

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

Title: BRIEFING ON ESSENTIALLY COMPLETE DESIGN ISSUE
FOR PART 52 SUBMITTALS

Location: ROCKVILLE, MARYLAND

Date: JULY 18, 1990

Pages: 122 PAGES

SECRETARIAT RECORD COPY

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NUCLEAR REGULATORY COMMISSION

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- - - -

PUBLIC MEETING

Nuclear Regulatory Commission
One White Flint North
Rockville, Maryland

Wednesday, July 18, 1990

The Commission met in open session,
pursuant to notice, at 2:00 p.m., Kenneth M. Carr,
Chairman, presiding.

COMMISSIONERS PRESENT:

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

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STAFF SEATED AT THE COMMISSION TABLE:

WILLIAM C. PARLER, General Counsel

ANDREW BATES, Office of the Secretary

JAMES TAYLOR, Executive Director for Operations

DR. THOMAS MURLEY, Director, NRR

MARTIN VIRGILIO, Chief, PTSB, NRR

WILLIAM TRAVERS, Assistant Director for Special
Projects, NRR

REBECCA NEASE, Technical Assistant, NRR

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

2:00 p.m.

CHAIRMAN CARR: Good afternoon, ladies and gentlemen.

An issue currently before the Commission is the question of how detailed an application and design certification must be under Part 52 in order to support both a safety review by the NRC and to encourage standardization.

On Monday, July 16th, 1990, the Commission was briefed by the industry with their views on the subject. Today, the Commission will be briefed on this matter by the NRC staff.

I understand that copies of the briefing slides and the staff's paper, SECY-90-241, are available at the entrance to the meeting room.

Do my fellow Commissioners have any opening remarks?

Mr. Taylor, you may begin.

MR. TAYLOR: Good afternoon. With me at the table, to my far left, Rebecca Nease, Marty Virgilio. To my right, Doctor Murley and Bill Travers from the Office of NRR.

With regard to the subject of the span of design detail, the staff has prepared and presented

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1 options on this subject rather than make a specific
2 recommendation because we feel collectively that this
3 is such a major policy issue and will have deep effect
4 on the work of the staff and will effect whatever
5 future plants lie ahead.

6 The paper that the staff has prepared on
7 the subject I understand has been made publicly
8 available. I believe there are copies at the entrance
9 to the room, as the staff suggested to the Commission.

10 With that introduction, I'll turn to
11 Doctor Murley.

12 DOCTOR MURLEY: Thank you, Mr. Chairman,
13 Commissioners. There are two policy issues that we
14 have posed for the Commission in the paper. The first
15 one is the level of design detail. As you mentioned,
16 Mr. Chairman, the other is whether the two-tiered
17 approach for certification as laid out by NUMARC last
18 Monday is an acceptable approach for certification.
19 Both of those, we believe, are important issues for
20 the Commission.

21 We'll start out talking about options and
22 the information that we've been able to gather on
23 level of design detail and what it means. At the end,
24 because there were some questions that came up Monday
25 with regard to staffing and how we would conduct our

1 reviews, I'd like to take a few minutes at the end and
2 talk about that.

3 With that, Marty Virgilio has done a large
4 amount of work with Rebecca Nease and others on our
5 staff, talking with members of the utility industry,
6 the architect/engineer industry and also the reactor
7 vendors. They've been able to pull together the
8 information and I'd like to turn it over then to
9 Marty.

10 MR. VIRGILIO: (Slide) Could I have the
11 first slide, please?

12 As Tom pointed out, there are two policy
13 issues that we addressed in our paper. Back on April
14 27th, the staff briefly discussed these policy issues
15 with the Commission and since that meeting we have
16 reviewed Part 52 and conducted meetings with CE, GE,
17 Westinghouse, Stone and Webster, Duke, Northeast
18 Utilities and others and have conducted many internal
19 meetings on this subject. As a result, we've prepared
20 our paper that we presented to you.

21 (Slide) If I can have the next slide,
22 please.

23 In examining the level of design detail,
24 we found three variables associated with the contents
25 of the application, what's available for audit, and

1 material in the certification. Section 52.47 makes
2 applicable Parts 20, 50, 73, 100 with regard to
3 technical information and requires a proposed
4 technical resolution to all the medium and high
5 priority safety issues in 0933. It requires ITAACs,
6 inspection, tests, analysis and acceptance criteria.
7 It also requires that PRA, site specific parameters
8 postulated for the design and a conceptual design for
9 the site specific features not specifically included
10 in the application.

11 When we read this section, we view it to
12 require three things, sufficient detail for us to
13 judge the acceptability of the ITAACs, sufficient
14 detail for us to reach our final conclusions on all
15 safety questions, and sufficient information to allow
16 the applicant to prepare procurement specifications
17 and construction and installation specifications.

18 We read this section to require, at the
19 minimum, what is equivalent to an FSAR at the OL
20 stage, minus the site specific and as-built
21 information typically included in an FSAR.

22 In the next variable, we look at material
23 available for audit. What we see is that information
24 contained in procurement and construction and
25 installation specifications be completed and available

1 for the staff if necessary for us to make our safety
2 findings. We see that this section requires, at a
3 minimum, performance characteristics to be included.
4 At the other end of the spectrum, you could see final
5 specifications including commercial information.

6 Then last, material in the certification.
7 The rule is not very prescriptive on what is to be
8 included in the certification. The statements of
9 consideration imply that the certification will be no
10 more restrictive than Section 50.59 is today. How
11 much detail that is present in the certification, it
12 goes on to say, would have to be resolved in the rule
13 certifying the design. What is clear to us is that
14 what is included in the certification is what is
15 guaranteed in terms of standardization through the
16 process.

17 (Slide) If I can have slide 3, please.

18 In examining this, we found four levels of
19 detail and we've chosen the four levels for
20 illustrative purposes only. It's not to say that
21 there are only four levels. They are a spectrum of
22 choices. We've just picked four. On different
23 systems, you may want different levels of details.
24 It's not to say that you pick one level and you apply
25 that for all systems.

1 In our paper, we examined the HVAC system
2 in some detail. We looked at the differences in
3 levels as a result of varying the contents of the
4 application, the material available for audit and what
5 would be included in the final certification. In our
6 paper, we've included a table. It's Table 1 and it
7 shows at the various levels what one would see.

8 (Slide) If I can have the next slide,
9 number 4, please.

10 Looking first to level 1, in our
11 application we see a number of features that
12 constitute the essentially complete design. In this
13 case, we see a biddable, completely designed facility
14 with identical physical, functional and performance
15 characteristics.

16 I draw your attention to the line,
17 component performance characteristics. Here what
18 we're talking about is heat removal capabilities,
19 pressures, temperatures, flow rates, sizes and filter
20 efficiencies when we looked at the HVAC system.
21 There's also a significance associated with that line
22 and that's typically or traditionally how we've done
23 our reviews pursuant to the standard review plan.

24 Right below that line you'll see physical
25 attributes, orientation, location for components.

1 Here we're talking in the HVAC system about supply and
2 exhaust fan type. We're talking about the location
3 and orientation of components. You're talking about
4 the check valve type.

5 Next line down, geometric aspects for
6 suspended components. What we're talking about here
7 is cable trays, exact locations, piping, the routing
8 of conduit. In the next line we talk about component
9 support/restraint specifications. Here you're talking
10 about component weights, mounting and support details.

11 All of this information, including the
12 ITAACs associated with this information, allow the
13 staff to reach its final conclusions on safety and
14 standardization questions.

15 COMMISSIONER CURTISS: Marty, before you
16 go on, that chart -- and since this question will come
17 up, I think, in the subsequent ones, you indicated
18 that line there about two-thirds of the way down
19 reflects the SRP level of detail. You also indicated
20 that we could in how we approach this question vary
21 the level of detail depending upon the system and its
22 importance. Is the -- refresh my memory. Does the
23 SRP do that now for a plant? Do we get different
24 levels of detail depending upon the system in current
25 SRPs?

1 MR. VIRGILIO: Yes, it does.

2 COMMISSIONER CURTISS: So, this line might
3 move up and down depending upon the system is what
4 you're saying?

5 MR. VIRGILIO: That's correct. And the
6 feed water system is a good example of where you would
7 have today maybe some less detail than you would have
8 in the reactor protection system.

9 COMMISSIONER CURTISS: Do we have any
10 systems today where we in the SRP require a level 1
11 level of detail?

12 MR. VIRGILIO: No, not by the SRP today.

13 CHAIRMAN CARR: And the SRP today permits
14 you to go back and ask for anything you want to that
15 you're not able to get from what is submitted?

16 MR. VIRGILIO: Certainly it does if you
17 need that information to develop your safety findings.

18 CHAIRMAN CARR: So, it's just a guide,
19 not --

20 MR. VIRGILIO: It certainly is.

21 CHAIRMAN CARR: It's not something that
22 tells them what to submit.

23 MR. VIRGILIO: Right.

24 CHAIRMAN CARR: Okay.

25 COMMISSIONER CURTISS: Let me sharpen my

1 question a little bit then. In the Qs and As process
2 that follows the application, do we get through the Qs
3 and As a level of detail that would -- perhaps with
4 the exception of requiring the specs to be included in
5 the application, do we get a level of detail that goes
6 up to level 1?

7 MR. VIRGILIO: Not typically. Not
8 typically. You may see then unless -- you want to
9 talk about level 2. I think maybe that's --

10 DOCTOR MURLEY: Excuse me, Marty. We have
11 to keep in mind that the process today is a two step
12 process and so at the early step, the construction
13 application stage, we really are focusing on
14 conceptual information. At the final stage, we have a
15 plant that we can go and look at. And so, to some
16 extent, there is even more detail to help us in our
17 review than would be in a level 1. We would actually
18 have a plant to go and look at in certain structural
19 areas, for example. So, it's hard to strictly compare
20 the way we do today --

21 CHAIRMAN CARR: Before approving the
22 operating license, you mean?

23 DOCTOR MURLEY: Before approving the
24 operating license, we have the plant built.

25 MR. TAYLOR: All the stress analyses are

1 done on piping and so forth. Actually, the procured
2 date is available for an operating license.

3 COMMISSIONER CURTISS: Okay. Go ahead.

4 MR. VIRGILIO: (Slide) Okay. If we could
5 go to slide 5.

6 Level 2 provides an essentially complete
7 design that includes physically similar identical
8 functional and performance characteristics. Again, I
9 draw your attention to the line at component
10 performance characteristics. Everything above the
11 line is the same as it was for level 1.

12 With regard to level 2, we look at key
13 physical attributes for certain components. Based on
14 lessons learned from operating experience, we would
15 select those physical attributes that provide most
16 risk sensitivity or we have seen the most problems
17 from operating experience. Again, for example, we
18 would look at maybe check valve type or in the HVAC
19 system we would look at maybe the coupling between the
20 fan and the motor for the supply and exhaust fans.

21 We would not, in level 2, have exact
22 location and all physical attributes for components.
23 We wouldn't, for example, have for a heat exchanger
24 the exact location of the nozzles. But this
25 information would still provide the staff sufficient

1 standardization questions and would allow us to draw
2 final conclusions on safety matters.

