agree.

15 MR. TAYLOR: Including 90-016 and the
16 process. It's to try to clear the path. Then I
17 think, if we can agree, that is the Commission with
18 the staff or changes, then we'll be able to proceed.
19 I think you then will be able to see us in a much
20 more -- we'll move to the resource control mode much
21 more than we're in right now.

22 DOCTOR MURLEY: Even there on the passive
23 experimental thing, I think we need some guidance
24 because the guidance I think we've been getting and
25 are under is to put the EPRI review first and settle

1 the EPRI requirements document thing first and then to
2 start discussing with the vendors. Now -- okay. So
3 that's -- if I sound -- I don't mean to sound
4 defensive, but the fact is that until policy gets
5 settled, we are not very efficient in moving ahead and
6 I've got to marshall my resources within known policy.

7 COMMISSIONER CURTISS: I take it what we're
8 talking about here, focusing on a broader question is
9 what's a sensible, coherent, disciplined process for
10 identifying and solving the policy questions? Isn't
11 that the gist of what you're looking at here in the
12 various papers that you've -- aside from the technical
13 papers?

14 DOCTOR MURLEY: Yes.

15 MR. TAYLOR: Yes.

16 COMMISSIONER CURTISS: The Commission gave
17 some guidance on that subject over the course of about
18 eight months in 1989 in various staff requirements
19 memoranda. I personally think that process was rather
20 carefully thought out. I think it addressed a
21 mechanism, established a mechanism for identifying the
22 significant policy questions. I think it spoke to the
23 question of what the involvement of the ACRS was going
24 to be and I think it spoke to the question of what
25 relationship the EPRI requirements document would have

1 vis-a-vis the individual vendor designs.

2 I take it what we're doing here is
3 discussing an alternative to the process that was
4 established. I do think the process needs to be
5 established. I'm not sure the proposed alternative is
6 the one that makes the most sense. I'm anxious to
7 hear what you have to say about that. But I think
8 the -- as I see it, the truth probably lies somewhere
9 between what we've talked about here so far that we
10 need to establish a process and that's why the
11 Commission focused on that extensively over eight
12 months in 1989 and then you all need to get on with
13 applying the resources to that process.

14 DOCTOR MURLEY: Yes.

15 COMMISSIONER CURTISS: My own view, I guess,
16 is it's unfortunate we're still talking about the
17 process, but I recognize that the staff has
18 suggestions on how to improve that process and I'm
19 anxious to hear whether they actually improve them or
20 get back to what we're doing before the Commission
21 took a look at this issue last year.

22 DOCTOR MURLEY: Okay. Now, with regard to
23 resources, although there's not a problem with total
24 number of people, there is a problem with the key
25 reviewer skills available. This, in a way, goes back

1 to the reorganization three years ago where NRR was to
2 focus on operating reactor and operating reactor
3 safety. Quite frankly, I think we've done that and I
4 think we've done a good job at it. But over the last
5 four years, there have been reductions in what is the
6 normal -- used to be the NRR inspection enforcement
7 staff. Namely we've been reduced somewhat to close to
8 180 full-time equivalents which is about 21 percent.
9 Some of that was due to efficiencies in combining the
10 two offices and some was just a phase down in the
11 number of NTOLs that we were doing.

12 But in any case, a large part of that
13 reduction was in the reviewer area. For example, in
14 the previous organization, there were three branches
15 that dealt with reactor systems, over 60 people. Now
16 there's one branch with 20 some people that deal with
17 reactor systems. These are the experts that really
18 get in the guts of new reviews, new license reviews.

19 So, in addition to that reduction, there's a
20 competing priority of work. We still have to look at
21 operating reactors' events and the issues that come up
22 in preparing generic communications and that sort of
23 thing. The license renewal effort is taking a large
24 amount of effort right now in preparing the basis for
25 the rule. That's high priority in taking the time.

1 Likewise, the tech spec improvement program is a high
2 priority effort that's taking a lot of time right now.
3 So, that -- all of those, I think, are at least as
4 high and some I'm sure higher than new plant reviews.

5 I think we can build up this pool of
6 technical experts. It's going to take a little time.
7 Now, I don't want to leave the impression that the NRC
8 as an agency is technically weak. I think we're not.
9 I think we're technically strong and we can handle any
10 task that's given us. I'm not sure we can handle them
11 all at once though and that's the priorities question
12 that the Commission is going to have to give us some
13 guidance on.

14 For fiscal '90, this year, we've moved some
15 people within NRR and done some shuffling to help with
16 the project management workload, to keep the
17 Commission papers going, the policy papers and that
18 sort of thing. For fiscal '91, the budget before the
19 Congress allows some growth in NRR's budget. We will
20 use that to supplement the technical staff and
21 reprogram where needed.

22 But again, my judgment is it's going to be
23 difficult to go out on the street in this kind of
24 hiring climate and get the kind of experts that we
25 need to do reviews. Furthermore, even if we can get

1 them, it takes awhile for them to become imbued with
2 the regulatory philosophy that reviewers need to have,
3 although with the right kind of people that can come
4 very quickly.

5 Finally, for fiscal '92 and '93, we will be
6 asking for resources that are above and beyond those
7 shown in this chart. These, as I said, are what have
8 been sent to Bevill Committee. But we will be asking
9 for more as our needs come into better focus.

10 That was all I intended to say on resources,
11 if there are any questions, but I'll move on --

12 COMMISSIONER ROBERTS: Well, having said all
13 that, page 8 of SECY-90-146 and you cite what you just
14 verbally gave us about reprogramming currently budget
15 technical systems, "NRR should be able to conduct
16 these reviews without significantly affecting other
17 programs." Is that still the "bottom line?"

18 DOCTOR MURLEY: Yes, I think so.

19 COMMISSIONER ROBERTS: Thank you.

20 MR. TAYLOR: This does mention some of the
21 projected budget increases in the specific area.

22 COMMISSIONER CURTISS: These are the numbers
23 that you were talking about, Tom?

24 DOCTOR MURLEY: Yes.

25 COMMISSIONER CURTISS: The additional?

1 DOCTOR MURLEY: Right.

2 COMMISSIONER CURTISS: Okay.

3 DOCTOR MURLEY: With the extra that's in the
4 budget for fiscal '91 and what we're asking for in '92
5 and '93, I believe we can do it.

6 COMMISSIONER CURTISS: With the 15
7 additional for the two years you show here, I take it
8 what you've done is to assess for '92 and '93 where
9 you think you're short under the numbers that we've
10 provided to Bevill where additional attention will be
11 required. Can you shed some light here with the
12 breakdown on this viewgraph for eight in '92 and seven
13 in '93 would go to?

14 DOCTOR MURLEY: Were the eight on the EPRI
15 passive figures?

16 COMMISSIONER CURTISS: I'm just looking at
17 the --

18 DOCTOR MURLEY: Oh, I see.

19 COMMISSIONER CURTISS: -- bottom of page 8.
20 Through the budgeting process, NRR will have cost
21 about eight more FTEs in '92 and seven in '93. I
22 understand that those are in addition to the numbers
23 shown here.

24 DOCTOR MURLEY: Yes.

25 COMMISSIONER CURTISS: The 30 for '92 and

1 '93. My question is where would they go?

2 DOCTOR MURLEY: I don't have that.

3 Do you have that, Bill?

4 MR. TRAVERS: Yes. I can probably give you
5 some information.

6 DOCTOR MURLEY: Okay.

7 MR. TRAVERS: Actually, what's currently
8 budgeted in FY '92 falls on two different budget
9 lines. One is budgeted for design certifications and
10 in FY '92 the current budget numbers are 18.8 and we
11 are indicating, at least preliminarily, that we would
12 request on the order of 22 FTEs for design
13 certification.

14 The second budget line that appears is --

15 COMMISSIONER CURTISS: And I take it that
16 would be primarily on the evolutionary plants then if
17 it's focused on design certification?

18 MR. TRAVERS: On design certification.

19 COMMISSIONER CURTISS: Okay. Okay. Go
20 ahead.

21 MR. TRAVERS: And the second budget line
22 that appears is the EPRI requirement document reviews
23 for both evolutionary and passive. And for fiscal
24 year '92, what's currently in the budget is 3.4 for
25 '92 and what we at least have preliminarily identified

1 would be requested is eight FTE.

2 CHAIRMAN CARR: Even though you're
3 projecting to be through with the passive requirements
4 document in 12/91? So there's only three months of FY
5 '92 in there.

6 DOCTOR MURLEY: No. Here, our basis for
7 planning the budget is more of what I would call a
8 contingency basis. I don't think, quite frankly,
9 we're going to make 12/91. These schedules -- and I
10 don't mean to sound coy -- but the schedules are,
11 assuming that things go well, that we get all the
12 information that we need and so forth, we just can't
13 foresee what's likely to happen. And it's not like
14 we've done it a dozen times and we've got a lot of
15 experience. So, the schedules, the absolute dates, as
16 Charlie mentioned, are "everything goes well" dates.
17 Frankly, I don't think we're going to make December
18 '91. So, in order to budget for people, we've taken a
19 more conservative approach and assume that we're going
20 to have to have -- we'll still be working on the BPRI
21 passive requirements document in '91 and that we'll
22 probably still be expending resources on it.

23 So, in that sense, you're right, it is
24 inconsistent.

25 MR. TRAVERS: Tom, I might just clarify that

1 the FY '92 and '93 numbers that appear on your
2 viewgraph --

3 COMMISSIONER CURTISS: These are current
4 apparently.

5 MR. TRAVERS: -- include the numbers of
6 additional FTE that we anticipate coming in.

7 COMMISSIONER CURTISS: All right. So, the
8 increases that you --

9 CHAIRMAN CARR: The 15 are in there then?

10 COMMISSIONER CURTISS: Yes.

11 MR. TRAVERS: Yes, sir.

12 COMMISSIONER CURTISS: The lines here look
13 like they add up to 22 for the design certification in
14 EPRI passive. So, these are the current numbers. Is
15 that true for '93 as well?

16 MR. TRAVERS: For FY '92 and '93, these are
17 not the currently budgeted numbers --

18 COMMISSIONER CURTISS: I understand.

19 MR. TRAVERS: -- but they include the
20 anticipated additional FTE that --

21 COMMISSIONER CURTISS: These are the numbers
22 that you refer to in the SECY paper?

23 MR. TRAVERS: That's correct.

24 COMMISSIONER CURTISS: Okay.

25 CHAIRMAN CARR: But these are the numbers

1 that support the SECY-90-146 tentative schedule.

2 DOCTOR MURLEY: Oh, boy. Careful. I
3 thought these were the Bevill numbers and I thought we
4 were going to ask for more in '92 and '93 beyond the
5 Bevill numbers.

6 Do you know for sure, Bill?

7 MR. TRAVERS: These include the additional
8 resources that we're anticipating adding to the
9 currently budgeted numbers.

10 DOCTOR MURLEY: Okay. Well, we'll have to
11 get you that for sure because my understanding was
12 different from Bill.

13 COMMISSIONER ROGERS: Just before we leave
14 this, Tom, are you thinking about the possibility of
15 some kind of an in-house training program to take
16 people who are otherwise very qualified in their
17 engineering and scientific backgrounds but are not up
18 to speed for doing some of the kinds of reviews that
19 need much more specialized knowledge and try to create
20 a training program in-house to grow your own, to some
21 extent?

22 DOCTOR MURLEY: Yes, we're doing that. I
23 mean we've got plans along those lines. Jim Taylor
24 has asked the staff, in particular Ed Jordan, to
25 develop an agency-wide program. In addition -- well,

1 do you want to --

2 MR. TAYLOR: No, that's -- we're working on
3 that actively to identify things that we have a
4 plan --

5 COMMISSIONER ROGERS: Well, it seemed to me
6 that it would have several advantages. One not only
7 the resource advantage, but it also would be probably
8 a very interesting opportunity for some younger people
9 that might not have had a chance to get into some of
10 these things and would make their jobs at the Agency
11 even more interesting and challenging.