3 COMMISSIONER CURTISS: Back up on the
4 level 1 option. I meant to ask this question. You
5 point out in the paper that that's probably
6 incompatible with existing Part 52. Is that because
7 we would be requiring procurement construction
8 installation specs in the application?

9 MR. VIRGILIO: Yes. That's principally
10 the reason why we saw that. That might not conform to
11 Part 52 as it's currently --

12 COMMISSIONER CURTISS: Are there other
13 inconsistencies with Part 52?

14 MR. VIRGILIO: That was the principal
15 reason.

16 COMMISSIONER CURTISS: The only one?
17 Okay.

18 COMMISSIONER REMICK: Let me ask a
19 question on level 2 before you leave it. You have key
20 physical attributes for components under the line. If
21 I look at table 1 for physical attributes and
22 configure each component, you show that as not
23 expected in application. It seems to me they're
24 inconsistent with one another.

25 MR. VIRGILIO: What we were looking -- if

1 you look at below the line of traditional standard
2 review plan, you're starting to get the physical
3 attributes of cooling coil type, heating coil type,
4 fan type, fan drive. It's a matter of all physical
5 attributes in line 8.

6 COMMISSIONER REMICK: Oh, I see.

7 CHAIRMAN CARR: The word "key" is the key
8 to that problem.

9 COMMISSIONER REMICK: Okay.

10 MR. VIRGILIO: Yes.

11 COMMISSIONER REMICK: All right. Okay.

12 MR. TAYLOR: In 1, you'd know --

13 CHAIRMAN CARR: You get them all whether
14 you need them or not.

15 COMMISSIONER REMICK: Okay. All right.

16 COMMISSIONER CURTISS: One final question
17 on level 1 and 2. You note in your paper that these
18 two levels of detail, unlike level 3, would require
19 what you call the standardization portion of the
20 review. Two questions. Number one, is that implicit
21 in the safety finding type review that you make and
22 the reference in Part 52 to you have to submit that
23 information necessary to make the safety findings or
24 do you view it as a separate finding beyond the safety
25 finding?

1 Two, I guess I'd like to know as you go
2 through here, either at this point or as you discuss
3 that, what the standardization portion of the review
4 would focus on. Clearly, that's the focus of Part 52
5 and perhaps if there is a distinction between the
6 safety part of the review and the standardization part
7 of the review, which I've always viewed as a single
8 entity, maybe we ought to elicit that.

9 MR. VIRGILIO: If we go back and think
10 about what drives the review today by the technical
11 staff, it is the standard review plan. Right now, as
12 I've pointed out, by the line and on table 1, you can
13 see that the standard review plan doesn't go into some
14 of the additional features that are shown below the
15 line.

16 I'm not sure I would say a separate
17 finding, but certainly we would have to go back and
18 revise our review guidance to focus the staff and the
19 applicants on the additional information that would be
20 needed.

21 COMMISSIONER CURTISS: Okay. I take it in
22 what you're saying here that since you view level 2
23 standardization and that portion of the review as
24 implicit in the Part 52.47 contents of application
25 where it focuses on that information necessary to make

1 the safety findings?

2 MR. VIRGILIO: If we select option 2.

3 (Slide) Let's take a look at application
4 under level 3 and that's slide 6.

5 Here, I would characterize essentially
6 complete design as identical functional and
7 performance characteristics. Again, all the items
8 above the line are the same and the same in both 1 and
9 2. Here, with regard to the HVAC system, you would
10 have the principal components of the HVAC system
11 identified on the P&IDs and plant layout drawings.
12 They would be in a specified room and they would
13 perform functions as stated. Again, you would wind up
14 with functional and performance requirements
15 standardized.

16 (Slide) Go on to level 4 for a minute,
17 slide 7.

18 What we've shown is the contents of the
19 application would include essentially what we've found
20 in our PSAR-type reviews, although this is not
21 acceptable for a single step licensing process. We
22 found that in the traditional two-step licensing
23 process this approach was acceptable.

24 (Slide) Moving on to talk about the audit
25 process, slide 8, in all levels the staff will conduct

1 its audits necessary to support its safety findings.
2 In levels 1 and 2, audits may be driven by the
3 additional objectives of ensuring standardization as
4 shown in the application. What would not be included
5 in the application is shown in 1 and 2. In the slides
6 I presented earlier, we would go out and pursue
7 through the audit process. Again, if we needed any
8 information in order to support our safety findings, we would
9 certainly go out into the field and require that
10 information be developed if it wasn't already
11 developed and we would audit it. If it was material
12 to our safety findings, they might even be drawn into
13 the application and included in the certification.

14 (Slide) Go on to slide 9 and we'll
15 examine in the next several slides what material will
16 be included in the certification.

17 In level 1, what we propose to include is
18 essentially the entire application in the
19 certification. This information would allow us to
20 certify and lock in our safety findings as well as the
21 additional features we reviewed in order to ensure
22 standardization. Here with level 1 you get the
23 maximum degree of standardization that we can
24 guarantee through the regulatory process. You get the
25 maximum numbers of issues resolved at the

1 certification phase. You also incur the highest cost
2 and you have the most limited flexibility, so much so
3 that a licensee may not be able to deal with
4 construction of the facility.

5 During the construction process, you're
6 going to have deviations develop, some of them that
7 are acceptable as is. Treatment of these deviations,
8 unavailability of components over the life of the
9 certification and improvements to existing technology
10 or the incorporation of new technologies would all be
11 incorporated through the 50.12 process.

12 COMMISSIONER CURTISS: Marty, you touched
13 on the deviations and the interferences question. Is
14 it, as a rule of thumb, generally true that the more
15 design detail that you have, the fewer interferences
16 you're going to face?

17 MR. VIRGILIO: With today's computer
18 assisted drawings, I think that we're going to see
19 less deviations than we've had in the past. But I'm
20 not sure that developing the design details now will
21 limit those. I'm not sure I understand your question
22 completely.

23 COMMISSIONER CURTISS: I guess I'm just
24 searching for, as I say, a general rule of thumb which
25 would be more detail.

1 CHAIRMAN CARR: Well, it might limit them,
2 but it wouldn't eliminate them perhaps.

3 COMMISSIONER CURTISS: Wouldn't eliminate
4 them.

5 MR. TAYLOR: It wouldn't eliminate them.

6 COMMISSIONER CURTISS: But it would
7 reduce -- would it minimize the number of -- would you
8 expect --

9 MR. VIRGILIO: This information -- I'm
10 sorry, excuse me.

11 COMMISSIONER CURTISS: Go ahead.

12 MR. VIRGILIO: This information would be
13 developed before the combined operating license. So,
14 whether it's developed now or developed later,
15 essentially the same information would be available.
16 Now, whether that would help you limit the
17 construction interferences, I'm not sure I understand
18 the nexus.

19 COMMISSIONER CURTISS: I guess the
20 distinction is the question of how broad a 50.59
21 provision the vendor needs during that period
22 between -- after certification and before reference in
23 a COL?

24 CHAIRMAN CARR: Let me follow-up on that.
25 What's the amount of time between the certification

1 and the combined operating license and what did you
2 say would be available, the difference?

3 MR. VIRGILIO: The time could be as short
4 as just a few years or it could be quite a bit longer.
5 I don't believe we're going to see a combined
6 operating license until you have an applicant.

7 CHAIRMAN CARR: But you implied that
8 there's be a lot more information available --

9 MR. VIRGILIO: At that time.

10 CHAIRMAN CARR: -- at that time than there
11 would be at the time of certification.

12 MR. VIRGILIO: At that time when an
13 applicant comes forward for a combined operating
14 license, you will have the rest of the design details,
15 I think, pretty much finalized. You will have a lot
16 more information available at that point in time
17 before you start construction of the facility.

18 DOCTOR MURLEY: In other words, an
19 applicant -- once he has a certified design, an
20 applicant who wants to order one of those and build
21 one would get an architect/engineer and he would fill
22 in the details. All the site specific details would
23 have to be filled in. Depending on what level we
24 require here to be in the certification, there will
25 still be some additional engineering that needs to be

1 done that would have to be brought to the combined
2 operating license.

3 CHAIRMAN CARR: Well, what point in
4 construction time do you foresee asking for a combined
5 operating license?

6 DOCTOR MURLEY: Before any work is started
7 at all.

8 CHAIRMAN CARR: Before they cut any metal,
9 right?

10 DOCTOR MURLEY: Yes. Yes.

11 CHAIRMAN CARR: Or dig any holes.

12 DOCTOR MURLEY: That's right. But my
13 point was and Marty's point was there still needs to
14 be some engineering that's done even after the design
15 is certified --

16 COMMISSIONER CURTISS: Let me come at it
17 from a different angle.

18 DOCTOR MURLEY: -- because you have to
19 match it to a site.

20 COMMISSIONER CURTISS: What's do you
21 estimate the total --

22 CHAIRMAN CARR: Depends on the level of
23 certification.

24 DOCTOR MURLEY: And exactly right. So,
25 the part that's below level 1, so to speak, plus the

1 site specific part, all that would have to be -- or
2 generally a large part of it would have to be done for
3 the COL hearing process.

4 COMMISSIONER ROGERS: Do you have any idea
5 of what percentage of the total engineering design
6 that would be if -- starting with a level 1 as the
7 most extreme?

8 DOCTOR MURLEY: Yes. Marty and Rebecca
9 have looked at that.

10 COMMISSIONER ROGERS: What additional --

11 DOCTOR MURLEY: Perhaps you could --

12 MR. VIRGILIO: Let me let Rebecca walk you
13 through what we've done in all of the different levels
14 of detail.

15 COMMISSIONER ROGERS: We can come back to
16 it, if you want.

17 MR. VIRGILIO: No, we can do it right now.

18 COMMISSIONER CURTISS: Let me add a point
19 to that. Maybe start out or discuss what you estimate
20 to be the total non-site specific engineering cost of
21 a facility. We've heard the billion dollar level, and
22 then I've seen your estimates in here of the numbers
23 that you're talking about, 600 for level 1. I think
24 we'll get a sense of how far along in terms of
25 percentage we are on non-site specific engineering

1 work if you add them.

2 MS. NEASE: All right. You have to look
3 at engineering as two parts. There's engineering
4 design, pure design, and there's engineering
5 implementation. We have discussed with industry
6 vendors and AEs and the utilities and we come up with
7 something close to \$875 million to \$1.4 billion for
8 total engineering effort. That's implementation and
9 design. For level 3, which is what we characterize as
10 the utility's position, they seem to think that
11 they're going to have 50 to 60 percent of design
12 completed at certification for a cost of \$150 million
13 to \$350 million and that's in our paper for level --

14 CHAIRMAN CARR: Wait a minute. That's of
15 the total of the two designs?

16 MS. NEASE: That's just the design, not
17 the implementation.

18 CHAIRMAN CARR: The first design?

19 MS. NEASE: The first design.

20 CHAIRMAN CARR: So, 50 percent of the
21 first design maximum.

22 MS. NEASE: Right.

23 CHAIRMAN CARR: 50 to 60. Okay.

24 MS. NEASE: Correct. In level 2, we
25 estimate 80 percent of the engineering design will be

1 complete, plus maybe one or two percent of the
2 implementation. But basically, 80 percent of the
3 design will be complete for \$400 million. In level 1,
4 we see essentially all of the engineering design
5 complete, maybe a third of the engineering
6 implementation complete for something greater than
7 \$600 million.