12 DOCTOR MURLEY: Yes. One of the innovative
13 things that I'm kind of enthusiastic about is the
14 notion of developing a senior scientific kind of
15 position in the Agency that would be established to
16 attract people of really worldwide status and
17 achievements. It would not be in the management chain
18 necessarily, but it would be parallel to that. I
19 think Jim's taken the lead on that and I think it's a
20 very good idea. We may be able to attract some very
21 high quality people in the electrical area, in the
22 severe accident area and so forth. And then, with
23 that calibre of person technically, it's relatively
24 easy to imbue them with the regulatory philosophy.
25 So, I think --

1 MR. TAYLOR: We've actually drafted the
2 procedures to do that and we're working with the
3 Office of Personnel to get that set up. Things are
4 moving along quite well. I look to have that in the
5 next several months, at least the framework in place.
6 Then we'll begin the task of looking at the
7 disciplines and obviously we'd be interested in the
8 Commission's assistance in anything they have in that
9 area for those types of people.

10 COMMISSIONER REMICK: I think it's extremely
11 important that we do that training while we still have
12 those reviewers who can train them.

13 MR. TAYLOR: Yes.

14 COMMISSIONER REMICK: Not that our old time
15 reviewers are looking older or anything.

16 MR. TAYLOR: That's right. We're moving--
17 no.

18 COMMISSIONER REMICK: I seem to be talking
19 more about golf and things like this, but it is
20 important that we get started on that and we get the
21 experience.

22 Tom, before leaving the subject you're on,
23 are there any particular disciplines that you're aware
24 of that we're especially thin in?

25 DOCTOR MURLEY: Well, the ones that -- yes,

1 that I'm concerned about, I think, are in the
2 electrical area and the I&C area because technology is
3 just moving so fast, particularly in the I&C area.

4 In addition, some of our very best people,
5 like physics reviewers, they have 40 years of
6 government service, 30 years of government service
7 and --

8 CHAIRMAN CARR: Just time to get started.

9 DOCTOR MURLEY: They're just rolling now,
10 Mr. Chairman. Also --

11 CHAIRMAN CARR: Retire and work for job
12 satisfaction with us now.

13 DOCTOR MURLEY: In some of the key areas
14 like seismology, we're only one deep in certain areas.
15 So --

16 COMMISSIONER REMICK: Those are the areas I
17 would have identified off the cuff too.

18 DOCTOR MURLEY: Yes.

19 CHAIRMAN CARR: Let me ask one more question
20 before we -- this early interaction with the passive
21 design vendors you talked about, how many FTE per
22 vendor are we using in that?

23 DOCTOR MURLEY: For vendor what, Mr.
24 Chairman?

25 CHAIRMAN CARR: Well, Charlie mentioned that

1 we want to keep on interaction with these passive
2 design vendors, even though that's a little beyond the
3 priority list. We want to make sure we keep up to
4 date with what they're thinking and interact with
5 them. I guess -- is that a fair representation of
6 what you said, Charlie?

7 MR. TAYLOR: That's the key problem.

8 CHAIRMAN CARR: I'm just curious how many
9 FTE that involves.

10 MR. MILLER: It's a lower level. Okay. It
11 would be somewhere in the neighborhood of maybe three-
12 quarters to maybe one and a quarter FTE and it doesn't
13 involve any individual. It involves a smaller amount
14 of time of a larger group. For example, Ashok
15 Thadani's got a staff of experts and, if I raise an
16 example, Westinghouse is going to embark in this
17 coming year upon a very aggressive testing program to
18 develop their design and we're going to need people
19 who need to be involved there, but not necessarily one
20 person. As the various tests are done, we may need a
21 little piece of a lot of people's time to take a look
22 at those things and contribute and give comments to
23 management.

24 CHAIRMAN CARR: So, it may add up to an FTE
25 per vendor per year?

1 MR. MILLER: Yes. Now, in addition, I have
2 project managers that work for me who a piece of their
3 time is devoted to following the activities that are
4 going on so that we keep abreast as the schedules go
5 on and we can feed the information to the technical
6 side of the organization and have the ability to know
7 when the time is right for NRC participation. These
8 testing programs are being performed as the design
9 develops under the DOE contracts and it's the kind of
10 thing where they're going to be done. It isn't like
11 the review where we can kind of set a priority,
12 conduct the review at some point in time. These
13 tests are going to be performed and, as Commissioner
14 Remick mentioned, some earlier GE tests have been
15 completed already. Some of these things are going to
16 be very key.

17 Now, we haven't -- as Doctor Murley has
18 mentioned, we haven't come to grips a lot with some of
19 these major, major issues, how we're going to review
20 these, what the standard is going to be. Some of
21 these testing programs will verify some of the special
22 features that are being offered in these designs, like
23 passive containment cooling.

24 MR. TAYLOR: That's one of the reasons why
25 we want to be involved, because we're subsequently

1 being asked to evaluation and judge.

2 MR. MILLER: Code development work, are the
3 current codes adequate and what modifications need to
4 be made to the codes for doing it?

5 COMMISSIONER REMICK: And I can assure you
6 from the ACRS hat that early ACRS input in the ABWR
7 and SBWR and PRISM have had significant impact on
8 proposed designs. That early feedback of either
9 staff, ACRS or the combination could have significant
10 impact on licenseability of a plant.

11 COMMISSIONER CURTISS: Tom, let me go back
12 to the resources number and make sure I understand
13 because I really have two questions. According to my
14 numbers, we've provided Bevill those figures that
15 you've got on '90 and '91. '92 and '93 are not Bevill
16 numbers because we didn't provide them.

17 DOCTOR MURLEY: Right. That was my mistake.

18 COMMISSIONER CURTISS: Okay.

19 DOCTOR MURLEY: That was I was confused.

20 COMMISSIONER CURTISS: That clears that up
21 then.

22 DOCTOR MURLEY: The '90 and '92 numbers are
23 the numbers that we are currently in capacity for.

24 COMMISSIONER CURTISS: '92, '93?

25 DOCTOR MURLEY: Yes.

1 COMMISSIONER CURTISS: Second question,
2 following upon the Chairman's question. Do these
3 numbers for '92 and '93 reflect what would be required
4 to move forward in accordance with the process in
5 9146, the proposed revise process pending before us?

6 DOCTOR MURLEY: Yes. Now --

7 CHAIRMAN CARR: Best guess.

8 DOCTOR MURLEY: Best guess, yes

9 Commission, where I was confused is that the
10 fiscal '92 and '93 numbers that are in the five year
11 plan, these do go above those.

12 COMMISSIONER REMICK: I'd like to make one
13 final point on your resources, Tom. We have publicly
14 indicated we're not going to hold up reviews and I
15 applaud that. It's my impression, and I could be
16 wrong, that --

17 CHAIRMAN CARR: I don't know where we
18 publicly stated that.

19 COMMISSIONER REMICK: I think at our
20 appropriations hearing. But in -- well, I might be
21 wrong, but my impression is that some of the later
22 plants that were reviewed, we had as many as 40 or 50
23 FTEs involved in reviews. I don't know if that's
24 correct. So, when I look at your numbers, they still
25 to me seem small, but I'm not the one to know. You

1 folks know that. But I think it is responsible for us
2 as managers if we foresee that we do need resources,
3 that we at least identify them. If we don't get them,
4 that's another matter. But I think it's important as
5 managers that we identify if we have those needs, if
6 our goal is that we're not going to be the one holding
7 things up.

8 So, that's what's been driving me in asking
9 questions that I have. Mine is not a question of
10 quality of staff or anything else is that do we have
11 this proper staff, are we applying them to do the
12 third job that this Agency has a reputation for doing
13 in the past? That's what my interests are.

14 CHAIRMAN CARR: As I remember our statement,
15 I think we said we didn't think we'd be on the
16 critical path.

17 COMMISSIONER REMICK: Yes, and --

18 CHAIRMAN CARR: With what we know now.

19 COMMISSIONER REMICK: We're always on the
20 critical path. The question is are we holding it up
21 or are we at a choke point. I hope we're not.

22 DOCTOR MURLEY: Yes. The difference,
23 Commissioner, in my mind is that in the reviews for
24 FTOLs, the staff has over 20 years experience in
25 reviewing things and we've got a standard review plan

1 that goes into great detail and that sort of thing.

2 That kind of leads on to the next subject.
3 We don't have the level of detail at this stage now
4 that the staff normally has to do a review. So, we're
5 in a Q and A mode and to some extent the designers,
6 the applicants, are going to have to generate new
7 information that they don't have. So, that's why I
8 guess my hesitation has to do with schedule as much as
9 anything, because I think the applicants are going to
10 be on the critical path for our questions. Now, does
11 that mean where we are or not? Yes, we are because
12 it's our review hurdle that they have to jump.

13 CHAIRMAN CARR: Well, we've got two kinds of
14 applicants, one for design certification and another
15 one to build a plant.

16 DOCTOR MURLEY: I'm talking about the
17 applicant for the certification.

18 CHAIRMAN CARR: And we're only talking about
19 design certification now.

20 DOCTOR MURLEY: That's right.

21 CHAIRMAN CARR: So I'm not sure there is a
22 time frame that we have to meet. There's no end point
23 out there.

24 DOCTOR MURLEY: Yes, that's another question
25 as to what's the chicken and the egg. Will there be

1 orders before we have a certified design? I don't
2 know the answer to that.

3 There are some policy questions in addition
4 to the ones that are before the Commission now. There
5 are some policy questions that are coming and we hope
6 to have those framed enough, say within the next two
7 months or so, to bring to the Commission. Those are
8 on viewgraph 5.

9 (Slide) Let me talk a bit about what the
10 issues are. With regard to level of design detail and
11 the second bullet, which is inspection, test analysis
12 and acceptance criteria, although they're separate
13 issues, they're very closely related. The rule, Part
14 52, talks about design information sufficiently
15 detailed to permit the preparation of procurement
16 specifications and construction and installation
17 specifications. The statement of considerations talks
18 about an essentially complete design. Now, we've had
19 long hours over the last month on my staff, long hours
20 of discussion as to what that language means, and we
21 do not have a consensus.

22 CHAIRMAN CARR: Why didn't you ask us?

23 DOCTOR MURLEY: We're preparing to.

24 COMMISSIONER CURTISS: It's been a year
25 since we promulgated Part 52. I'm puzzled that we're,

1 a year later, still struggling with the question of
2 what an essentially complete design is.

3 DOCTOR MURLEY: Yes, and I'll tell you some
4 of the concerns. On Millstone 3, for example, a
5 recent plant, I remember the Vice President of
6 Engineering of the company telling me that they
7 expended 20 million manhours of engineering for design
8 by the time they were done, and that includes the
9 architect-engineer's work, all the analyses that were
10 needed to prepare FSARs, the questions and answers and
11 so forth. Now, that's at least \$1 billion of effort.
12 Now, is that what the Commission expects to us to
13 review? I don't know.

14 I've asked the staff to start at it from a
15 different point of view and see if we could come at it
16 and converge with a consensus. That is, what level of
17 design detail do we require from the applicant to make
18 our safety judgments? That's, I think, a bit of an
19 easier question to answer, although I didn't have the
20 answer today. But we're coming to the conclusion that
21 the staff will get the detail it needs through the
22 review process, through the Qs and As.

23 In some cases, like my structural people
24 tell me that they've probably got enough detail right
25 now on the ABWR, for example, to make decisions on

1 some of the major structural features of the plant;
2 whereas other reviewers, like the electrical and the
3 I&C staff, feel they need far more information than
4 we've got and that GE has even developed.

5 So, the level of detail I think that's
6 needed is going to be a revealed standard. That is
7 once we're done with our review, then we'll be able to
8 say that was the level that we needed.

9 COMMISSIONER CURTISS: Let me ask you on
10 that question. As you framed it, we ought to look at
11 what level of detail is necessary for us to make our
12 safety findings. How does that differ from the level
13 of detail that we require now, first? And secondly,
14 is it fair to say that the level of detail not only
15 ought to focus on what's required to make safety
16 findings, but what's required to encourage
17 standardization?