8 CHAIRMAN CARR: Well, now, let's
9 extrapolate that to the issuance of the combined
10 operating license.

11 MS. NEASE: Okay.

12 CHAIRMAN CARR: What do you have at that
13 point in time?

14 MS. NEASE: Well, for level 3, if I can
15 figure this out, 50 to 60 percent of your engineering
16 design is done for level 3 at certification and
17 basically no engineering implementation and
18 certification. However, by the time you get to your
19 combined operating license stage, you should have had
20 almost all of the engineering implementation
21 completed. By the time you're ready to go in and
22 start digging, you should have almost the same amount
23 as the total design.

24 CHAIRMAN CARR: So you'll get to a level 1
25 engineering design by the COL and how much of the

1 implementation design?

2 MS. NEASE: All of the implementation--
3 well, no, no, no. I would say maybe 95 percent of the
4 implementation design.

5 COMMISSIONER CURTISS: What level?

6 MS. NEASE: At level 3, by the time you
7 have your --

8 CHAIRMAN CARR: COL.

9 MS. NEASE: By the time you have a COL.
10 That means you have a site and you have a customer.

11 CHAIRMAN CARR: And he gets a COL.

12 MS. NEASE: And he goes out and he's ready
13 to go.

14 CHAIRMAN CARR: He's got everything in his
15 pocket but those five percent that perhaps are site
16 specific or is that site specific still got to be done
17 at the time of COL?

18 MS. NEASE: I would suspect he has a lot
19 of site specific done by them.

20 CHAIRMAN CARR: Okay.

21 COMMISSIONER CURTISS: But if I do my
22 arithmetic right here, at the level 3 level of detail,
23 at the certification stage as opposed to the COL,
24 which you estimate to be \$150 to \$350 million, against
25 a total cost of \$875 million to \$1.4 billion for total

1 implementation and design, what's left for the utility
2 under level 3, as I say, if I do the arithmetic right,
3 is \$525 million to \$1.25 billion?

4 MS. NEASE: That's close, yes. They have,
5 I would say -- well, 60 percent of your engineering
6 and implementation is completed at the time you have
7 your certification. That's basically 20 to 30 percent
8 of your total engineering effort. So, the utility has
9 left on its plate maybe 70 percent.

10 COMMISSIONER CURTISS: And that could,
11 under level 3, the level 3 approach, I gather the
12 individual utilities could approach those issues any
13 way they want to?

14 MR. VIRGILIO: If you mean collectively--

15 COMMISSIONER CURTISS: No, individually.

16 MR. VIRGILIO: Spreading the costs out?
17 There's a lot of first of a kind engineering built
18 into those costs as well.

19 COMMISSIONER CURTISS: No, I mean the
20 implementation and the design --

21 CHAIRMAN CARR: What he really means is
22 what we've got guaranteed is what we bought at the
23 level 3 level. That's all we know for sure is the way
24 it's going to be done.

25 DOCTOR MURLEY: Mr. Chairman, I think this

1 is how we are interpreting, the staff --

2 CHAIRMAN CARR: I understand.

3 DOCTOR MURLEY: -- what's required at the
4 COL stage in Part 52. Perhaps General Counsel
5 might -- I don't know if he has any different views,
6 but that is how we think most of the work would have
7 to be done by then.

8 MR. PARLER: Certainly I'd approach the
9 problem through the eyes of a lawyer, one that has
10 been working in the area for a couple years. We were
11 trying to put in place a process that would, under the
12 authority that we have, enable us to move in the
13 direction of one step licensing and resolving issues,
14 design issues, site issues, or other issues early in
15 the process rather than after the other plant had been
16 substantially constructed.

17 A big issue that was focused on in the
18 evolution of this rule was the issues that would be
19 left open prior to authorization. People were almost
20 in a frenzy about that, it seemed to me.

21 In order to take the position that I
22 concluded could be legally taken, it is fairly clear
23 to me that just about everything has to be on the
24 table and resolved at the time the combined license is
25 issued with the exception of things which must, of

1 necessity, await the completion of construction, such
2 as construction of the plant in accord with the terms
3 of the provisions of the combined license, the so-
4 called ITAAC provisions, and other thing about the
5 readiness of operation before the authorization to
6 operate would be permitted. So, that would be my
7 answer.

8 COMMISSIONER CURTISS: I had one other
9 question that may effect the cost estimates, a two
10 part question.

11 First, if the vendor is required to have
12 procurement specs available for audit, does that mean
13 that the vendor essentially has to have level 1 detail
14 already prepared? In other words, if you define--
15 and I realize there's a difference in the definition
16 of procurement specs. But if you define procurement
17 specs as ready for a biddable design, do I read that
18 correctly to mean that where we would call upon that
19 vendor to have certain specs ready, procurement specs,
20 that he would have to be -- the vendor would have to
21 have the underlying level 1 design detail in order to
22 put out a biddable procurement spec?

23 MS. NEASE: Are you talking about level 3?
24 If they're coming in at a level 3 and that's --

25 COMMISSIONER CURTISS: No, I'm asking a

1 general question, procurement specs if you define them
2 as that which would permit you to go out with a
3 biddable design. Does that mean -- regardless of the
4 level here, does that mean that you have to have, in
5 effect, what you've described as level 1 design detail
6 because you're talking about a biddable design?

7 DOCTOR MURLEY: Let me answer that by
8 using an example that we -- when we asked ourselves
9 that very question, we kicked around. It would be,
10 for example, primary coolant pumps. In going out for
11 bids, you would not specify the exact locations of the
12 inlet and outlet pipes and that sort of thing. You
13 would specify performance specifications and electric
14 power demands and that sort of thing. So, you would
15 know quite well what you're getting, but different
16 manufacturers would have different proprietary means
17 for designing their pumps and so forth.

18 So, they would have different inlet and
19 outlet nozzles and they would have different weights,
20 so that you would not have the information available
21 generally that we are contemplating here in level 1
22 because in level 1 we'd expect you'd have to have a
23 great detail in order to do the seismic analysis.

24 COMMISSIONER CURTISS: Because of
25 performance specs you wouldn't have that available.

1 My question is, the rule envisions that there would be
2 procurement specs available for audit somewhere.

3 CHAIRMAN CARR: I think the focus is on
4 what does available for audit mean? Does that mean
5 they'd then have to go prepare it so you could look at
6 it, or does it have to be available if you called for
7 it? I must admit, when I read through the rule --

8 DOCTOR MURLEY: No, I -- I --

9 CHAIRMAN CARR: -- when a thing is
10 available for audit, that meant I could go look at it
11 if I needed.

12 COMMISSIONER CURTISS: Really two
13 questions.

14 DOCTOR MURLEY: That's a separate
15 question. That --

16 COMMISSIONER CURTISS: Do you have to have
17 it available and if you have to have it available,
18 does that mean that because of the nature of
19 procurement specs, if you define them as leading to
20 biddable designs --

21 DOCTOR MURLEY: Maybe I'll answer -- I
22 thought your question was does the requirement to have
23 procurement specs drive us to having level 1 --

24 COMMISSIONER CURTISS: Does it, in effect,
25 mean that the vendor has level 1 design?

1 DOCTOR MURLEY: -- and I thought not.

2 MR. TAYLOR: It does not drive you to
3 level 1.

4 DOCTOR MURLEY: Right.

5 MR. TAYLOR: Because of the reasons that I
6 believe Doctor Murley began to enumerate and that is
7 all of the connection -- level 1 would include the
8 details of the pipe connections to the specific pumps.

9 COMMISSIONER CURTISS: You've indicated
10 that level 1 in effect gives you a biddable design, as
11 you've defined it.

12 DOCTOR MURLEY: Yes. For example, you've
13 done the seismic analysis --

14 CHAIRMAN CARR: A buildable design.

15 MR. TAYLOR: Biddable and buildable.

16 COMMISSIONER CURTISS: Right. And if you
17 under level 2 call upon the vendor to have procurement
18 specs available in certain areas and if those are
19 defined as biddable procurement specs, doesn't that
20 mean that in level 2 where you call for procurement
21 specs you are essentially asking for level 1 design
22 detail?

23 I'll pursue it later. I don't understand
24 why that isn't true.

25 DOCTOR MURLEY: Well, I think I can give

1 you an example, because the procurement spec for a
2 pump, a primary pump, can allow for different designs
3 to come in. They produce the same flow, they have all
4 the characteristics you want. Now, the fact that
5 slightly different designs can come in mean that you
6 mount them differently on the pipes, that your seismic
7 analysis is a little different and that sort of thing.

8 MR. TAYLOR: Foundations and --

9 DOCTOR MURLEY: Foundations might be a
10 little different.

11 COMMISSIONER CURTISS: It depends on how
12 tight the procurement spec, I guess, is and I gather
13 there are different views about how you define that.

14 DOCTOR MURLEY: Yes. We had in mind that
15 the level 1 would include all the exact information so
16 that you would have done the seismic analysis and you
17 had the locations. So that if company X wanted to bid
18 on that particular procurement spec, he would have to
19 maybe build a design that was not his design. He'd
20 have to build somebody else's design, whereas for the
21 level 2 and the level 3 level of detail that we're
22 talking about here, that kind of detail would be done
23 after the applicant ordered the plant, but before he
24 came in for a COL. He would have to do that
25 engineering once he found out who the vendor was.

1 COMMISSIONER CURTISS: Okay. Go ahead.

2 COMMISSIONER REMICK: Let me follow on.
3 On the level 1, the example you used --

4 DOCTOR MURLEY: Well, he would, yes,
5 select a design --

6 COMMISSIONER REMICK: Or either write
7 specifications as specified where the inlet, outlet
8 and all those things were, the way it was.

9 DOCTOR MURLEY: Exactly right.

10 COMMISSIONER REMICK: Otherwise, he would
11 have to have selected a pump.

12 DOCTOR MURLEY: Right. And then there may
13 be competitive reasons why that is not feasible, but
14 that could mean that company X would have to be
15 building company Y's design if they wanted to bid.

16 CHAIRMAN CARR: But he's going to have to
17 do that anyway between certification and COL.

18 MR. TAYLOR: He should by that time.

19 CHAIRMAN CARR: From what you told me.

20 DOCTOR MURLEY: Yes. In other words --

21 MR. TAYLOR: And then design the
22 foundations, the connecting piping, cable work.

23 CHAIRMAN CARR: Okay.

24 COMMISSIONER REMICK: The utility would
25 have selected the pump?

1 DOCTOR MURLEY: The utility would have
2 selected the --

3 COMMISSIONER REMICK: In one case we're
4 talking about the vendor having to select and in the
5 other case we're talking about the utility for the COL
6 selecting a pump. They're two different things.