18 DOCTOR MURLEY: Yes. That was -- when we're
19 done with that, then we still need --

20 COMMISSIONER CURTISS: Obviously the latter
21 goes beyond the former.

22 DOCTOR MURLEY: Yes.

23 COMMISSIONER CURTISS: As I say, if your
24 test is what level of information is required to make
25 the safety findings, that's, as I read it, an SAR

1 level of information and it may or may not encourage
2 standardization. It certainly hasn't in the past.

3 DOCTOR MURLEY: Yes.

4 COMMISSIONER CURTISS: I guess --

5 DOCTOR MURLEY: Well, there's some
6 information in the SAR that simply can't be produced
7 until you build the plant.

8 CHAIRMAN CARR: Didn't you have to -- take
9 the Millstone example you gave us. When they got
10 through with their billion dollars worth of
11 expenditure, didn't you have to look at those designs
12 to make your safety finding?

13 DOCTOR MURLEY: Yes. For the final --

14 CHAIRMAN CARR: The answer is obviously, it
15 looks to me light.

16 DOCTOR MURLEY: Operating license.

17 CHAIRMAN CARR: That's what we're talking
18 about. We want a design we can license that anybody
19 can build.

20 DOCTOR MURLEY: Now, I'll tell you --

21 MR. PARTLOW: But we would be certifying
22 that overwhelming level of design detail.

23 CHAIRMAN CARR: That's right. I mean that's
24 standardization. I thought that's where we were
25 going.

1 COMMISSIONER ROGERS: I thought that's what
2 we were talking about when we talked about this kind
3 of thing.

4 CHAIRMAN CARR: That's why I say I'm sorry
5 you wasted a lot of manhours on trying to figure out
6 what we meant. We could have probably given you a
7 quick answer.

8 DOCTOR MURLEY: Okay. Well --

9 CHAIRMAN CARR: You may not like it.

10 DOCTOR MURLEY: Where we've wasted all this
11 manhours, let me give you an example, is emergency
12 diesel loading sequence for over 100 components in a
13 plant. There's no possible way, I don't think, that
14 they can give us the detail to review until they
15 actually design and build it.

16 CHAIRMAN CARR: That's what we're talking
17 about. They don't have to build it, but they
18 certainly have to design it.

19 DOCTOR MURLEY: Okay. We've -- well, you
20 know, I don't know what the staff can do because in
21 our --

22 CHAIRMAN CARR: I don't think you're going
23 to get the level of the design detail you need.

24 DOCTOR MURLEY: That's right. We don't
25 either.

1 CHAIRMAN CARR: I think you've got to stand
2 up and require it.

3 DOCTOR MURLEY: What we have been thinking
4 about was that where it's not possible to provide the
5 kind of details that the staff normally has on an FSAR
6 for a completed plant, we would put that into the
7 ITAAC document, which is the inspections test analysis
8 and acceptance criteria.

9 CHAIRMAN CARR: Why?

10 DOCTOR MURLEY: We inspect --

11 CHAIRMAN CARR: Why wouldn't you just make
12 them give it to you?

13 DOCTOR MURLEY: Well, I don't think it
14 exists. I mean, like I said --

15 CHAIRMAN CARR: It has to exist before they
16 can build it.

17 DOCTOR MURLEY: That's true. I use the
18 example of the loading sequence for the emergency
19 diesel generators. They've got to have -- there are
20 over 100 components that load onto an emergency diesel
21 and the --

22 CHAIRMAN CARR: Today.

23 DOCTOR MURLEY: For the large light water
24 reactors that we license today, and we don't get that
25 kind of detail until the final stages of construction

1 and --

2 CHAIRMAN CARR: That's only because we don't
3 require it.

4 MR. TAYLOR: Mr. Chairman, these two areas
5 have been -- since the rule was promulgated, have been
6 subjects of great discussion within the industry
7 itself and within the staff. I think what you're
8 saying here, and we can --

9 CHAIRMAN CARR: I realize that, but
10 essentially complete design means something to me.

11 MR. TAYLOR: Well, this is the very reason
12 why the staff needs to put its thoughts together and
13 come to the Commission in the next several months to
14 settle the issue.

15 CHAIRMAN CARR: I'm just trying to give you
16 a little --

17 COMMISSIONER CURTISS: Yes. If all else --

18 MR. TAYLOR: This has gone on along since
19 the rule was promulgated.

20 CHAIRMAN CARR: I just want to help you out
21 a little.

22 MR. TAYLOR: You're going to and we're going
23 to have to come to you because the views expressed on
24 these topics have varied. Is that not so? There's
25 disagreement in staff. I think there are views that

1 the industry itself has.

2 CHAIRMAN CARR: But we've got
3 standardization as the overall goal.

4 MR. TAYLOR: Right.

5 COMMISSIONER CURTISS: So, it's not just the
6 goal. If all else fails, go back and look at the
7 regulations. And I want to pursue whether the problem
8 is with what the regulations require or whether the
9 hand-wringing is over the lack of clarity in the
10 regulations. 52.47, which defines what has to be set
11 out in the application, says that the applicant has to
12 submit, prior to design certification, that
13 information normally contained in certain procurement
14 specs and construction and installation specs and that
15 shall be available, complete and available for audit
16 if such information is necessary for the Commission to
17 makes its safety determination.

18 Now, I'm not sure why that's so unclear that
19 it takes a year and now an additional two months to
20 try to understand what that means. It was a subject
21 that was deliberated upon when the Commission voted.
22 The staff focused on that question in its memo to us
23 of March 7th. The votes all address that, or the ones
24 that spoke to that question address the question. The
25 language at the end of that clause, "if such

1 information is necessary for the Commission to make
2 its safety determination," which is something that the
3 Chairman suggested, is included in the rule, can we,
4 as an alternative to waiting two more months, get a
5 better feel for what is it right now? Is it a
6 question of whether they have to actually cart the
7 information here? Is it a question of whether they
8 had to make it available for us to audit?

9 MR. PARTLOW: That is part of the --

10 COMMISSIONER CURTISS: Or is it a question
11 of whether they have to have it at all?

12 DOCTOR MURLEY: But it's also part of the
13 fact that some of it is just -- cannot be available
14 until you actually build the plant.

15 COMMISSIONER CURTISS: Does that mean this
16 provision is unworkable or does that mean --

17 DOCTOR MURLEY: Part of it, yes. So, we're
18 going to have to interpret it, I think, or what the
19 staff is likely to have to do is to say, "Well, this
20 is as far as I can go with any amount of paper design
21 in front of me today. When the plant is actually
22 built, I'm going to require a test that verifies
23 certain features that I could not --"

24 COMMISSIONER CURTISS: Yes. I must say I'm
25 not comfortable compensating for the lack of design

1 information of what's required in Part 52 in the
2 application demanding less on that because we're going
3 to get more on ITAAC. That doesn't strike me as the
4 kind of thing that's moving us in the right direction.
5 I'll be anxious to hear what you have to say, either
6 now or as soon as possible. But the notion that we're
7 going to diminish the level of detail in the
8 application itself, as set forth in what's been agreed
9 upon in Part 52, by compensating for that and
10 compensating for that with additional information and
11 ITAAC, is one that, in my own personal view, I guess
12 has a high hurdle to clear if it's, in fact, going to
13 encourage standardization.

14 CHAIRMAN CARR: Well, you're also convincing
15 me that we shouldn't certify anything that hasn't got
16 a prototype, if you're saying they've got to build the
17 plant before we can really get down to those details.
18 I don't believe that. I think you can get the design
19 in sufficient detail that you can certify it. But --

20 DOCTOR MURLEY: Yes. Let me talk -- to give
21 you an example of the kinds of -- the level of
22 standardization that we think this process that we
23 were talking about would receive, would yield, and the
24 level of standardization that it wouldn't or the
25 differences, for example. The major structural

1 features, and Commissioner Remick, you asked yesterday
2 in the MARK II design, would we get different features
3 in the area below the reactor vessel, and the answer
4 is no. We think we would get identical layouts of
5 that feature.

6 So, the plant layouts, the plans and the
7 elevations, the building sizes, the room sizes, the
8 relative orientation of rooms, the containment size
9 and the design requirements of containment, that sort
10 of thing would be standard. When you walked into one
11 plant, you would see it the same. The primary system
12 component sizes would be the same. The number of
13 loops would be the same. The materials, the
14 fabrication standards and the operational
15 characteristics with components, we're quite sure we
16 could get standardized -- those standardized features.

17 The safety system features, for example the
18 type and the number of safety systems, the number of
19 trains, the sizes of components and certain operating
20 characteristics of those components, we think would be
21 standard.

22 CHAIRMAN CARR: When you say sizes, you mean
23 horsepower?

24 DOCTOR MURLEY: Yes.

25 CHAIRMAN CARR: Electrical ratings?

1 DOCTOR MURLEY: At least we would have --

2 CHAIRMAN CARR: Everything but the nameplate
3 data is the same.

4 DOCTOR MURLEY: Yes. We would have
5 enveloped at least --

6 CHAIRMAN CARR: Manufacturer's nameplate may
7 vary.

8 DOCTOR MURLEY: Yes.

9 CHAIRMAN CARR: I mean I hope that's what
10 you mean. I'm trying to --

11 DOCTOR MURLEY: Yes, but let me give you an
12 example -- I'm not totally sure -- an example where we
13 wouldn't probably get standardized, and that is the
14 turbine generator layout details would be different.

15 COMMISSIONER CURTISS: That's what I was
16 going to ask about. When you say layout --

17 DOCTOR MURLEY: Because Westinghouse and GE
18 and Brown Boveri turbines and generators are
19 different. So, some of the steam lines that come into
20 them and control valves and things like that might be
21 different. That condensate and feedwater systems --

22 COMMISSIONER CURTISS: Tom, on that question
23 at the last meeting, to make sure I understand what
24 you're saying, the turbine layout would be different
25 for different certified designs? At the last meeting,

1 I understood you to say that the turbine layout for
2 the Japanese ABWR is going to be different than the
3 turbine layout of the American ABWR.

4 DOCTOR MURLEY: Yes. That's because they
5 don't have enough room on their site to --

6 CHAIRMAN CARR: Can't go in line.

7 DOCTOR MURLEY: They can't go in line.
8 They've got to turn it. Ours would still be in line,
9 everyone you walked into, but when you went into that
10 building and one of them have a GE turbine and one had
11 a Westinghouse turbine, the details of that would be
12 different.

13 CHAIRMAN CARR: But everybody that had a
14 Westinghouse turbine would be the same.

15 DOCTOR MURLEY: I don't think the
16 certification would get to that level. I don't think
17 we could guarantee it by certification.

18 Part of the thing I'm getting at, and it's
19 just a thought -- I realize you gentlemen are thinking
20 a different way, I think the onus on standardization
21 in the final analysis has to be on the utilities to
22 get together and insist on it themselves. I think our
23 certification --

24 CHAIRMAN CARR: I agree with that and I
25 think that's what the EPRI design requirements

1 document is guiding them toward.

2 DOCTOR MURLEY: Yes, but more than that, I
3 think they have to order many of them at the same time
4 and use the same architect-engineer and buy the same
5 components from the same vendors.

6 COMMISSIONER CURTISS: Well, we wouldn't have
7 needed a Part 52 if the utilities would have learned
8 their lesson from the past 30 years? If the principle
9 here is that this is going to be a self-realizing
10 result because it's in the utility's own interest, I'm
11 puzzled as to why we put Part 52 on the books. Part
12 52, I think, says --

13 DOCTOR MURLEY: Well, I thought there were a
14 number of reasons for it.

15 COMMISSIONER CURTISS: Well, Part 52, I
16 think, at least says that independent of whether they
17 recognize that on their own, that the Commission has a
18 regulatory interest in encouraging standardization.
19 That's why we address questions like level of design
20 detail, questions about when after you've certified a
21 design you can change it, what the procedural rights
22 are if you intend to change a design. I must say I
23 disagree with the notion that the standardization as
24 an objective ought to rest by and large in the laps of
25 the utilities and we ought to be confident that it

1 will come to pass if that's where it rests.

2 DOCTOR MURLEY: I don't know. I didn't mean
3 to say that, if I did. We're going to, I think,
4 through this certification process, there are many,
5 many areas where we can -- where the certified design
6 will yield standard results. But at some level they
7 won't.

8 CHAIRMAN CARR: Go through a few more items
9 on your non-standard list.

10 DOCTOR MURLEY: Okay. On the things that we
11 believe will be standard -- just a second -- the major
12 electrical systems, the AC/DC on-site power supply,
13 the -- I've lost the list. But most of the major
14 electrical systems, we think, will be standard.

15 COMMISSIONER ROGERS: Well, just coming to
16 that, I was puzzling over your remark, your example
17 that you gave about the loading of the diesel
18 generators, that you won't know that until the plant
19 is built. Why not? Aren't all those things part of
20 the design as to how that loading is going to take
21 place, what's going to be on there? There might be
22 some difference between whether one item comes on a
23 little before another or something of that sort, but
24 the list is going to be the same, isn't it? Isn't
25 that really part of the engineering design that should

1 be there?

2 CHAIRMAN CARR: It's got to be designed or
3 they can't buy it.

4 DOCTOR MURLEY: It's got to be designed,
5 yes. To some extent, until they go out and get bids
6 and find what's available, they won't know the exact
7 nameplate rating. And when you have 100 components,
8 those uncertainties add up.

9 CHAIRMAN CARR: But they'll have a biddable
10 design and that's what -- if you're going to go out
11 and buy a 440 volt motor that gives us X number of
12 horsepower with such and such a coupling, I don't care
13 who builds it, but it's going to look like the same.
14 It may have a little different foundation. It would
15 be nice if they all had the same foundation and then
16 you could get some spare parts. But --

17 MR. THADANI: Faust can expand on that
18 issue.

19 CHAIRMAN CARR: Pardon?

20 MR. THADANI: Perhaps Faust can expand on
21 that.

22 DOCTOR MURLEY: Yes. We spent a lot of time
23 on that particular example. So, if Faust Rosa
24 could --

25 CHAIRMAN CARR: Would you identify yourself,

1 please?

2 MR. ROSA: I'm Faust Rosa, Chief of the
3 Electrical Systems Branch in NRR.

4 The problem with diesel generator loading
5 seems to be this. You don't know until actually the
6 plant is built what the actual loads on the various
7 motors, pump motors particularly, is and what pump
8 run-out conditions you might have and so on. So, it
9 has happened in the past that diesel generators have
10 not had enough margin designed into them to take care
11 of the actual conditions that exist when the plant is
12 operating.

13 Now, as far as standard plants are
14 concerned, if the rules or the regulations require a
15 sufficient margin to take care of all these
16 uncertainties, the problem could be resolved a lot
17 easier. But the concept of building margin into
18 equipment costs money and there is some differences of
19 opinion as to how much margin is required. So, we're
20 down to the bottom line where you have to depend on
21 testing that's performed after the plant is built to
22 actually determine whether the capacity of the diesel
23 is adequate or not.

24 CHAIRMAN CARR: And then what happens when
25 it flunks the test?

1 MR. ROSA: What has happened in some plants
2 is diesel generator manufacturer has proposed
3 modifications to increase the rating of the diesels
4 and, in other cases, there has been a redistribution
5 of loads between diesels such that you even out the
6 loads and come within the margin.

7 CHAIRMAN CARR: And most plants have already
8 used up whatever margin they had and have overloaded
9 their diesels as modifications came along. I have
10 zero problem with requiring them to have margin in
11 their diesel generating supply. I think that's smart
12 from our standpoint.

13 MR. ROSA: I'd have to agree with that.

14 CHAIRMAN CARR: Well, if they want to build
15 a certified design, then they're going to have to put
16 in margin. That's what a regulatory operation is, in
17 my opinion.

18 COMMISSIONER ROGERS: I just have a lot of
19 trouble with what you've said. I mean to me, it
20 sounds to me like --

21 CHAIRMAN CARR: Oh, I understand exactly
22 what you've said.

23 COMMISSIONER ROGERS: Oh, I understand what
24 he said. That doesn't -- they don't have a lot of
25 trouble with it. It sounds to me like what you're

1 saying is that there's no engineering design until you
2 put the whole thing together and turn it on and then
3 you know what the load is going to be.

4 CHAIRMAN CARR: No, he really said that
5 they've sharpened their pencils so much that if the
6 guy makes the cable run a little longer than they
7 thought, there's going to be a little more load on
8 that diesel than they figured and so they're going to
9 have to adjust it when they get there, and that's the
10 way they build plants because it saves money and I can
11 understand that. But I'm here to say they ought to
12 put a little margin in because not only does it give
13 them capability, it gives us safety when we want to
14 put something in later on, which we do to these
15 plants, and find out that we've overloaded their
16 switchboards or their capabilities.

17 COMMISSIONER ROGERS: Well, I come back to
18 what I said before. I still think it sounds to me
19 like it is not a good engineering design of that
20 system. I think that -- you know, to me, to tell me
21 that you're not going to know what the load on a
22 diesel generator is going to be until you build the
23 plant, it's much too late. If we designed other
24 systems with that kind of a philosophy in mind, half
25 the time they wouldn't work.

1 MR. PARTLOW: Commissioner, that sort of
2 takes us back to the issue of these ITAACs,
3 inspections and tests and so forth, where perhaps in
4 our review we would have it locked in that that diesel
5 generator and its loads had to pass certain
6 inspections and tests.

7 COMMISSIONER ROGERS: Oh, well, I'd assume
8 they'd be there, but we're talking about the design.
9 It's this issue of what you take out of design detail
10 and what you put in ITAAC. That's the key issue that
11 we're talking about here. I think what you're hearing
12 from some of us is that we're not too thrilled with
13 the idea of taking stuff out of design and putting it
14 in ITAAC.

15 CHAIRMAN CARR: And I'd like to go into
16 ITAACs with about a 99.9 percent confidence or we're
17 not going to turn up any problems.

18 DOCTOR MURLEY: Well, this is valuable
19 guidance you're giving us. We can --

20 CHAIRMAN CARR: Give it all day.

21 DOCTOR MURLEY: I think -- personally I
22 think it's going to come very close to requiring a
23 prototype to get the kind of detail that you're
24 talking about here.

25 CHAIRMAN CARR: That's what you just made

1 clear to me when you said that.

2 COMMISSIONER CURTISS: Let me ask a question
3 of a more general nature. If you take a look at the
4 essentially complete design information question and
5 what's required in the regulations --

6 DOCTOR MURLEY: Yes.

7 COMMISSIONER CURTISS: -- take the two
8 evolutionary designs that we know the most about, GE's
9 ABWR and CE's System 80+. Based upon what we know
10 today about the information that they have provided,
11 do they comport with the level of detail that you
12 think is contemplated in Part 52?

13 DOCTOR MURLEY: Not yet, no. But we're
14 still developing -- in some areas, like the structural
15 area, they're very close to the kind of information we
16 get in an FSAR and approve. So, in some areas, yes.
17 But in the other areas, like the electrical and the
18 I&C, they're nowhere near the detail and we're still
19 going out with Qs and As to get that detail.

20 CHAIRMAN CARR: But that's because they're
21 breaking ground pretty soon in Japan probably in the
22 ABWR. That's why that detail at the front end of
23 construction is better, yes.

24 DOCTOR MURLEY: Well, probably, yes. That
25 certainly helps. My understanding is they've spent

1 \$250 or \$300 million on the design of the ABWR,
2 including money, the Japanese money.

3 MR. PARTLOW: But that level of detail is
4 not part of the submittal here for the U.S. ABWR
5 certification.

6 CHAIRMAN CARR: Only because we haven't
7 required it.

8 COMMISSIONER CURTISS: Yes. Let me ask,
9 from the standpoint of what's feasible and how cost
10 effective it is, has anybody taken a look by
11 comparison at what the Canadians are doing with the
12 CANDU III in terms of their level of design detail and
13 what the French have done with their system? It seems
14 to me there's the -- particularly with the French, but
15 now with the CANDU III design, from what I'm hearing,
16 there's an example where the level of design detail
17 may come much closer to what we're looking for in Part
18 52. Why is it that that's feasible to do there,
19 but --

20 DOCTOR MURLEY: Some of my staff have had
21 discussions with CANDU, but I really don't think I'm
22 prepared to answer that.

23 COMMISSIONER CURTISS: I guess I'd encourage
24 you to take a look at that because it does seem to me
25 that the level of design detail --

1 DOCTOR MURLEY: Well, they are going to
2 build a plant, you know. So they've got the design
3 essentially done, as I understand it. So, they are
4 going to have a prototype.

5 CHAIRMAN CARR: I don't think they've got
6 that contract locked up yet --

7 DOCTOR MURLEY: They don't.

8 CHAIRMAN CARR: -- at the latest check.

9 DOCTOR MURLEY: But they've got the design
10 that they're selling pretty well firm.

11 COMMISSIONER ROGERS: Well, if I could just
12 say -- you know, one of the reasons that I think that
13 I'm very concerned about this resource question is
14 because I've always had in mind the kind of detail
15 that we've been talking about here, and the numbers of
16 people just don't look like they're adequate to do
17 that kind of a job.

18 DOCTOR MURLEY: They may not be.

19 COMMISSIONER ROGERS: And that's why --

20 CHAIRMAN CARR: I think if we get the level
21 of design detail we're talking about, it's much easier
22 to do the job, in my opinion. The design is
23 completed.

24 DOCTOR MURLEY: Well, if it's a billion
25 dollars and 20 million manhours of work that we've got

1 to do --

2 CHAIRMAN CARR: You certainly don't have to
3 go back and forth with the Qs and As.

4 COMMISSIONER CURTISS: And in the long haul,
5 it's an ounce of prevention versus a pound of cure, it
6 seems to me, because at some point down the line, what
7 we defer for ITAAC or what we defer for specific sites
8 is going to require resources when we get to that
9 point, the front end costs. I'm not sure whether it
10 comes out more or less expensive than what we're
11 talking about here, but --

12 MR. TAYLOR: I think this discussion
13 exemplifies the need to come to the Commission with
14 the position and get the Commission's own positions on
15 this. I hate to hearken back, but having spent 20
16 some years in basically submarine engineering and seen
17 the various evolution standardization of submarines, I
18 remember the days when the S5W submarines had GE
19 engine rooms and Westinghouse engine rooms, and
20 Commissioner Carr, I'm sure you do, and how the
21 various standardization practices evolved. In some
22 way --

23 CHAIRMAN CARR: But all the GE engine rooms
24 were alike.

25 MR. TAYLOR: They were all alike.

1 CHAIRMAN CARR: Yes.

2 MR. TAYLOR: Right, and all the
3 Westinghouse, but they were different from each other.
4 But these were the kinds of things that I think, in
5 miniature, we're struggling with. But it's been done.

6 COMMISSIONER CURTISS: Well, as I said, I
7 guess I said at the most recent meeting, both on the
8 ITAAC and the essentially complete design question,
9 I'd encourage you if the regulation is not clear or if
10 the regulation is clear but problematic, I guess I
11 would encourage you to come to the Commission as
12 promptly as possible with your thoughts because I do
13 think you hear from the people who participated in the
14 formulation that some clear indication about the level
15 of design detail, the question of how you trade off
16 that versus ITAAC reflected here.

17 DOCTOR MURLEY: With all due respect, the
18 regulation was not all that clear to the staff when we
19 got to arguing the details, but now we understand.
20 It's become clearer today, yes.