7 CHAIRMAN CARR: They're probably not. I
8 mean I imagine it will be both of them in either case,
9 but --

10 COMMISSIONER REMICK: Not necessarily. I
11 can see --

12 CHAIRMAN CARR: -- it wouldn't have to be.

13 COMMISSIONER REMICK: I could see a
14 certified design without a buyer.

15 CHAIRMAN CARR: But there's nothing that
16 keeps any pump manufacturer from building a pump to
17 fit that --

18 COMMISSIONER REMICK: No, that's true.

19 CHAIRMAN CARR: -- spot.

20 COMMISSIONER REMICK: That's true.

21 CHAIRMAN CARR: He's going to -- if the
22 job is there, he'll hang those inlets and outlets
23 wherever you want them for a price.

24 COMMISSIONER REMICK: For a price.

25 CHAIRMAN CARR: Let's proceed.

1 MR. VIRGILIO: (Slide) All right. We can
2 continue with slide number 10.

3 Under level 2, we certify essentially all
4 the information that's included in the application and
5 what's come from our review and audit that's material
6 to our safety finding and support the standardization
7 that we're trying to achieve through level 2.

8 Here you get a substantial degree of
9 standardization and resolve a significant number of
10 issues at the certification phase. There is a cost,
11 as we've discussed. In this case, there is some
12 flexibility outside of 50.12. You're not certifying
13 all the physical attributes under level 2. You're not
14 certifying the exact location. Geometric aspects of
15 suspended components are not being certified, nor is
16 there support and restraint data being certified.
17 This will allow for some changes through the
18 construction process.

19 COMMISSIONER REMICK: It's at this point
20 where I have a little difficulty and I realized when
21 you wrote this you didn't know exactly what the
22 industry was coming in with. But when they made a
23 presentation -- you do say in here that your level 3
24 is very close to what the industry is proposing, but
25 they proposed, as I understood it, that they would

1 provide not only room size but the location of major
2 components in those rooms and orientation.

3 So, presumably under level 3, you're
4 saying that as you see it, that wouldn't even be
5 necessary in level 2. There seems to be an
6 inconsistency here and I can understand why. But we
7 addressed that question a little bit in depth because
8 they did say that in a room they would address the
9 location of the equipment and orientation. That
10 surprised me and I asked the question and they said
11 yes, they would be addressing that, presumably in
12 level 3, if level 3 is consistent with what they were
13 proposing.

14 MR. VIRGILIO: We discussed the
15 application under level 3. I talked about the P&IDs
16 and the layout drawings and that's what they have in
17 mind that they would have. They would know the pump is
18 in the room, they would know the valve is in the room,
19 they would know the heat exchanger is in the room.
20 But if it was of substantial size, they would know the
21 orientation of those components.

22 COMMISSIONER REMICK: Yes. They did not
23 say if of substantial size, but that might be what
24 they meant.

25 CHAIRMAN CARR: I think they did say

1 safety significant ones.

2 COMMISSIONER REMICK: Yes, I presume that.
3 I presume that.

4 MR. VIRGILIO: I think industry has
5 characterized themselves in a meeting we had with the
6 ACRS as being somewhere around a 2.5.

7 COMMISSIONER REMICK: Okay.

8 COMMISSIONER CURTISS: On level 2, you're
9 going to certify everything that's in the application.
10 Do I understand that correctly?

11 MR. VIRGILIO: Yes, essentially the entire
12 application.

13 COMMISSIONER CURTISS: On Monday, the
14 industry made the point, in fact read our language
15 back to us, that in the statement of considerations
16 the Commission envisioned that there will be less
17 detail in the certification than in the application.
18 Assuming that's an accurate reflection of the
19 Commission's sentiment, how do you reconcile a level 2
20 approach that requires everything in the application
21 to be in the certification?

22 MR. VIRGILIO: I would have a difficult
23 time justifying the level 1 approach in that regard,
24 but I think with level 2 there's still a certain
25 amount of flexibility. Not all the information--

1 essentially the significant portions of the
2 application, but not all the application. As in level
3 1, all the application is incorporated into the
4 certification.

5 COMMISSIONER CURTISS: Do the Qs and As go
6 in?

7 MR. VIRGILIO: They may. It depends. It
8 would depend on whether the Qs and As got you down to
9 a level where you were looking at key features and
10 physical attributes associated with key features and
11 you were trying to incorporate that information in
12 order to ensure standardization.

13 CHAIRMAN CARR: But when I read that
14 statement, all that meant to me was that certification
15 might be like your college degree. It doesn't show
16 everything you learned in the course, but you had to
17 complete the course before you got your certified
18 degree. And all that meant to me was that we weren't
19 going to turn around and issue everything in a
20 certification that the application had in it. It said
21 that an application is hereby certified. It could be
22 a small piece of paper. That's the way I read that
23 before I got all the legal opinion.

24 COMMISSIONER CURTISS: I guess that's
25 consistent with my view. But if you take a two-tiered

1 approach, then it's very important what you have in
2 the certification and in tier 1. So, I gather they're
3 making that point and again here I'm just, I guess,
4 making the argument here not because I happen to
5 support it but because they're making the point that
6 the detail on the certification would be less than the
7 application and then it's a question of how much
8 between tier 1 and tier 2.

9 What you're saying here is that there are
10 going to be some things in the application, depending
11 upon the specific system that you're talking about,
12 that would not find their way into the certification
13 under level 2.

14 MR. VIRGILIO: Under level 2.

15 COMMISSIONER CURTISS: Then I think that's
16 consistent with the way I read Part 52.

17 MR. VIRGILIO: That's correct.

18 COMMISSIONER CURTISS: Okay.

19 MR. VIRGILIO: (Slide) If we go to the
20 next slide, slide 11, we talk about level 3 and what
21 would be included in the certification. I've
22 enumerated a number of features, the design criteria,
23 bases, system functional descriptions, right down to
24 the P&IDs and the layout drawings.

25 To be fair, this level provides a marked

1 degree of standardization. You've standardized the
2 functional and performance characteristics far in
3 excess of what we have out there today. It allows a
4 certain amount of flexibility for change pursuant to
5 50.59.

6 (Slide) Go on to the next slide, slide
7 12.

8 Our paper highlights this as a second
9 policy question, flexibility. This could be applied
10 to any of the levels. It's not necessary that it
11 applies only to level 3.

12 As industry told you on Monday, this
13 approach involves formatting the application into two
14 distinct parts and allowing one part to change
15 pursuant to 50.59 type tests. The resolution of all
16 safety issues, the grouping of the issues in two parts
17 and the 50.59 type process would all be subject to the
18 rulemaking process certifying the design.

19 The desired effect is to allow flexibility
20 to change the design as necessary to deal with the
21 construction deficiencies, unavailability of equipment
22 over the life of the certification and to be able to
23 take advantage of improvements in technologies or new
24 technologies.

25 COMMISSIONER REMICK: I'd like to ask a

1 question on flexibility. On your table 1, you
2 identify the F as flexible change without 50.12. I
3 assume, however, with 50.59.

4 MR. VIRGILIO: Or whatever test you so
5 choose to govern those changes.

6 COMMISSIONER REMICK: Okay.

7 MR. VIRGILIO: That's correct.

8 COMMISSIONER REMICK: Okay. Thank you.

9 MR. VIRGILIO: We --

10 COMMISSIONER CURTISS: You touched on the
11 three points the industry advanced for why they need
12 this kind of flexibility, interferences, obsolescence
13 and the need to take advantage of the advancements in
14 the state-of-the-art in technology, I guess.

15 Focusing on the interferences question for
16 a minute, get out in the plant and construct it and
17 your cable tray runs into your pipe and you're off by
18 three inches. To what extent can that issue be
19 addressed through the use of tolerances and how much
20 of the problem that they've identified and as you
21 understand it could be addressed by the kind of
22 latitude and flexibility that tolerances contained in
23 the license -- in the vendor design or the COL would
24 provide?

25 MR. VIRGILIO: Today, with the use of

1 computer-assisted drawing techniques, I believe that
2 you do get some advantage, but I believe that some
3 interferences are inevitable in the construction
4 process. I'm not sure even with increasing the
5 tolerances that you're going to be able to completely
6 eliminate these types of construction interferences.

7 COMMISSIONER CURTISS: Okay. Then on the
8 question that I guess we raised last Monday of
9 obsolescence and the flexibility to take advantage of
10 new developments, new kinds of components, as the
11 Chairman pointed out, if you don't certify nameplate
12 data in the certification, how much of a concern
13 remains under this heading? How much of a need
14 remains to still have that 50.59 flexibility, in your
15 judgment?

16 MR. VIRGILIO: If I think about how much
17 we've advanced in the instrumentation and control area
18 alone in the last 15 years, there's a lot more than
19 nameplate data involved. We've gone from relays that
20 constitute our voting logic for initiating protective
21 actions to software that does that today. So, there's
22 a significant advance over the course of the last 15
23 years in that area.

24 CHAIRMAN CARR: But you didn't -- in the
25 current thing, you didn't certify a relay. You said

1 there was some switch there.

2 MR. VIRGILIO: That's correct. But if you
3 were to look at level 1, we are really talking about
4 certifying the relays and in some cases maybe the
5 physical attributes associated --

6 COMMISSIONER CURTISS: Since it's illegal,
7 focus on the differences between 2 and 3. I think we
8 all recognize that --

9 CHAIRMAN CARR: No, that's -- you're going
10 to do it at the combined operating license point
11 anyway.

12 MR. VIRGILIO: No, sir. That information
13 would be available, but it's not necessarily going to
14 be incorporated into the application or certified at
15 that point in time.

16 CHAIRMAN CARR: But it's going to be
17 available at that point in time is what I'm saying.
18 He's not going to change it from that point until he
19 builds the plant without getting our permission. They
20 don't walk in there and change their instrumentation.

21 DOCTOR MURLEY: Excuse me, but that
22 information that goes beyond what's in the
23 certification would -- he could change through a 50.59
24 process. That is anything, no matter what level we're
25 talking here, 1, 2, 3 or so forth, there is a certain

1 amount of design information that needs to be done
2 before you to the COL. Any information in that part
3 of the design can be changed, as I understand it,
4 through a 50.59 type of process.

5 COMMISSIONER CURTISS: You're talking
6 about the vendor certification?

7 CHAIRMAN CARR: I'm talking about the
8 difference between the certification and what goes on
9 between then and the combined operating license. The
10 guy can do anything he wants to as long as he doesn't
11 change the certified portion.

12 COMMISSIONER CURTISS: That's correct.

13 CHAIRMAN CARR: Which is some degree of
14 standardization. We standardize whatever we
15 certified.

16 COMMISSIONER CURTISS: That's right.
17 That's why the question of what you certify, or if you
18 take a two-tier approach --

19 CHAIRMAN CARR: Standardized power level,
20 kilowatts, flows, pump numbers.

21 COMMISSIONER ROGERS: Well, just on this,
22 this question of tolerances, is a tolerance
23 flexibility a way of putting something in tier 1 and
24 not having it available for 50.59 change by just using
25 a tolerance? Does that make sense or not?