21 Let me mention on that, though, if I could.
22 The intent of the GE design team in San Jose mentioned
23 the example of two plants that are being built and
24 going to be built in Japan, K-6 and K-7. In one case,
25 Hitachi is going to be responsible for the balance of

1 plant. In the other case, Toshiba is going to be.
2 They're sitting side by side, the same utilities are
3 going to be different in the balance of plant parts of
4 the design because one company does things differently
5 and another company does things differently.

6 That's why I said, Commissioner Curtiss,
7 that the best -- if you really want standardization, I
8 think it's the industry that's got to force the
9 details that the architect-engineer provides in his
10 final design. That's the best way to force
11 standardization.

12 CHAIRMAN CARR: They probably should go talk
13 to Arkansas or Millstone and learn that you really
14 shouldn't build them with two different people. Palo
15 Verde has got the right approach there.

16 DOCTOR MURLEY: That was a foretaste of an
17 issue that's coming. I guess we've gotten some
18 guidance and probably we can come a little sooner now.

19 The third issue was the issue of NEPA.
20 Here -- I don't have it totally formulated in broad
21 detail. In view of the Appeals Court decision in
22 Limerick, we're facing the question of what design
23 alternatives we must consider in the certification
24 rulemaking process. For example, in Limerick, you
25 recall, the court decision held that we had to

1 consider SAMDAs, severe accident mitigation design
2 alternatives, and we did.

3 So, it raises a question should we consider
4 SAMDAs for each ALWR design? Should we consider
5 design alternatives for all other design features?
6 Does NEPA require, for example, that we require the
7 ABWR to consider a large dry containment in addition
8 to their basic design? These are the kinds of
9 questions that we're still struggling with.

10 Is there a generic way to handle the
11 consideration? We'll be working on those and framing
12 the policy issue and bring that to the Commission
13 also.

14 CHAIRMAN CARR: I only have one question on
15 that issue and that's on page 3 of the paper, I guess
16 it is. It said, "Although 10 CFR Part 52 does not
17 directly require an environmental review, the staff is
18 assessing the merit of performing a limited
19 environmental review to support design certification."

20 Why a limited -- what do you mean by a
21 limited environmental review? If you think you're
22 going to do it, why don't we just do it?

23 MR. MILLER: Because there's aspects of a
24 full fledged environment review that is very site
25 specific, Mr. Chairman. For example, if you look at a

1 typical environmental statement, it covers everything
2 from affects of aquatic biological life --

3 CHAIRMAN CARR: So, you'll do everything but
4 the site specific, is that what that means?

5 MR. MILLER: I think that that issue is what
6 we still have to formulate of how far we can actually
7 go on a general basis of design certification
8 standards. Whether it's just design alternatives,
9 whether we can go farther and try to envelope other
10 things and what the merits -- try to go back and look
11 at some of the other general cases that have been
12 studied over the years and try to generally write
13 generic environmental impact statements and how
14 valuable that they've been. I think that would be the
15 general --

16 CHAIRMAN CARR: I don't think the court
17 decision left us any alternative, did it?

18 MR. PARLER: The court decision is about
19 something else. As far as the envelopes are
20 concerned, the envelope is both for approving early
21 sites as well as for the different kind of design
22 certification as a part of the policy in the early
23 '70s. It was understood that you had to assume
24 certain things because you wouldn't know everything at
25 the beginning.

1 CHAIRMAN CARR: Okay.

2 DOCTOR MURLEY: Mr. Chairman, that concludes
3 our presentation. We've gotten some valuable guidance
4 on the level of detail issue. I should finally
5 probably mention that as we take this into account,
6 it's probably going to have an impact on the schedule
7 and resource information. I apologize for being so
8 obtuse and not understanding --

9 CHAIRMAN CARR: There will be, no doubt,
10 reverberations from more than just here.

11 DOCTOR MURLEY: Yes.

12 MR. TAYLOR: Yes, that is true.

13 CHAIRMAN CARR: Questions? Commissioner
14 Remick?

15 COMMISSIONER REMICK: How much time do we
16 have this morning?

17 CHAIRMAN CARR: Oh, we started early. We're
18 only 13 minutes into the meeting now.

19 COMMISSIONER REMICK: I see.

20 COMMISSIONER ROBERTS: No, no, no, no, no.

21 CHAIRMAN CARR: We got an early start this
22 morning.

23 COMMISSIONER ROBERTS: So we can adjourn
24 early.

25 COMMISSIONER REMICK: First let me express

1 concern on something we haven't discussed today. But
2 if you recall back in January when SECY-90-016 came
3 out, at an agenda planning meeting I asked a question
4 if the Commission was going to have briefings from the
5 staff on that document, which is an extremely
6 important document, and indicated that if we did not
7 then I was going to have individual -- because there
8 were certain issues I needed more information. I was
9 assured we would and my impression all along has been
10 that this meeting was going to be that type of staff
11 presentation and that the reason we held it on April
12 27th is we were waiting for ACRS feedback, which we
13 got late yesterday.

14 I urge the Commission at the earliest
15 possible time still to plan to have review of 90-016
16 at the earliest possible time. If other Commissioners
17 are interested, then I will set --

18 COMMISSIONER ROGERS: I'd be very
19 interested.

20 COMMISSIONER CURTISS: I'd assume we'd cover
21 it here, but with focus on process and the three
22 questions that Doctor Murley covered. I have a number
23 of questions -- not concerns yet, but just questions
24 about the staff's approach and the ACRS comments on
25 90-016. Maybe it would be possible to schedule an

1 early meeting separately, given the time that we've
2 spent already on the procedural side.

3 COMMISSIONER REMICK: That's what I would
4 suggest.

5 CHAIRMAN CARR: We can do that and the
6 sooner you get -- if we're going to wait --

7 MR. TAYLOR: I would urge you to schedule it
8 as soon as we could.

9 CHAIRMAN CARR: If we're going to wait to
10 get the briefing, we'd better hurry it and we'll
11 schedule --

12 COMMISSIONER REMICK: I'd hoped to hand them
13 our schedule about the middle of May. I think we have
14 a time when we're here and perhaps we could do that.
15 I think that's extremely important. I thought today
16 was --

17 CHAIRMAN CARR: I would hope we wouldn't
18 wait that long.

19 COMMISSIONER REMICK: I'm sorry?

20 CHAIRMAN CARR: I say I would hope we
21 wouldn't wait that long because if they're waiting for
22 decisions on those issues --

23 COMMISSIONER REMICK: If sooner, I would
24 prefer it, but I just looked at our schedule.

25 MR. TAYLOR: I think we would be prepared by

1 that time to give a specific briefing.

2 CHAIRMAN CARR: Before or -- well, we can
3 work that out.

4 COMMISSIONER ROGERS: As soon as possible.

5 COMMISSIONER REMICK: I have a number of
6 questions on resources. I'll try to shorten them down
7 because -- and, Mr. Chairman, any time you want to
8 pass on to somebody else, please do.

9 But one, I wonder if the staff has given any
10 thought -- and I realize this goes beyond just light
11 water reactors. It goes into passive -- other type of
12 reactors too -- to the thought that I threw out at the
13 collegiality meeting of the advisability of pooling
14 together reviews of future plants under one office so
15 that there is consistency in ownership. Has any
16 thought been given to that or do you want to provide
17 any reaction or not at this time?

18 MR. TAYLOR: I think I need more time to
19 respond to that. We've talked about that, but we're
20 not prepared to answer that today.

21 COMMISSIONER REMICK: In looking over the
22 document, 90-146, there are a couple of things that I
23 interpret that you will not be taking technical policy
24 matters to the ACRS until you have gotten resolution
25 by the Commission. I realize that that's certainly

1 possible, but it seems to me certainly as a
2 Commissioner I value that type of input from ACRS on
3 technical policy issues.

4 CHAIRMAN CARR: I get the impression they
5 were simultaneously going to go to the Commission and
6 the ACRS.

7 COMMISSIONER REMICK: Well, let's see if I
8 can find in my notes here --

9 MR. MILLER: I can address that question.

10 COMMISSIONER REMICK: Please.

11 MR. MILLER: The plan there is not to go to
12 the Commission before the ACRS. The ACRS comments
13 would, of course, be factored in prior to the
14 Commission making any decision on policy issues. I
15 think for time expediency, we would want to get the
16 policy issues together in a paper, get that to the
17 Commission, but have the opportunity to brief the ACRS
18 to try to get their input, similar to the letter that
19 you have before you that you received last night from
20 the ACRS, that their input can get factored into your
21 decisions.

22 COMMISSIONER REMICK: But I've found where I
23 get that impression, that's page 4 of the SECY
24 document where you indicate that you would go in 16
25 months to a Commission paper on policy issues and then

1 you would -- staff issue a draft SER and indicate any
2 open considerations still by the Commission and you'd
3 resolve those open issues and then go to ACRS on the
4 22nd month. So, basically, six months after you took
5 it to the Commission. That's where I got the
6 impression. But I hear what your intent is. There's
7 an inconsistent --

8 MR. MILLER: As you well know, we've had a
9 constant dialogue going amongst the several designs
10 with the ACRS, sometimes in subcommittee, sometimes in
11 full committee. Imbedded in the schedules is a
12 continuance of having many meetings with the ACRS.
13 Sometimes we're actually down there monthly for
14 subcommittee or full committee meetings. I would
15 anticipate that we would continue that activity. And
16 the ACRS would be kept informed along the way and I
17 think hopefully they would not be surprised by
18 anything when they actually saw the paper.

19 COMMISSIONER REMICK: Well, I would hope
20 that would be your intent. But when I read that, it
21 looked like it was turned around and so I was
22 confused.

23 I think I've made my point about I think
24 there's much that the staff can do with review, while
25 in parallel with waiting for policy decisions or even

1 EPRI requirements documents and so forth. I think
2 there's certain things the staff can do and I
3 personally think we should do. Ideally, in an ideal
4 world, we should do these things in series. But I
5 just don't know that we have that luxury at this time.

6 One of the things that concerns me still
7 about your schedule, in talking to the staff, they
8 indicate that the licensing review basis document for
9 ABWR has been extremely helpful and recommend that it
10 would be very useful in future reviews. It's been
11 very successful. Even though we have a Part 52 now,
12 there's still things that would be very helpful.

13 In talking to some of the vendors, they feel
14 the same thing, that -- in the case of GE certainly,
15 the license review basis document for the ABWR has
16 been extremely helpful. They would hope that there
17 would be one on the other designs that they're working
18 on. So, I think both sides feel it was helpful, like
19 to see it in the future.

20 But if I look at our schedule, the proposed
21 schedule, it indicates that the license review
22 document would not be completed prior to the time that
23 vendors are submitting their SAR to us. The EPRI
24 passive requirements document you indicate in this
25 schedule would be, at the earliest, December '91 and I

1 think, Tom, you indicated you're not sure that we
2 could even meet that and I understand what you're
3 saying. Then you indicate otherwise it would take at
4 least a year for license and review basis document.
5 That takes us up at least to December '92. But from
6 what Westinghouse has submitted to us on their AP-600,
7 they're planning to send their SAR in 1992 for review
8 and GE, their SAR in September or October of 1992.

9 DOCTOR MURLEY: Yes, this --

10 COMMISSIONER REMICK: So there's no time for
11 a licensing review basis document if we do them in the
12 series.

13 DOCTOR MURLEY: This is a key issue, I
14 think, for the Commission, quite frankly. We spent--
15 I took my senior staff out there, most of the people
16 at this table, to Palo Alto in March. We spent two
17 days talking with EPRI on the passive design and they
18 told us, for example, of what is in their current
19 requirements document, where they're heading. They
20 clearly specified three cases, among others, where
21 they've altered the design of the Westinghouse passive
22 plant. One is the -- EPRI wants taken out, the core
23 makeup system. They want -- they have no containment
24 spray and they have no ignitors in the containment.
25 Next week, Westinghouse presents a design to the ACRS

1 that has a core makeup system, containment sprays and
2 ignitors.

3 So, we've got to decide. I can't be
4 reviewing two things. My staff is confused, which is
5 which.

6 COMMISSIONER CURTISS: Well, let me -- let
7 me --

8 DOCTOR MURLEY: The Commission has given us
9 the guidance that we've put in this paper, which is to
10 do the EPRI review first.

11 COMMISSIONER CURTISS: I'm not sure what's
12 confusing about it. That was the subject of one of
13 the SRMs that the Commission put out, I think, in
14 December of '89 where I think we very clearly said for
15 the passive generation that the Commission wanted to
16 place the priority on the EPRI requirements document,
17 A. B, if the review of a preliminary nature of the
18 individual designs couldn't be undertaken from a
19 resource standpoint, the resources were going to be
20 devoted to the EPRI requirements document; and C, that
21 the significant technical questions should be
22 addressed first in the EPRI requirements document to
23 achieve the objective of insuring that the EPRI
24 requirements document drove the result and to avoid
25 the situation that I think we're faced with now on,

1 for example, the ABWR and the evolutionary
2 requirements document.

3 If you go back and look at those staff
4 requirements memoranda and the extensive deliberation
5 that the Commission undertook over the course of the
6 last year, I do think it's an important question. I
7 think the question of what relationship the
8 requirements document will have to the individual
9 vendor designs a year ago was not clear. At this
10 point, it seems to me that with some minor
11 wordsmithing on what to do with, say, the Westinghouse
12 passive design in terms of how many questions and how
13 much review we can undertake, I personally think that
14 the Commission's position is abundantly clear, that
15 the EPRI requirements document ought to be the vehicle
16 for addressing these technical questions.

17 DOCTOR MURLEY: I was responding to a
18 question that Commissioner Remick asked, of why does
19 the LRB come at the end, at the time that Westinghouse
20 would submit their design, and that's the reason.

21 COMMISSIONER CURTISS: Yes.

22 CHAIRMAN CARR: Well, but let me ask a major
23 question. If we do the EPRI design requirements
24 document first and solve the problems that should be
25 solved, doesn't that obviate the need for an LRB? It

1 certainly looks like it. As I look through all this,
2 if we did that, then we could do away with all that
3 licensing review basis document and work from there.
4 That's the intent.

5 DOCTOR MURLEY: If the designers commit to
6 follow it exactly. They have not done it. They said
7 they do it as far as they can --

8 CHAIRMAN CARR: That's their problem. As I
9 understand it, the utilities have committed to buying
10 something in accordance with that document and if the
11 designers design something else, they may not have a
12 market.

13 COMMISSIONER CURTISS: Let me add a point to
14 that. Isn't it more precise to say that the vendors
15 have followed the EPRI requirements document where
16 those issues have been addressed? So, when we started
17 out with the evolutionary EPRI requirements document,
18 the vendors were roughly two months behind and agreed
19 to that horse/cart relationship, if you will, until we
20 got to the Chapter 5 issues.

21 So, in large part, the vendors for the
22 evolutionary plants have complied with the
23 evolutionary requirements document. It's when we got
24 to a situation where the vendor design reviews got out
25 ahead with the case of GE and CE where on source term

1 hydrogen and containment we've got a disconnect now
2 between what EPRI is proposing in the requirements
3 document and what remains to be resolved in Chapter 5
4 and the individual vendor design reviews. That's the
5 problem that I --

6 CHAIRMAN CARR: Well, and I --

7 COMMISSIONER CURTISS: I think we're trying
8 to --

9 CHAIRMAN CARR: I must admit I acquiesced
10 to looking at those things in parallel only because I
11 was under the impression the staff had agreed with
12 those two vendors that they would do it on a licensing
13 review basis. And so, even though I didn't like it, I
14 wanted to get the EPRI design review done first, since
15 there was already an agreement. There isn't any
16 agreement like that for the passive plants.

17 MR. TAYLOR: No, there isn't.

18 CHAIRMAN CARR: And so, the time to put our
19 foot down is now and say we're going to solve it here
20 and get rid of those licensing review basis type stuff
21 and do it right.

22 DOCTOR MURLEY: And we did understand that,
23 and we did embed it in this process. And that's why
24 it turns out, Commissioner, that the LRB people would
25 come at the time that Westinghouse and GE said they

1 would be submitting the design.

2 COMMISSIONER REMICK: The problem I have is
3 both the staff and the vendors saying it's useful.
4 Maybe it's not needed, but I don't think it's going to
5 be useful if it comes after you get the submittal of
6 the final design.

7 CHAIRMAN CARR: It's very useful if they're
8 trying to beat their competition. If they can get
9 their piece in first, get it approved and proceed and
10 not wait for anybody else, it's very useful. They see
11 a market and they're going to try to get there first,
12 and I appreciate that. I'm not -- you know, where you
13 stand on this issue is going to depend on where you
14 sit, and I happen to sit here.

15 COMMISSIONER CURTISS: Two comments.

16 The Chairman raises an interesting proposal.
17 If you have an EPRI requirements document that is
18 comprehensive in detail, do you need an LRB? And I
19 have to confess, I haven't given a lot of thought to
20 that, but it's an intriguing -- if nothing else, from
21 the standpoint of resource savings.

22 DOCTOR MURLEY: It will, in effect, be the
23 LRB.

24 CHAIRMAN CARR: It'll be the LRB.

25 MR. TAYLOR: The vendor would endorse it.

1 COMMISSIONER CURTISS: Second comment. That
2 doesn't necessarily resolve the question of while
3 you're working in the EPRI requirements document, what
4 discussions, if any, should you have on the individual
5 vendor design reviews.

6 CHAIRMAN CARR: Well, I think Charlie is
7 right in that you've got to go watch what they're
8 doing as they're testing and that kind of thing.

9 MR. TAYLOR: I think you do. I think you
10 do. I think we'd be wrong not to.

11 CHAIRMAN CARR: I'm not fighting the
12 interaction between those.

13 COMMISSIONER CURTISS: Yes. The approach
14 that the staff has proposed on that, where in fact I
15 think in response to the Westinghouse letters, one
16 that I'm personally comfortable with, it seems to me
17 you need some interaction. But I wouldn't get so out
18 front on the interaction that you're making the
19 significant policy decisions, like we are on GE's
20 evolutionary plant, in the individual vendor design
21 review before you've addressed those in the EPRI
22 requirements document. I take it that's what the
23 staff--

24 MR. TAYLOR: We agree.

25 CHAIRMAN CARR: And the vendors who are

1 working, quote, "with the staff," trying to get all
2 these answers, in my opinion should be working with
3 EPRI trying to get the -- that argument should be
4 between the EPRI design requirements people and the
5 vendors in the design of those plants.

6 MR. TAYLOR: And where they're dealing with
7 testing and passive features where the staff really
8 needs that exposure to that technology and the
9 information --

10 CHAIRMAN CARR: No argument.

11 MR. TAYLOR: -- it's possible that we be out
12 there.

13 COMMISSIONER REMICK: And I support you
14 getting out doing that. No question about it. But
15 does that mean you'll not consider a conceptual
16 preliminary safety information document of a vendor of
17 a design at that time? You'll not touch that?

18 CHAIRMAN CARR: That's what we've told them
19 to do.

20 COMMISSIONER CURTISS: I think we've said,
21 if it gets to the point where you're going to reach a
22 position on a technical question that's common to all
23 of the plants within the passive class, that that
24 issue ought to be addressed in the requirements
25 document of EPRI. That's not the case now for

1 evolutionary, because of the timing question that the
2 Chairman alluded to.

3 I doubt that we'll have it, but we could
4 have different resolutions on hydrogen, for example,
5 because that's not going to be resolved in the EPRI
6 requirements document prior to GE, for example, in
7 earning the containment. I'm not uncomfortable with
8 that approach, but it seems to me that that's the
9 horse that we're trying to get before the cart when it
10 comes to the passive designs.

11 If the review of the licensee's submittal on
12 an individual design requires or calls for the staff
13 to make a decision on a common -- a technical issue
14 common to all of the designs, my position is I think
15 we ought to resolve that in the EPRI requirements
16 document.

17 COMMISSIONER REMICK: Let me ask a question.

18 CHAIRMAN CARR: It's your question time. Go
19 ahead.

20 COMMISSIONER REMICK: Thank you.

21 Let me ask a question on that. The PSIDs,
22 do they contain only that type of policy issue that
23 should be in the EPRI requirements document, or are
24 there other aspects of a PSID that the staff could be
25 reviewing that was not tied to policy?

1 CHAIRMAN CARR: What's a PSID?

2 COMMISSIONER REMICK: Preliminary Safety
3 Information Document or conceptual design, what you've
4 got on the PRISM, SAFER, modular HTGR; I think what
5 PIUS is about or CE is ready to send in on PIUS or has
6 already sent, and so forth; and I guess, what
7 Westinghouse has sent in on the AP-600 last March.

8 MR. MILLER: We have a document from
9 Westinghouse, if I could make a comment on it, because
10 we've been following that some lately. In dealings
11 with Westinghouse recently, it's become apparent to us
12 that even the information that was presented in that
13 document is somewhat out of date, because the design
14 itself is evolving. They're doing different things.
15 They're having the dialogues with EPRI and the
16 industry to try to resolve their differences. The
17 information, the design as it was stated at that time
18 has changed some now and will continue to get changed.
19 And I guess I ask the question --

20 COMMISSIONER REMICK: It's been over a year
21 since we've received it.

22 MR. MILLER: Yes. I'd asked the question of
23 if we start getting in too much to that, not only may
24 we be looking at information that may be out-dated,
25 but secondly, we get into that question of, again, how

1 much would we end up getting out ahead of what we're
2 trying to achieve through the EPRI effort? And I've
3 been very cautious not to violate that balance.

4 COMMISSIONER REMICK: Have we told the
5 vendor that, or is this the first he's gotten notice
6 of that?

7 MR. MILLER: I've told the vendor that
8 personally.

9 CHAIRMAN CARR: I've told the vendors that
10 regularly.

11 COMMISSIONER REMICK: But I'm talking about
12 the specific document we received last March.

13 MR. MILLER: Yes.

14 COMMISSIONER REMICK: Have we told them why
15 we're not reviewing it?

16 MR. MILLER: Yes.

17 COMMISSIONER REMICK: Okay.

18 I think, Mr. Chairman, I should defer to
19 other questions.

20 CHAIRMAN CARR: Tom?

21 COMMISSIONER ROGERS: Oh, I think we've
22 covered a lot of ground here. I don't think I'll ask
23 any more.

24 COMMISSIONER CURTISS: Well, I've got some
25 more ground to plow then. Let me take a cut at it.

1 CHAIRMAN CARR: I haven't even got my horses
2 hooked up.

3 COMMISSIONER CURTISS: Well, let me start
4 with the process, because as I alluded to earlier, as
5 you mentioned earlier, the Commission spent a good
6 deal of time last year, beginning with the staff
7 requirements memo on Part 52, and then with a series
8 of staff requirements memoranda through, I think,
9 December of '89, laying out the process for achieving
10 three or four things:

11 Number one, defining when the Commission
12 wanted to be involved on significant technical
13 questions;

14 Number two, defining when the ACRS ought to
15 be involved;

16 Number three, establishing a mechanism that
17 would ensure that the priority that we've defined for
18 the EPRI requirements document actually got infused
19 into the review of the individual vendor designs.

20 And as I looked at the staff's analysis of
21 the process in the first SECY paper that came up, 90-
22 65, correct me if I'm wrong, I take it what you're
23 saying there is that that process established back in
24 '89 was at least internally consistent. It made sense
25 and worked together. Is that a fair assessment of the

1 process that was set forth in the SRMs? I'm not
2 asking you to do anything that looked like this.

3 MR. MILLER: As much as we tried to search
4 to see if there was anything in the process itself
5 that created a logic problem, it did track logically.

6 COMMISSIONER CURTISS: All right.

7 Second, I gather your principal concern with
8 that was the time that it would take to actually go
9 through the process of coordinating with the
10 Commission and the ACRS and ensuring that the
11 individual vendor design reviews and the EPRI
12 requirements document were reviewed in that kind of
13 disciplined manner. There's a time question, in fact,
14 two to three years of delay for one of the reactor
15 designs, as I recall it.