1 MR. TAYLOR: I personally don't think you
2 could do that. There are tolerances in the analyses
3 that are included, but if you -- those are usually not
4 large tolerances. If you are doing pipe stress
5 analysis, when something is -- whatever -- there are
6 lots of examples where they go beyond what are so-
7 called normal tolerances and then you have to rerun
8 the stress analysis.

9 COMMISSIONER ROGERS: Well, I wasn't
10 thinking so much of interferences and things of that
11 sort, but questions of obsolescence.

12 CHAIRMAN CARR: Let me go back --

13 COMMISSIONER ROGERS: You set a tolerance
14 on a component, then it would allow perhaps for a new
15 design of some sort that was better but a little bit
16 different without necessarily having to --

17 CHAIRMAN CARR: Well, I've seen those
18 situations where the guy who builds the computer says,
19 "I want an input of 120 volts and so many amps plus or
20 minus 0.1." The guy that builds the generator says,
21 "Okay, I'll give you 119.6 plus or minus 3," and you
22 end up with a tenth of a volt overlap that makes it
23 work or not work. That's just --

24 COMMISSIONER ROGERS: Yes.

25 CHAIRMAN CARR: Everything meets the specs

1 as long as it doesn't drift a little.

2 DOCTOR MURLEY: Okay. We haven't talked
3 about construction methods here and we're not really
4 prepared to. There is some discussion by the industry
5 that they would go to modularized factory construction
6 for a large part of it, in which case you could hold
7 tolerances better than field fabrication --

8 CHAIRMAN CARR: And assemble submarine
9 sections by lasers and they seem to fit great.

10 DOCTOR MURLEY: Yes. And then you can do
11 that. But I don't think, at least in the next decade
12 or so, that any nuclear plant would be built that way.
13 So, you'd have to still rely on a great deal of field
14 fabrication and field construction.

15 CHAIRMAN CARR: What you're convincing me
16 of is what the utilities convinced me of Monday and
17 that is that number 1 plant could have a tier 1, tier
18 2 or some degree of flexibility, but why would you
19 need that in a second plant? If you've done it once,
20 you now know what the designs are, what the
21 interferences were and you don't have them anymore.
22 That's standardization as far as I'm concerned.

23 MR. TAYLOR: Only obsolescence in that
24 case really because it can extend over a 15 --

25 DOCTOR MURLEY: They use the same

1 drawings?

2 CHAIRMAN CARR: Hopefully, the
3 construction period won't be so long that things will
4 get obsolete during the building period.

5 COMMISSIONER ROGERS: Yes, but the design
6 certification goes on for a long time.

7 DOCTOR MURLEY: The design certification
8 can go for 30 years, as I understand it.

9 CHAIRMAN CARR: But I see no reason they
10 can't apply for a change in the certification. If a
11 guy wants to change that all he has to do is come in
12 and request the change.

13 DOCTOR MURLEY: There's a process, yes.

14 CHAIRMAN CARR: Let's go ahead.

15 COMMISSIONER CURTISS: One other question
16 there on that, Ken.

17 If I understand the industry's proposal,
18 they are talking about a two-tiered process both for
19 the vendor certification as well as the COL, parallel
20 to the COL, where under the tier 2 process they could
21 50.59 change this. We've talked about the three
22 reasons why they'd like to have that and focused
23 really on what happens when you get out and construct
24 the plant, a utility goes out and finds out that
25 they're interferences or operates it over time and

1 decides that the equipment is obsolete or needs to be
2 updated to take advantage of the state-of-the-art.

3 What -- I guess I'm still struggling to
4 understand the need for a 50.59 provision for tier 2
5 in the vendor certification where they seem to be
6 implying that the vendor, for some reason, would need
7 to change the certification. Obviously there aren't
8 going to be any interferences in just the paper
9 document of a certification. What sort of need do you
10 see, if any, for 50.59 flexibility in the vendor
11 certification and recognizing that the Part 52 already
12 provides the flexibility to come in and get an
13 amendment or an exemption?

14 CHAIRMAN CARR: I didn't hear him make
15 that particular -- if I did, I missed it.

16 COMMISSIONER CURTISS: Maybe I
17 misunderstood what they said. Aren't they looking for
18 50.59 flexibility in the second tier? There's a two-
19 tier process --

20 DOCTOR MURLEY: Yes.

21 MR. TAYLOR: Yes.

22 COMMISSIONER CURTISS: -- reflected in the
23 certified design.

24 CHAIRMAN CARR: That's an uncertified
25 portion.

1 COMMISSIONER CURTISS: I understand that
2 and my question -- they're proposing that second tier
3 because of the perceived need for flexibility in the
4 information that a vendor has in a second tier of a
5 certification.

6 COMMISSIONER REMICK: But, Jim, wouldn't
7 certification, including tier 2, be a part of the COL
8 of the combined license and therefore you would need
9 that 50.59 for tier 2 if it's --

10 COMMISSIONER CURTISS: A COL holder would.

11 COMMISSIONER REMICK: A COL, I assume,
12 would just take a certified design and --

13 CHAIRMAN CARR: I'm not sure we're not
14 confusing configuration control after the plant is
15 built and licensed. That's different.

16 MR. TRAVERS: What I have heard is that
17 the vendors don't anticipate exercising that kind of
18 flexibility between the issuance of the design
19 certification and the COL stage, but rather it comes
20 into play at the COL period. In fact, there's a
21 disincentive -- in fact, I don't even know if 50.59 is
22 applicable to vendors that hold design certification.
23 Perhaps the General Counsel --

24 MR. PARLER: Well, I think that's already
25 been raised in this meeting and the answer was no, but

1 the vendors would be stuck with what the certified
2 design rule provides unless they wanted to seek to
3 have an exemption made or an amendment made to it.

4 COMMISSIONER CURTISS: Okay. Go ahead.

5 MR. VIRGILIO: There were three attributes
6 that need to be recognized regarding this approach
7 that we pointed out in the paper. One is the
8 increased flexibility will lead to less engineering
9 being completed at the time of certification. Two,
10 changes made under the 50.59 type process could be
11 subject to challenge in hearings that could delay
12 operation. Third, the process will allow for erosion
13 of standardization, as we've discussed.

14 (Slide) Moving on to the next slide, we
15 talk about the certification at level 4 and you could
16 certify the entire application and you would still
17 have a limited number of issues resolved and it would
18 leave much to be certified at the COL stage.

19 In summary, our paper has asked the
20 Commission to provide us guidance on level of detail
21 in what's included in the application and what's
22 included in the certification, and we've asked the
23 Commission to provide us guidance on that two-tiered
24 approach.

25 That completes my portion of the

1 presentation. I'd like to turn it back over to Tom.

2 DOCTOR MURLEY: There were some questions
3 that came up Monday with regard to staff reviews and I
4 thought I would take a moment and discuss what our
5 situation is, what our status is and how we would plan
6 on going about those reviews.

7 We, as you know, have been reviewing the
8 evolutionary plants for over three years now and we
9 view the phasing of these reviews to be such that
10 the evolutionary plants would lead the way. First of
11 all, they look familiar to the staff. We have
12 reviewed some recently. We can use the standard
13 review plan generally. The major areas where we do
14 see differences are in the severe accident area and
15 here we've just recently brought up the issues that we
16 saw with the Commission and those have been resolved.

17 So, we think that the evolutionary plants
18 then will lead the way and the reviews of those will
19 be used to flush up technical policy issues for the
20 Commission like we did on the severe accident issues.
21 And as we move further into the certification process,
22 we think they will flush up the procedural policy
23 issues as well that may arise and this seems to be one
24 of them, for example, the level of detail.

25 So, I do not see any major hurdles or

1 conceptual problems in the staff review of the
2 evolutionary plants with one possible exception and
3 that is we've not looked carefully yet at the issues
4 of automation and control room design and certain I&C
5 issues. We may be back to the Commission with policy
6 issues in those areas, what degree of automation to
7 agree to and so forth.

8 Coming along next then would be the
9 passive plants and I don't know but they'll probably
10 be at least a year or so behind in terms of the
11 evolutionary plants. We will be doing some reviews of
12 the passive plants, particularly with EPRI, but I view
13 these as focusing on conceptual issues and broad
14 safety policy issues.

15 There appears to be on the surface, for
16 example, several areas where the designs don't
17 strictly meet our current regulations and so we'd have
18 to flush those out and discuss those with EPRI and
19 with the vendors. The standard review plan does not
20 apply strictly and we'd have to --

21 CHAIRMAN CARR: Let me ask you about that.

22 DOCTOR MURLEY: Yes.

23 CHAIRMAN CARR: I guess maybe I don't
24 understand if we're only -- if we're going to certify
25 a design, a standard review plan seems to me to be

1 pertinent to where you've got 100 designs out there,
2 but we're only going to have four or five perhaps.
3 Each one of these is going to be its own standard
4 review.

5 DOCTOR MURLEY: That's right.

6 CHAIRMAN CARR: So, I don't see that --

7 DOCTOR MURLEY: Well, because the
8 standard --

9 CHAIRMAN CARR: I guess what I'm saying is
10 why go through trying to change the standard review
11 plan rather than just reviewing the design.

12 DOCTOR MURLEY: Because the standard
13 review plan is the collection of 20 years of
14 wisdom --

15 CHAIRMAN CARR: Oh, but if we lag --

16 DOCTOR MURLEY: -- on the part of the
17 staff on what to look for. How does one review
18 certain aspects of electrical systems, for example?
19 So, it's a guide and you're quite right, once we have
20 a plant certified, then the standard review plan would
21 serve no purpose for that plant.

22 CHAIRMAN CARR: Yes. I guess my question
23 is you're going to have to go through the same process
24 to review the standard review plan that you're going
25 to have to go through to review the design. You're

1 trying to match the review plan to the design to see
2 what you ought to be looking at. It seems to me
3 simpler just to look at the design. Am I being
4 confused?

5 DOCTOR MURLEY: I think I get your point,
6 but let me say that --

7 CHAIRMAN CARR: Because we're only going
8 to do it once for that design.

9 DOCTOR MURLEY: Let me say it another way.
10 A plant comes in that doesn't meet our regulations,
11 let's say. It's new, it may meet the intent, it may
12 even be better, but it doesn't meet what the staff has
13 seen before. I don't feel I can just throw that
14 design to the staff and say, "Review it." What we do
15 is tear the applications apart and the electrical
16 branch gets a certain part, the thermal hydraulics
17 branch and systems branch get certain parts. But we,
18 the management of the staff, have to stand above and
19 do an assessment of the overall safety of the plant.
20 That has to come first, I think, on that, particularly
21 on the passive plants. In doing that, we're going to
22 have to give the staff guidance that it's okay that
23 they don't meet the regulations in this area because
24 of some other compensating features.

25 So, it's that kind of broad view that

1 we're going to have to take and we just simply can't
2 turn a new design over to the staff because they
3 wouldn't know what to do. And I think that is
4 probably -- or at least going to take a year, in my
5 judgment, from what I've seen of some of the aspects
6 of the passive designs, discussing these issues. We
7 can do it. I don't feel that it's impossible, but
8 there are pretty broad issues at stake here.

9 CHAIRMAN CARR: I guess I'm still
10 confused. If you're going to look at a gas-cooled
11 reactor, we'll say, and your standard review plan
12 probably doesn't fit that today, the same amount of
13 work is involved in trying to decide what the standard
14 review plan ought to be, it looks to me like, as to
15 decide what the reactor ought to be.

16 DOCTOR MURLEY: Yes, you're quite right.
17 The further away you get from --

18 CHAIRMAN CARR: And as long as you're only
19 going to certify one design at a time, it's not like
20 you're going to have 35 BWR designs to certify.

21 DOCTOR MURLEY: Now, your point is, I
22 think, the further you get away from the type of light
23 water reactors that we have licensed, then the less
24 value is the standard review plan.

25 MR. TAYLOR: So, that's the embodiment.

1 CHAIRMAN CARR: That's my --

2 COMMISSIONER ROGERS: Well, presumably,
3 the standard review plan embodies some sense of what's
4 important.

5 DOCTOR MURLEY: Yes, it does.

6 COMMISSIONER ROGERS: What the key issues
7 are and it's very valuable to bring those up to the
8 surface so that you're reminded of them, even if you
9 have to start anew. So, you don't want to be bound
10 and hog tied by the standard review plan, but on the
11 other hand as a guidance as to what the important
12 things are to be considered, certainly would seem to
13 be a useful backdrop to the new process.

14 DOCTOR MURLEY: And the way you do seismic
15 analyses, the way you do structural analyses would be
16 the same for any plant.

17 COMMISSIONER ROGERS: Yes, they're not
18 going to change that.

19 DOCTOR MURLEY: The electrical systems and
20 how you ensure separation and diversity --

21 CHAIRMAN CARR: I guess my concern was
22 hung up with having to work on the standard review
23 plan for a year before you attack the design.

24 MR. TAYLOR: I think he's emphasizing the
25 difference of the passive features and how the passive

1 plant represents a step change from the existing --

2 COMMISSIONER ROGERS: Where the exceptions
3 are that have to be dealt with individually.

4 MR. TAYLOR: -- and there are going to be
5 differences. We already know there are differences.

6 CHAIRMAN CARR: Okay.

7 MR. TAYLOR: The point is getting those
8 areas identified and where they represent major design
9 issues, to get them to the staff and to the Commission
10 is going to be part of our process and will be really
11 changed --

12 CHAIRMAN CARR: Before, when you had seven
13 applications on your plate, I can see why you needed
14 some kind of standard review, but you're only going to
15 have one application probably at a time.

16 COMMISSIONER CURTISS: And to some extent
17 those issues are going to be taken up, I gather, in
18 the EPRI requirements document as well. To the extent
19 that they don't involve nitty-gritty detailed
20 licensing review, that may further minimize the need
21 for an SRP.

22 CHAIRMAN CARR: Okay.

23 DOCTOR MURLEY: I was kind of responding
24 to Commissioner Remick's point on Monday where he said
25 that we will have four designs. I don't think we'll

1 have them all at the same time and at the same stage.
2 That was my point. I think the evolutionary designs
3 are going to move ahead and they're more traditional.
4 The passive plants, even though we're working on them
5 at the same time, we're not at the same level of
6 detail and the staff is not looking at the kind of
7 detail in the passive plants that they will be at the
8 same time for the evolutionary plants. I think it
9 will be at least a year or two later.

10 COMMISSIONER REMICK: Tom, I have to
11 respond to that. I agree with you that you won't have
12 four at the same time, but you have two now and you
13 have presumably two in 1992. And the one way to
14 identify these differences and the issues that need to
15 be brought up for decision is to be in there reviewing
16 and know what those plants are, staff looking at them
17 and determining what are the problems if there are
18 any. The only way to do that is get the staff in. We
19 can't do it around the table.

20 DOCTOR MURLEY: Now, let me turn to the
21 question of staffing levels and the skills because we
22 have been concerned about that and we're taking action
23 now to -- I've, some months ago, asked my senior staff
24 to prepare a plan for how we're going to increase the
25 staff skills that we need because we recognize NRR is

1 thin in several disciplines. Although we have been
2 reviewing plants all along, we certainly do not have
3 the workload that we had ten and 15 years ago.

4 Our focus since the organizational change
5 in 1987, the focus has been on assuring the safety of
6 operating reactors. So that's what my focus and --

7 CHAIRMAN CARR: We don't want to lose that
8 focus.

9 DOCTOR MURLEY: I know it and what I tell
10 my staff is now we've got to move to a dual focus
11 where, as I understand the Commission, the first
12 priority is still to make sure the operating plants
13 are safe. At the same time, we've got to have the
14 capability to do these reviews. I'll have this plan
15 ready in a month or so and I'll need to talk with Jim
16 Taylor to go over that with him.

17 The Agency as a whole has a great deal of
18 expertise for tech reviews. Not all of it, of course,
19 is in NRR. Also, we find that we're still able to
20 attract talented new people. My staff just told me
21 today that we've been able to attract, for example, an
22 assistant professor in thermal hydraulics area. We've
23 hired two new instrumentation and control people who
24 are talented. They've got to, of course, now learn
25 the regulatory system and learn the standard review

1 plan and that sort of thing, but the people are out
2 there and we -- at least I feel confident that we can
3 get them. We have to have a plan and we have to
4 organize our recruiting and that sort of thing, but we
5 can do it.

6 One other point I would make on the
7 passive --

8 CHAIRMAN CARR: Excuse me.

9 DOCTOR MURLEY: Yes.

10 CHAIRMAN CARR: Are you thinking about
11 project-izing these reviews?

12 DOCTOR MURLEY: Yes. Oh, I see what
13 you -- no, I haven't decided that yet. In other
14 words, would we take off all the people that are
15 needed to --

16 CHAIRMAN CARR: A la the TVA effort, or the
17 Comanche Peak effort or the special projects?

18 DOCTOR MURLEY: We haven't decided that,
19 Mr. Chairman. It's certainly a consideration.

20 CHAIRMAN CARR: It's one thing to focus
21 on. I don't know if you've got that much technical
22 talent.

23 DOCTOR MURLEY: That's right. If we've
24 got three and four and five and six to do, I don't
25 think I can do it. If there's maybe only one or one

1 at a time, that's a possibility. It would certainly
2 be more efficient. I've had some experience along
3 those lines.

4 We do now have more management time and by
5 that I mean the senior managers of NRR because we've
6 got Seabrook and Shoreham and Comanche Peak behind us
7 and Peach Bottom and Pilgrim and so forth.

8 CHAIRMAN CARR: If I make a note of that,
9 you got more time.

10 DOCTOR MURLEY: We -- I find that we have
11 more time at least to focus on these conceptual issues
12 that are being presented in the -- by the passive
13 plant design.

14 I think there's one other final point that
15 we've touched on a bit. That is the greater the level
16 of detail, obviously the more information that comes
17 into NRC and the more need we have for management
18 guidance to the staff on scope and depth of review.
19 That's why even though we don't necessarily need to
20 redo the standard review plan, we do have to have
21 something to control the staff from getting into just
22 great gory detail because their mode of operation is
23 to review something that's put in front of them.

24 If there's material that is brought in
25 that we would not normally ask for for our safety

1 judgment, but is required by the Commission for
2 standardization purposes, then the staff would
3 normally want to get into it and ask a lot of
4 questions. We, the management, would have to give
5 them guidance on what is the proper scope and depth.
6 That's a point to consider in your deliberations, I
7 think.

8 COMMISSIONER ROGERS: Isn't that --

9 MR. TAYLOR: Excuse me. If we -- I think
10 I'd like to add to that. If we certify a large body
11 of design, Tom's point is well taken. Depending upon
12 the area and its effect on safety and its
13 significance, we're going to have to devise plans of
14 an audit-type review in specific design details
15 whereas in other areas we'll be doing a much broader
16 review. That type of management direction of the
17 staff is going to be important depending upon the
18 level of information that is to be certified. It's
19 going to take a lot of planning to organize the staff
20 and limit the reviews where it is appropriate to limit
21 them, but to ensure we very carefully cover the safety
22 issues that are our mission. That's very important.

23 COMMISSIONER REMICK: Wasn't that one of
24 the purposes in the standard review plan, to lay
25 out --

1 MR. TAYLOR: But some of these would--
2 and the balance of plant area and other things that
3 may be submitted will represent additional areas of
4 review beyond what we do today.

5 COMMISSIONER REMICK: I think that
6 supports Tom's interest in having the standard review
7 plan updated because it provides guidance to the
8 staff.

9 COMMISSIONER ROGERS: Well, just on this,
10 it is a different ball game because, as you pointed
11 out, in the past, the reviews have ultimately had
12 available the whole plant almost, as-built. And it's
13 very important to know where to make that cut so that
14 you don't go below that. Otherwise, you'll never get
15 there in terms of detail. Just how to do that, it
16 seems to me, is very important at the outset that you
17 try to think that thing through very carefully and
18 really essentially develop some kind of training
19 exercises for experienced reviewers who are used to
20 the old system that may find difficulty in just
21 knowing where to -- how far to go.

22 DOCTOR MURLEY: That's why, Commissioner,
23 I think it's important for the process to take through
24 the first certification, one that's close to what
25 we've done before, namely an evolutionary type of

1 plant.

2 COMMISSIONER ROGERS: Yes.

3 DOCTOR MURLEY: Personally, I think there
4 will be less pitfalls, that we'll be able to handle it
5 better and once we've done that, then we can take the
6 more innovative designs on through certification.

7 CHAIRMAN CARR: Do you foresee level 1 as
8 encompassing lighting?

9 MR. VIRGILIO: Level 1? Yes, I would.

10 CHAIRMAN CARR: It's tough to tell where
11 you need the lights until you get the plant built.
12 Usually they're not where the gauge boards are or
13 there's a pipe in between that or it's too high or you
14 can't reach it. But you think that would be in there,
15 huh?

16 MR. VIRGILIO: Yes. Level 3 today -- or
17 let's go back to the way we do our traditional review.
18 You look at the branch technical position and our
19 appendix on fire protection. We review lighting today
20 in certain respects, even --

21 CHAIRMAN CARR: That's after the plant is
22 built?

23 MR. VIRGILIO: Actually, we have criteria
24 that requires it to be built to certain
25 specifications.

1 CHAIRMAN CARR: Incandescent or
2 florescent?

3 MR. VIRGILIO: Not to that level of
4 detail, no, sir.

5 COMMISSIONER CURTISS: Let me jump back to
6 the resources question for a minute and see if I can
7 get some of the -- recognizing that you're going to
8 come up in a month or so with a more detailed plan.
9 Let me see if I can focus on some of the nuts and
10 bolts of where we are today in view of the process
11 that's been established and the issues that are
12 currently pending.