16 I guess my reaction to the subsequent paper
17 that came up in SECY-90-146 is two or threefold.

18 Number one, in looking at that, it's not
19 clear to me how different the process is that you've
20 described there from what we were doing before the
21 various memoranda of '89 were formulated. How would
22 your process, as you've set it out in 90-146, differ
23 from what we were doing prior to '89 or what we were
24 intending to do?

25 MR. MILLER: You mean, prior to having

1 received the Commission guidance in December?

2 COMMISSIONER CURTISS: That's right. Is it
3 business as usual or is it --

4 MR. MILLER: No, I think --

5 CHAIRMAN CARR: I'd say prior to our
6 standardization --

7 COMMISSIONER CURTISS: Part 52.

8 CHAIRMAN CARR: -- Part 52.

9 MR. MILLER: I think the major difference,
10 Commissioner Curtiss, is that obviously the Commission
11 is very interested in being involved in resolving
12 policy issues up front. We want to make sure that as
13 we identify policy issues, we would get them to the
14 Commission.

15 I think if you were to go back way back when
16 the reviews were embarked upon, the staff may have, in
17 their thinking at the time have had a different
18 threshold for what they considered to be policy
19 issues. And in that case and time, many of the things
20 that will now come before the Commission for
21 consideration may not have been envisioned to come up
22 here at that point in time. And I think that would be
23 one major difference that I would see. You know,
24 policy issues will come up through the ACRS,
25 Commission, formally, try to get formal guidance back.

1 COMMISSIONER CURTISS: That's what I thought
2 we were trying to do with the staff requirements
3 memos, though, that came down in '89 -- I thought we
4 did -- and as you've indicated in the first SECY
5 paper, put together a process there that at least
6 worked from the standpoint of its internal
7 consistency.

8 What's the difference between what we
9 proposed in the SRMs and what the staff is proposing
10 in 146 in terms of the three issues I've identified:
11 Commission involvement in significant policy
12 questions, the role of the ACRS, and then a process
13 for bringing the EPRI requirements document and decisions
14 to bear on individual vendor designs?

15 MR. MILLER: Okay. I think what we will try
16 to do in this latest process that's been proposed is
17 still try to identify policy issues as soon as we can
18 and get them up before the Commission. But in the
19 paper, we identify the fact that we'd like to not
20 consider that to be a hold point in the review. Maybe
21 there was a miscommunication on our part in assuming
22 that that was the case from the former guidance.

23 We would then go out and say, okay, these
24 are the policy issues, Mr. Vendor, Mr. Applicant, that
25 are before the Commission. We are proceeding. We

1 want to let you know that we can proceed to the review
2 and do something similar to maybe what we've done in
3 EPRI Chapter 5, where the document itself is issued,
4 but the applicant is alerted to the fact that there
5 are policy issues before the Commission, and until
6 those policy issues are resolved, these at this point
7 in time are staff positions, but not hold up getting
8 the formal feedback to the applicant. Because, as
9 Commissioner Remick pointed out, there are many areas
10 that are embedded in with the policy issues that come
11 out in an SER that we could resolve because they're
12 still within the scope of the SRP, if you will,
13 review.

14 COMMISSIONER CURTISS: Well, I guess in view
15 of the time, I'm not going to -- I've read the --

16 DOCTOR MURLEY: Just to clear up,
17 Commissioner, in our SECY paper, 90-065, where we laid
18 out our understanding of the process, and there were
19 some long schedules there, we understood, in fact from
20 some of your questions and from discussions with
21 Commissioners, that you were interested as could we
22 speed this up; do we have some proposals to get what
23 the Commission would like; at the same time, make it a
24 little more efficient.

25 COMMISSIONER CURTISS: That seems to me it's

1 the key. I'm all in favor of streamlining the
2 process, but as -- well, I've expressed my own concern
3 at the time that -- the Commission looked at this
4 process after Part 52. I do think there was some
5 concern that three matters, three concerns on my part,
6 led to thinking that that was a fairly sound process.

7 Number one, the licensing review basis on
8 the GE plant, I think, needed more Commission
9 involvement and addressed significant policy
10 questions.

11 Number two, it didn't appear to me at the
12 time, at least in early 1989, that there's a clear
13 process for establishing the relationship between the
14 EPRI requirements document and the individual vendor
15 design reviews. I think we've reached the point where
16 we've established that, but at the time that was the
17 second objective that we were seeking to achieve in
18 the staff requirements memoranda.

19 And then third, it didn't seem to me that
20 there's any well defined discipline process for
21 Commission involvement in the significant policy
22 questions. I realize that's the subject of evolution
23 as the staff looks at the new designs, but I'll go
24 back and take a look carefully at the paper. And
25 obviously, we need to vote on that, make a decision

1 about whether the process that you've laid out in fact
2 streamlines the process consistent with what the
3 Commission would like to accomplish.

4 I must say the discussion of the essentially
5 complete design question here today leaves me with two
6 impressions.

7 One, the process itself may not be the
8 pacing item here, maybe matters like essentially
9 complete design --

10 MR. MILLER: Could be.

11 COMMISSIONER CURTISS: -- and not the
12 Commission process. If that's the case, we need to
13 know that.

14 And two, the kind of feedback that I think
15 you've gotten here on the essentially complete design
16 issue augurs in favor, in my view, of greater, more
17 formal and more regular Commission involvement, these
18 kinds of sessions and the kind of process that we
19 established in the staff requirements memoranda. I'll
20 go back and take a look at that paper carefully against
21 what we've established to date to see if it's worth
22 abandoning that process, but those are my preliminary
23 concerns.

24 Just one final comment, really, on the
25 subject of the next meeting, on the technical

1 questions that we're going to address, really sort of
2 a procedural matter. If you would take a look at the
3 suggestions, I think, of both the General Counsel and
4 the ACRS on the question of rulemaking for technical
5 requirements, that's a subject that I'd like to talk
6 about at the next meeting. I won't pursue it here,
7 but whenever that's scheduled we can pursue that. I
8 think that's an important topic.

9 That's all I have.

10 CHAIRMAN CARR: Well, I'll shorten up my
11 comments here, because we're obviously not through
12 with some of these issues.

13 But I guess the first thing I would address
14 is on page 2, when you say, "the Commission's
15 objectives, as understood by the staff." When I read
16 those, I wasn't sure that they were the Commission's
17 objectives. Certainly, number one is. We want to get
18 the policy issues identified as early as possible.

19 I really haven't heard us tell you to hurry
20 up those reviews of ALWRs. I've heard -- we've asked
21 questions saying, "Can you? Is there a way we can?"
22 But I don't know that we've really beat on you and
23 said, you know, you've got to cut some time out of
24 this schedule. Maybe I'm wrong in that, but I think
25 it's been more of a have you really scrubbed it,

1 rather than hurry up.

2 Certainly three, close coordination with the
3 Advisory Committee on Reactor Safeguards, is. But I
4 think the objective that you've left out is that the
5 EPRI design requirements drives the problem, certainly
6 in the passive. And, as I say, it's too late to do it
7 on the LWRs, but that was one impression I got.

8 DOCTOR MURLEY: Although, Mr. Chairman, we
9 didn't state it there, in fact that was a key
10 guideline in this, which is that the --

11 CHAIRMAN CARR: Yes. I recognize you know
12 that implicitly, but --

13 MR. TAYLOR: By omission. It could have
14 been there.

15 CHAIRMAN CARR: So I guess, when I got
16 through with this, my view was what's the hurry? Why
17 are we trying to save two months, when we agree the
18 schedules aren't worth -- I mean, they're only a wild
19 guess in the first place and we're coming up with two
20 months.

21 It seems to me, as Commissioner Curtiss
22 says, the process right now is very important.
23 Because, as you say, we don't have a procedure for
24 doing these things. It's better we get one that works
25 and we know we can do it with that procedure, and so

1 we do it in some kind of a manner that we can all
2 agree on.

3 It looked to me like in the middle of page
4 2, when you were talking about the revision of the
5 process, that we're going right back to where we were
6 before. We're going to do a little bit of everything
7 for everybody and we're going to review them as they
8 come in and try to get them back out and take care of
9 all the comers as best we can, but I don't think
10 that's the intent.

11 We've discussed already at the bottom of the
12 page the three major impacts. When I read the level
13 of detail of design information, I just said not good
14 enough. We don't -- reasonable assurance is not what
15 I'm looking for. What I'm looking for is a design, so
16 that your question's answered. You know, you can go
17 back and -- what you guys end up doing, in my opinion,
18 is you end up designing the machine in a lot of cases,
19 because they come in, you don't like what you see, so
20 you go back and ask the questions and you guide them
21 finally into the answer that you need to meet the
22 safety requirement. If you've solved those problems
23 in the EPRI design requirements first, I think you
24 could save a lot of time. That's just an opinion.

25 And I've already mentioned that I think all

1 the licensing review basis work seems to me overtaken
2 by events. If we do the EPRI design requirements
3 document first, certainly it ought to be.

4 Every time I read the word "assuming," or
5 "we assume" in these things -- and there's a lot of
6 assumptions in this piece of paper on your schedules--
7 one of the most important ones, it said that the
8 Commission would approve the issuance of the final
9 licensing review based document even if some policy
10 issues are still under consideration. Those issues
11 could be resolved during the design review, but they
12 could also not be resolved during the design review.
13 They could never be resolved if we didn't.

14 So the milestones assume that the resolution
15 of policy issues do not require major changes in the
16 proposed design. You and I share that that assumption
17 is probably -- all these assumptions are kind of iffy.
18 This is really a best possible outcome.

19 MR. TAYLOR: Yes, it is.

20 DOCTOR MURLEY: Everything goes with it,
21 yes.

22 CHAIRMAN CARR: I guess the only other
23 comment that I would make at this point in time is, in
24 the recommendations, when you note that the staff is
25 reprogramming some of the available resources to

1 achieve gains in the schedules, I guess my real
2 question is from where? If you've got resources that
3 you're not putting on the priorities, then go by the
4 priorities would be my feeling. But I'll just throw
5 that out.

6 DOCTOR MURLEY: Yes. Just to answer that,
7 at this stage it has been in the projects area where
8 we've reprogrammed most of these.

9 MR. MILLER: In addition, we've folks in our
10 organization who have a lot of inspection experience
11 and have worked maybe in the industry and have written
12 procurement specs and construction specs, and they're
13 now trying to focus on this issue of ITAACs.

14 DOCTOR MURLEY: We've taken particularly one
15 senior person out of the Inspection Branch to work on
16 the ITAACs question, because he's very experienced in
17 start-up testing and construction.

18 CHAIRMAN CARR: Well, in your opening
19 comments, I think you're absolutely right in your
20 priorities, and we discussed a lot about this today.
21 But this is not as high priority as plant life
22 extension. It's not as high a priority, in my
23 opinion, as safety of current plants.

24 So I think you've got the picture right.
25 Those assets are being used in the right places. And

1 as I say, if we don't meet these schedules in here, so
2 far -- and I've encouraged the people who generate
3 electricity out there to come in and knock on my door
4 and tell me I'm holding them up because they want to
5 build a plant tomorrow, and I haven't gotten anybody
6 knocking on the door. So there's no reason that we
7 can't do this in an orderly fashion, in my opinion,
8 and get it done right.

9 COMMISSIONER REMICK: But when they knock on
10 the door, it might be too late for us.

11 CHAIRMAN CARR: In my opinion, it's already
12 too late. They should have been knocking on the door
13 five years ago, because the country is in trouble
14 already in building base load power plants.

15 COMMISSIONER REMICK: I agree.

16 CHAIRMAN CARR: And while I don't want to
17 get in their way, if we're going to build another 100
18 plants out there, I don't want to build them the same
19 way we built the last 100.

20 COMMISSIONER CURTISS: That seems to me to
21 be the key point, that the process that we establish
22 here and the approach that we take on the technical
23 issues that will be addressed at the next meeting at
24 this point are vitally important. It's one of the
25 reasons that I think the Commission has devoted so

1 much time on this subject and increasingly over the
2 past year or so.