13 Tell me what the choke point is or the
14 critical path is today on the EPRI requirements
15 document and the two evolutionary designs. Whose
16 court is the ball in? Are we resource constrained?
17 Give me a feel for, as I say, what the choke point is.

18 DOCTOR MURLEY: Let me turn to Bill
19 Travers.

20 MR. TRAVERS: We are continuing actively
21 to review not only the EPRI requirements evolutionary
22 document, but also the ABWR and the Combustion 80+ LRB
23 submittal and wrapping up our review on the
24 Westinghouse SP/90 PDA.

25 But let me start with the question you've

1 asked about EPRI evolutionary. What we're doing today
2 on EPRI evolutionary is tracking reasonably well with
3 the process that we laid out for you in SECY-90-065.
4 We currently have been meeting with EPRI. We've had
5 some five meetings or so in the last month and a half
6 to go over the issues that remain to be resolved with
7 them. I should note that the Commission decisions on
8 our SECY-90-016 have facilitated our heading towards
9 closure on a number of these issues.

10 Right now, our goal is to issue nearly all
11 of the draft SER chapters by about October of this
12 year. Of course that would follow submission to the
13 Commission of each of those chapters that we're
14 working on currently. As you know, we've issued draft
15 SERs on Chapters 1 through 5 to date. So this would
16 encompass the remaining Chapter 6 through 13.

17 COMMISSIONER CURTISS: Do you still plan
18 on a roll-up document?

19 MR. TRAVERS: EPRI plans on a roll-up
20 document and we do as well. EPRI's roll-up document
21 is due in next month, I believe, and our roll-up
22 document would be in the form of our final safety
23 evaluation report.

24 COMMISSIONER CURTISS: Do you have a date
25 for that?

1 MR. TRAVERS: And that's tracking, as I
2 mentioned, with the dates and I'll estimate case 1 in
3 SECY-90-065. So, it's tracking on about a schedule
4 for May or thereabouts in 1991.

5 COMMISSIONER CURTISS: All right. Is the
6 EPRI review resource constrained? You talked about
7 the thinness in some of the NRR areas and the
8 question's been raised about the potential
9 shortcomings in resources. Are we constrained in any
10 way on resources?

11 DOCTOR MURLEY: I don't know. What's the
12 staff finding, Bill?

13 MR. TRAVERS: Well, I think given the
14 thinness that we do have in several areas, you could
15 always improve the schedule somewhat. But I think
16 what we've indicated and I think what we still feel is
17 that it's not entirely resources limited. You could
18 improve somewhat these schedules, I feel, if you had
19 people you could devote today with the necessary
20 expertise and skill. But I think that would be a
21 difficult thing to do at this point.

22 COMMISSIONER CURTISS: Okay. Could you
23 speak to the two vendor reviews?

24 MR. TRAVERS: Yes. With regard to the
25 advanced boiling water reactor, we have a current

1 target of trying to issue all or essentially all of
2 the draft SER chapters -- excuse me, all of those
3 chapters early in calendar year '91, within that first
4 month or two or three. That, again, would track with
5 the schedule for case 1 listed in SECY-90-065.

6 COMMISSIONER CURTISS: Do you have a
7 projected FDA date?

8 MR. TRAVERS: The projected FDA date is
9 case 1 or somewhere between case 1 and case 2 for 90-
10 065 and currently that's listed as July '91 to 12/91.
11 So, summer to end of calendar year '91 is the current
12 estimated FDA date.

13 COMMISSIONER CURTISS: With design
14 certification taking roughly a year after that?

15 MR. TRAVERS: We've estimated 18 months
16 for the purpose of scheduling.

17 COMMISSIONER CURTISS: I guess that's
18 increased since I looked at it last time.

19 MR. TRAVERS: It was 15 to 18 months.

20 COMMISSIONER CURTISS: 15 to 18.

21 MR. TRAVERS: I think we've consistently
22 held with that kind of projection.

23 COMMISSIONER CURTISS: So we'd be in a
24 position to certify the first design, assuming that's
25 the first one out of the blocks, 18 months in mid '93.

1 MR. TRAVERS: That would put you at early
2 to mid '93, correct.

3 CHAIRMAN CARR: Depending on the level of
4 detail?

5 MR. TRAVERS: Yes, that's a caveat, I
6 should note. Currently, of course, we're not
7 reviewing to certainly a level 1. I could say and
8 I --

9 CHAIRMAN CARR: Well, level 1, I presume,
10 is not ready for review.

11 MR. TRAVERS: No, it's not. If you asked
12 the question about ABWR and where do they stand
13 relative to the options presented --

14 COMMISSIONER CURTISS: I was going to ask
15 that.

16 COMMISSIONER REMICK: So was I.

17 MR. TRAVERS: I think it's fair to say
18 that in some areas the ABWR review is at or close to
19 level 2. I think you've heard presentations that
20 speak specifically to reactor building structure and
21 so forth as areas in which we're getting a very high
22 level of detail. Rebar configuration and so forth,
23 spacing, levels of information that we traditionally
24 don't require and don't request in the conduct of our
25 SRP reviews.

1 COMMISSIONER CURTISS: Do you have level 2
2 detail for control systems?

3 MR. TRAVERS: No.

4 CHAIRMAN CARR: I would wager you've got
5 level 2 detail for what they're already building
6 somewhere.

7 MR. TRAVERS: And I think in ABWR space,
8 we have the potential for getting a very high level of
9 detail across the board because of what is being done
10 or planned in Japan. But we don't have in a number of
11 areas level 2 information. In fact, we're working in
12 some areas to get to level 3.

13 COMMISSIONER CURTISS: And CE's System
14 80+?

15 MR. TRAVERS: We are about to send up our
16 comments to the Commission on the LRB submittal for
17 Combustion. I expect that will be up within the next
18 several weeks. Several of the issues that we've
19 identified in that paper correspond to the kinds of
20 issues you've already been considering in the 016.
21 So, I think you'll find a great deal of parallel in
22 that.

23 DOCTOR MURLEY: Now, Commissioner, we're
24 giving you our best judgments right now, of course.
25 The two things I think could change is one you

1 mentioned, the level of detail could change because we
2 have not been reviewing certainly level 1 kind of
3 detail. Also, I'm a little concerned, as I mentioned,
4 about the use of automation and how much would be
5 contemplated in these plants, particularly in --

6 CHAIRMAN CARR: Especially in control
7 systems and instrument systems.

8 DOCTOR MURLEY: -- the control room and
9 control systems. We have not in the past done a lot
10 of detailed review of that and so it would be somewhat
11 new to the staff and that could take longer than we
12 thought.

13 MR. TRAVERS: And we are also looking to
14 identify, as early as possible, any additional policy
15 issues along the lines of what Tom's mentioned. One
16 of them, for example, could be an issue related to
17 what positive control is necessary for the ABWR vent.
18 That may be something --

19 COMMISSIONER CURTISS: Do the --

20 CHAIRMAN CARR: Let me jump into that for
21 just a second.

22 COMMISSIONER CURTISS: Go ahead.

23 CHAIRMAN CARR: The review that you do, I
24 have a little bit of trouble with the level of
25 standardization effecting your review. In the first

1 place, you're going to look at the safety primarily.
2 Standardization is going to be decided by how much
3 detail we require, but that still doesn't affect what
4 you have to look at from a safety standpoint.
5 Standardization comes as a bonus requiring it, if we
6 put it in there. That doesn't mean you have to do a
7 deeper level of detail in your review, does it, if
8 you're satisfied that safety is all right? Am I
9 missing something?

10 DOCTOR MURLEY: I guess I'm not sure I --

11 MR. TAYLOR: I would think that if we're
12 going to certify by rule, that the submission in that
13 certification process, we're at least going to have to
14 audit/review a lot of material that we wouldn't
15 necessarily have decided it was material with specific
16 safety decision. That's the way I view it personally.
17 I would think you would expect that.

18 MR. TRAVERS: I think that's the control
19 of process issue that Tom was referring to earlier.
20 Certainly as a minimum, I feel we would need to --

21 CHAIRMAN CARR: But I know if the guy
22 submits the design and you review it for safety and
23 say, "Yes, that design is a safe design," then if we
24 certify it, why would you have to look at it any
25 harder than you do now from a safety standpoint?

1 MR. TRAVERS: For one reason, to assure
2 ourselves that the level of detail encompassed in the
3 Commission's policy was met, I think. And beyond
4 that, other staff questions may arise from --

5 CHAIRMAN CARR: And you don't normally get
6 the balance of plant safety --

7 MR. TAYLOR: That's right.

8 CHAIRMAN CARR: I understand that piece of
9 the action.

10 MR. TAYLOR: That's an expansion.

11 CHAIRMAN CARR: Okay.

12 COMMISSIONER CURTISS: I had two other
13 questions on resources. For the GE and CE reviews,
14 are they resource constrained today? Is resources the
15 critical path?

16 MR. TRAVERS: Again, I don't think
17 resources are the critical path.

18 COMMISSIONER CURTISS: Okay. On the--
19 you indicated that you're going to submit the CE
20 licensing review basis to the Commission in the next
21 few weeks. At one of the recent meetings, the
22 Chairman raised the question about whether -- about
23 what the role of the LRB should be in view of what the
24 Commission has said on the EPRI requirements document.
25 Are we going to get the staff's views on the

1 continuing need for an LRB in a time frame that would
2 permit us to reach that policy decision in conjunction
3 with what you're recommending on CE?

4 MR. TRAVERS: I have to look at the date
5 that we owe you an answer on the question relative to
6 passive. Of course we're talking about the
7 evolutionary combustion design. I should clarify that
8 what we're providing the Commission or what we expect
9 to be providing the Commission in the relative near
10 term are our initial comments on the submittal on LRB.
11 There are subsequent steps in the process which would
12 ultimately lead to issuance of an LRB and my best
13 projection of that right now is in the spring to summer
14 time frame of 1991. That's in accordance with the
15 process.

16 COMMISSIONER CURTISS: I guess as a
17 general observation, one of the things I'd like to
18 recommend for us to consider, we now have the staff on
19 the hook for six month briefings on this program. It
20 would be helpful in my mind, perhaps in conjunction
21 with those briefings, if we had a submittal from the
22 staff around that time that would go through a
23 discussion for the EPRI requirements document and the
24 individual vendor design reviews of what's been
25 accomplished in the past six months, what the critical

1 path is, what you see as the major policy issues, and
2 your continuing update of the schedule as you get into
3 it so that we -- it's been very helpful to get a sense
4 of that here, but a more formal presentation of that
5 is something that I toss out for us to think about.

6 CHAIRMAN CARR: But I would encourage you
7 not to wait six months if you've got a problem we can
8 help with.

9 COMMISSIONER CURTISS: Exactly, sir.

10 COMMISSIONER REMICK: Did you give us the
11 expected date for the system 80+ for the FDA
12 certification?

13 MR. TRAVERS: I didn't, no. I gave you an
14 idea of the projected time frame for issuance of LRB,
15 which is spring, summer of '91. SECY-90-065 dates for
16 CE 80+ lists August of '93, case 1, and May of 1994,
17 but we need to -- and the Commission has asked us and
18 I know the Executive Director for Operations has asked
19 us to reassess these dates and we'll be doing that
20 shortly.