3 If it comes down to a question of getting
4 the process right and getting the decisions
5 established in a way to encourage the standardization
6 that Part 52 seeks to achieve versus a person knocking
7 on the door, I think we ought to listen to the knock,
8 but I don't think that ought to drive the process if
9 we think the process and the decisions are necessary
10 to achieve the objectives that we're trying to
11 achieve.

12 CHAIRMAN CARR: And the EPRI requirements
13 document schedule you've got in here is only a few
14 months from what you're going to do anyway. I mean,
15 two or three. And I'm not sure the accuracy of the
16 guesses in here are any better than that.

17 We also don't want to lose sight of that
18 fact that this is only the start of the process.
19 What's really -- what really worries the builders of
20 the plants out there who are going to generate
21 electricity is whether they're going to be able to
22 start building the plant and operating it without a
23 lot of time in between. This is only the first piece
24 of that action. If we had a certified design today,
25 their worries are still not gone. Their worries are

1 going to come in the ITAACs piece of the action and in
2 "Are we going to have that second hearing. How well
3 can we control that that's going on?"

4 So it's important we get this piece in
5 place, but it's not the thing that's keeping the
6 utilities, in my opinion, from building today.
7 They've got a lot of other concerns that's holding
8 them up.

9 Having said that --

10 COMMISSIONER REMICK: But, Mr. Chairman, the
11 decision on which design to buy could be very strongly
12 dependent on which one looks like it's certified or
13 going to be certified. And that can influence their
14 decision, especially if they wait so long that they
15 have to build now.

16 CHAIRMAN CARR: Am I not right in that they
17 decided to go to the EPRI and get together on what the
18 utilities wanted to build versus what the vendors were
19 trying to sell them?

20 COMMISSIONER REMICK: Yes. Unfortunately,
21 the EPRI process has been drug out. I guess --

22 CHAIRMAN CARR: Well then, when they come
23 knocking on my door, I'll send them to EPRI.

24 COMMISSIONER REMICK: But I wonder how much
25 we've contributed to that.

1 CHAIRMAN CARR: Well, I'm not sure we've
2 contributed a delay yet. The only thing hanging right
3 now, as I can see, is 9016 issues, and we need to get
4 those behind us. And so, I look forward to that next
5 briefing.

6 COMMISSIONER REMICK: Could I respond in
7 part to something you did say --

8 CHAIRMAN CARR: You can.

9 COMMISSIONER REMICK: -- which I come out
10 slightly differently --

11 CHAIRMAN CARR: You can have all the time
12 you want.

13 COMMISSIONER REMICK: Thank you.

14 I certainly am not urging the staff to speed
15 up by itself. That's not the purpose. I want us to
16 be able to do the thorough job that we have to for
17 both the fact that we're facing new designs and we're
18 facing a standardized certification design process
19 that we haven't done before. And I want us to do it
20 right, so that there's credibility to the process.

21 And I think it's extremely important that we
22 provide early feedback, because I've seen cases where
23 staff input -- I know ACRS input -- has affected the
24 safety of designs that we're talking about.

25 This question of we have a number of

1 reviews, I personally think this agency has an
2 obligation to review when things are formally sent to
3 us. I think we have an obligation, within our
4 ability, to do that review --

5 CHAIRMAN CARR: Within limited resources.

6 COMMISSIONER REMICK: That is absolutely
7 right. -- and put the proper resources on to do the
8 best possible responsible job; if we don't have it, to
9 identify those resources so at least others are aware
10 of it.

11 Now one of the things that does concern me
12 about schedule, it's my impression -- I was not here
13 as a Commissioner -- that we agreed to a target date
14 of December, 1990, for an FDA for the ABWR. There are
15 people out there who are questioning does this agency
16 have the capability anymore to license anything. Is
17 there stability to the process?

18 There's nothing magical about December '90
19 for me. I'm more interested we do the best possible
20 job. But if we miss it by far, I think the
21 credibility of this agency is in question. Do we have
22 the ability to do something? Can we manage the
23 process, or are we going to hold things up?

24 So I think the credibility of the Agency,
25 the stability of the licensing process, our management

1 capability are questions that I'm concerned about. I
2 only want us to do the best possible job, do it with
3 the best resources, identify those resources. That's
4 what's driving me. So it isn't to move ahead to see
5 this -- to meet a particular schedule. It's to do
6 those and yet still have a credible and responsible
7 process.

8 COMMISSIONER CURTISS: The difficult
9 challenge, it seems to me, is that -- just take the
10 vendor designs and the EPRI requirements document--
11 those very same kinds of commitments, though not in an
12 LRB, were set forth in the early '80s on the EPRI
13 requirements document. And the question that we've
14 had to address is what relationship should we
15 establish between the EPRI document that was going
16 this way and the vendor designs that were going this
17 way. And now is the juncture. Last year was the
18 beginning of the opportunity to take a look and define
19 that relationship. I do think that the EPRI
20 requirements document is an important part of this
21 process.

22 I've been intrigued to hear the comment that
23 technical issues are difficult to resolve in the
24 context of the EPRI process, because EPRI can afford
25 to sit it out. They don't have any interest. They

1 don't have any application that they're pursuing.

2 But the fact of the matter is, I don't view
3 the EPRI effort as a rogue effort. It's a collection
4 of the utilities, the ultimate customers that are
5 going to make the decision on what and when to buy
6 plants. And if the collective representation of the
7 utilities through the EPRI process says "We want to
8 sit it out. We want to wait until we resolve the
9 hydrogen issue," it seems to me that's as important as
10 anything in trying to establish a process that will
11 ensure that those people who actually build and
12 operate the plants, the utilities, do it in a way that
13 comports with Part 52.

14 I don't happen to think that EPRI can afford
15 to sit it out, because I don't think all the utilities
16 would sit it out forever. I think there will be a
17 point where they'll come in and say, okay, we're ready
18 to resolve the issues. But it may be a point later
19 than when individual vendors are ready to resolve that
20 issue, and I think that's the balance that we've tried
21 to strike in the relationship.

22 DOCTOR MURLEY: We probably haven't stressed
23 that too much, although it's underneath this. The
24 interests of EPRI and the interests of the vendors are
25 not congruent on these issues.

1 COMMISSIONER CURTISS: Certainly.

2 DOCTOR MURLEY: EPRI has -- for whatever the
3 reasons, they want certain things and certain
4 features. The vendors frequently like to make a
5 decision and get on with it, for purposes of,
6 sometimes, foreign sales. I don't know.

7 CHAIRMAN CARR: Getting there first.

8 DOCTOR MURLEY: But in any case, they do
9 diverge. And our guidance is clear from the
10 Commission, it seems to me. We focus on the EPRI
11 requirements. And that means that where there are
12 differences with the vendors, we have to let that sit.

13 COMMISSIONER ROGERS: Well, I'd just like to
14 say that I more or less agree with everything I've
15 heard here from my fellow Commissioners. But I do
16 think there is the possibility that a third party may
17 enter this picture, and that is the independent power
18 producers, who are neither members of EPRI nor -- or
19 they might be vendors. And they may have a totally
20 different approach here. They might even be the first
21 ones to come to us with a proposal to build. I'm not
22 sure that we know that that's not the case at all.

23 CHAIRMAN CARR: Our guidance is clear,
24 though. The first guy that comes in and says, "I want
25 to build," goes to the front of the line.

1 MR. TAYLOR: We got that.

2 COMMISSIONER REMICK: Build what?

3 COMMISSIONER ROGERS: I'm just saying that
4 there is another element out there that we want to be
5 aware of that may pose some totally new problems for
6 us. I won't pursue it further. I'm finished.

7 COMMISSIONER REMICK: I've said enough, Mr.
8 Chairman.

9 CHAIRMAN CARR: Well, I'd like to thank the
10 staff for this presentation. I'm not sure they'd like
11 to thank us, but --

12 Currently, the Commission has six papers
13 before it dealing with various aspects of advanced
14 light water reactor reviews, including certification
15 issues, the process and schedule for evolutionary and
16 passive plant reviews, staff proposals related to
17 three specific plant design reviews, and the safety
18 goal implementations. Since the staff's estimate of
19 schedules depends on Commission guidance in many of
20 these areas, I would urge those of my fellow
21 Commissioners who have not already done so to vote on
22 these papers.

23 In reviewing the process and scheduling
24 paper, SECY-90-146, I noted that NRR anticipates
25 asking for additional FTE in FY '92 and '93 for this

1 review effort. I would remind the staff to use the
2 five year planning process to request these additional
3 resources, and to clearly indicate during the review
4 whether the additional resources are based on the most
5 optimistic schedule presented in the scheduling paper
6 or on the most realistic schedule. And as we've
7 mentioned, we'll have an early brief on SECY-90-016 so
8 we can get those issues behind us.

9 Do any of my fellow Commissioners have
10 additional comments?

11 If not, we stand adjourned.

12 (Whereupon, at 10:56 a.m., the above-
13 entitled matter was concluded.)
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CERTIFICATE OF TRANSCRIBER

This is to certify that the attached events of a meeting
of the United States Nuclear Regulatory Commission entitled:

TITLE OF MEETING: BRIEFING ON EVOLUTIONARY LIGHT WATER REACTOR CERTIFICATION
ISSUES AND RELATED REGULATORY REQUIREMENTS

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: APRIL 27, 1990

were transcribed by me. I further certify that said transcription
is accurate and complete, to the best of my ability, and that the
transcript is a true and accurate record of the foregoing events.

Carol Lynch

Reporter's name: Peter Lynch

ALWR REVIEW PROGRAM

NRR BRIEFING TO COMMISSION
APRIL 27, 1990

THOMAS E. MURLEY
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REVIEW PRIORITIES

- ° EQUAL PRIORITY TO ABWR, SYSTEM 80+
AND EVOLUTIONARY EPRI PROJECT
- ° SER ON PASSIVE EPRI PROJECT COMPLETED
BEFORE INDIVIDUAL PASSIVE LRBS TO
ACRS AND COMMISSION
- ° EARLY INTERACTION WITH PASSIVE DESIGN
VENDORS

VG-1

NRR BUDGETED RESOURCES (DIRECT FTEs)

	<u>FY90</u>	<u>FY91</u>	<u>FY92</u>	<u>FY93</u>
EPRI EVOLUTIONARY	4.5	5.5	-	-
EPRI PASSIVE	0.5	5.5	8.0	-
GE ABWR/CE SYS 80+	8.9	15.0	15.0	14.4
<u>W</u> RESAR SP/90	3.0	-	-	-
<u>W</u> AP-600/GE SBWR	<u>1.1</u>	<u>3.0</u>	<u>7.0</u>	<u>15.6</u>
	18	29	30	30

VG-2

PROPOSED REVIEW PROCESS

- ° POLICY ISSUES TO COMMISSION PROMPTLY
- ° RESOLVE POLICY ISSUES IN PARALLEL WITH
TECHNICAL REVIEW (VS. SERIES)
- ° PERIODIC BRIEFINGS TO ACRS/COMMISSION
- ° INCORPORATE COMMISSION GUIDANCE ON
POLICY ISSUES IN FINAL LRB AND IN
FINAL SER

SCHEDULE IMPROVEMENTS OVER
SECY-90-065 OPTIMISTIC ESTIMATES

<u>PROJECT</u>	<u>SAVINGS (MONTHS)</u>
° ABWR FDA	4
° SYSTEM 80+ LRB	7
- FDA	11
° EPRI SERs	2
° FUTURE APPLICATIONS	
- LRB	4
- FDA	4

VG-4

NEW POLICY ISSUES

- ° LEVEL OF DESIGN DETAIL
- ° INSPECTION, TEST, ANALYSIS AND
ACCEPTANCE CRITERIA (ITAAC)
- ° ENVIRONMENTAL REVIEW OF DESIGN
ALTERNATIVES PER NEPA