21 CHAIRMAN CARR: Those dates are pre-level
22 of certification dates?

23 MR. TRAVERS: Right.

24 COMMISSIONER REMICK: I hope you'll
25 address what the vendor has requested as an

1 anticipated schedule from their perspective.

2 MR. TRAVERS: Yes.

3 MR. TAYLOR: That concludes the
4 presentation, sir. If there are questions --

5 CHAIRMAN CARR: I've lost track of where
6 we were.

7 Commissioner Rogers, would you like to
8 kick-off?

9 COMMISSIONER ROGERS: All right.

10 Do you have any feeling about the degree
11 of standardization that, say, the French have achieved
12 in their program, how that might compare with what we
13 are thinking of here in possibilities?

14 DOCTOR MURLEY: Yes, as a matter of fact--

15 COMMISSIONER ROGERS: Is there anything
16 comparable that we could grab onto?

17 DOCTOR MURLEY: I guess I didn't bring it
18 with me, but they have in fact six LWR designs. There
19 are three versions of the 900 megawatt plant, two
20 versions of the 1,300 megawatt plant, and they have a
21 1,400 megawatt plant. So in terms of the kinds of
22 numbers of types of designs that they would have to
23 keep control of, it would be comparable to say a
24 couple of evolutionary plants and a couple of passive
25 plants. So it's not -- they don't have rigid

1 standardization even in France. But within a class,
2 my sense of things is they have, primarily as a
3 commercial proposition, bought things in -- ordered
4 from Framatom and bought in bulk quantities.

5 CHAIRMAN CARR: Buy six at a time.

6 DOCTOR MURLEY: Yes. And it makes a lot
7 of sense. You can have economies of quantity and also
8 you can keep a shop operating routinely. So I think
9 they did it and it's been quite good and quite useful
10 from that point of view.

11 COMMISSIONER ROGERS: Just within our own
12 realm of experience, can we -- do you have any feeling
13 about the differences in the level of regulatory
14 attention that's been required say for the two SNUPPS
15 plants versus other non-standardized comparable
16 plants? Have you seen any impact there?

17 DOCTOR MURLEY: Difference in the level
18 of--

19 COMMISSIONER ROGERS: Regulatory
20 oversight. Do we need to --

21 DOCTOR MURLEY: During the review?

22 COMMISSIONER ROGERS: After they've been
23 open to operate.

24 DOCTOR MURLEY: Oh, after they're open. I
25 really don't think we'd see much difference, no. I

1 just don't think there's much difference. First of
2 all, they're in different regions so that the regional
3 attention is greater.

4 COMMISSIONER ROGERS: Well, how about
5 during construction?

6 MR. TAYLOR: Wolf Creek followed the
7 Callaway experiences very carefully. They still had
8 some construction problems, principally implementation
9 issues, some welding issues and so forth that came up.
10 But there was during that period a lot of back and
11 forth between those two utilities. My understanding
12 is that continues today, so there is that benefit
13 of experience one to the other.

14 DOCTOR MURLEY: But if I follow the line
15 of your question, there is no doubt in my mind that
16 standardization can lead to regulatory and safety
17 benefits by being able to take the experience of a
18 large number of plants and knowing that it applies.
19 And so there's clearly going to be a --

20 COMMISSIONER ROGERS: But no way of
21 quantifying that.

22 DOCTOR MURLEY: Yes, there's no way to
23 quantify it.

24 COMMISSIONER REMICK: If I may, Ken, just
25 ask -- I certainly agree with what you're saying. No

1 question about it. But there is a down side to
2 standardization. And that is right now the Soviets
3 are replacing the steam generators in all their VVER
4 1000s, all those plants' steam generators, because
5 it's common cause. And so you increase the
6 possibility of common cause problems with standard
7 plants. That doesn't say I'm against standard plants.
8 I'm for them. There is a down side.

9 DOCTOR MURLEY: Yes.

10 COMMISSIONER ROGERS: Just coming back--
11 I think you're really answered it, but I've been
12 looking at your Table 1 and the list of items, line
13 item 8, physical attributes and configuration of each
14 component. You didn't list that under level 2, and
15 it's my understanding of your definition of level 2
16 that it was to encompass attributes. Is that the key
17 attribute question? Is that the separator?

18 MR. VIRGILIO: Yes, that would be our
19 answer.

20 COMMISSIONER ROGERS: Physical attributes
21 in level 7, but -- the key ones are in 7, but 8 --

22 MR. VIRGILIO: Under the line, yes.

23 COMMISSIONER ROGERS: -- 8 has all the
24 attributes, is that --

25 MR. VIRGILIO: Yes.

1 COMMISSIONER ROGERS: That's the
2 distinction between them, okay.

3 Just for the General Counsel, do you agree
4 with the industry opinion expressed the other day that
5 the company proprietary information that's submitted
6 in the design be certified for rulemaking could be
7 withheld from public disclosure?

8 MR. PARLER: I agree with what he -- the
9 testimony or the remarks said that we did in the rule
10 in response to the comment. That is, we moved in the
11 direction of giving guidance in the area which would
12 be, at least for Part 52 purposes, compatible with the
13 procedures and the policies that were applied for
14 licensing.

15 However, the implication that the issues--
16 the inference, at least, that I drew that the matter
17 had been resolved so that you could reach the result
18 that you just stated in your question to me, I do not
19 agree with that. That is not a new issue. For years
20 we've had the -- it doesn't come up frequently. It
21 hasn't come up frequently in my judgement.

22 But the balance that has to be struck on
23 the one hand for protecting -- proper protection of
24 proprietary data in a licensing decision -- with the
25 necessity to make public the underlying rationale for

1 the safety findings and for other licensing decisions.
2 And if you cannot strike that balance, you would have
3 a problem. We cannot license something without an
4 adequate publicly-stated rationale for the safety
5 findings.

6 COMMISSIONER ROGERS: So there still might
7 be some questions?

8 MR. PARLER: Which would have to be dealt
9 with on a case by case basis.

10 COMMISSIONER ROGERS: Okay. Because that
11 seemed to be somewhat handled the other day as if it
12 was really very clearly settled.

13 MR. PARLER: That implication I do not
14 agree with.

15 COMMISSIONER ROGERS: Okay. In the SECY
16 paper on page 11 -- and I think you quoted it, Marty,
17 to some extent -- it states that solidifying only the
18 top level design criteria and performance standards in
19 tier 1 will among other things reduce the safety and
20 cost benefits of standardization. I wonder if you
21 could just say a little bit on what you are really
22 thinking about with respect to safety reduction
23 foreseen from reduced standardization.

24 MR. VIRGILIO: With regard to level 3, let
25 me back up a little bit. What's flexible in the

1 design, you're not going to see the finalization of
2 all the details for that portion of the design. If
3 you allow some flexibility, I believe in certain areas
4 the tendency is going to be to do less engineering
5 work up front than there will be if you certify the
6 design.

7 You have to -- when you certify the
8 design, the NSSS vendor or whoever is marketing the
9 product has to know that they can deliver it for a
10 cost, that they can actually produce this information.
11 If you allow some flexibility in it, well, they're
12 going to assess the risk of being able to supply this
13 information or complete this design. And on that
14 basis, they're going to do more engineering work or
15 less engineering work. Now what's not certified,
16 then, is then less solidified.

17 COMMISSIONER ROGERS: But isn't the safety
18 protection offered by the entire process that has to
19 be followed before we finally issue a construction and
20 operating license?

21 MR. VIRGILIO: We will have to make our
22 minimum safety findings in all the levels, except for
23 level 4. You know, we still have to find that all the
24 safety issues are resolved. It's a matter of how much
25 additional detail and how much additional engineering

1 you have. All across the board in 1, 2, and 3 you can
2 draw that line that follows along with the standard
3 review plan minimum safety findings, and that line is
4 common to all three of those levels of
5 standardization, plus you've got ITAACs that carry you
6 through to ensure that the as-built plant matches what
7 you certified.

8 COMMISSIONER ROGERS: Well, I just wanted
9 to try to understand a little bit better the whole
10 notion behind the phrase "safety reduction foreseen
11 from reduced standardization."

12 MR. VIRGILIO: With additional
13 standardization you get additional safety benefits, as
14 we've all discussed here today. And with less
15 standardization, to an extent, I think there is an
16 over --

17 COMMISSIONER ROGERS: But that would not
18 necessarily relate to the design, though. I mean,
19 they may relate to other questions such as being able
20 to maintain it or something.

21 DOCTOR MURLEY: What I had in mind, this
22 phrase, I think the -- I don't think the reduction in
23 safety relates to design, quite frankly. Because
24 50.59 almost says that it can't change in a
25 fundamental safety way. Where it affects is the

1 operating experience area that I was mentioning.

2 COMMISSIONER ROGERS: Well, it might be
3 well to make that point clear, to separate that out.

4 DOCTOR MURLEY: Yes.

5 COMMISSIONER ROGERS: Because it is--
6 it's built into the SECY right now, and one might
7 infer that this relates to the design.

8 DOCTOR MURLEY: Yes. That's a good point.

9 COMMISSIONER ROGERS: It probably relates
10 to other matters than design.

11 DOCTOR MURLEY: Yes.

12 CHAIRMAN CARR: The intangibles of
13 standardization are in standardized training,
14 standardized spare parts, you know, all the things
15 that go along with it that contribute to safety.

16 COMMISSIONER ROGERS: I think I'll just
17 pass.

18 CHAIRMAN CARR: Commissioner Remick?

19 COMMISSIONER REMICK: Well, first I'd like
20 to compliment the staff on the SECY paper. I thought
21 it was very concise. Table 1 was extremely helpful to
22 me to put the various levels in perspective, so I want
23 to compliment you on that.

24 I guess I'm becoming convinced or have
25 been convinced that there's a need for some kind of

1 controlled flexibility beyond what 50.12 provides for
2 possible amendments. My big experience with 50.12
3 some of you might remember was the Clinch River
4 project, and it was not a simple process by any means.
5 So I'm not sure that 50.12 provides the type of
6 flexibility that I think is needed.

7 The proposed two-tier approach is one
8 possible way of incorporating the flexibility. One of
9 the biggest difficulties on the technical side -- I
10 don't know what the legal implications are -- would be
11 the ability to adequately develop what's in tier 1 and
12 tier 2 in a very concise manner and hopefully in a
13 manner that would be little confusion in future years,
14 what was in and what was not in. But I think it's
15 worthy of consideration.

16 My understanding is that OGC provided you,
17 Doctor Murley, with documents some time in the past
18 outlining what they thought was level detail in Part
19 52, required in Part 52. And although I think I lean
20 where Commissioner Curtiss is, that somewhere between
21 2 and 3 is where I'm starting to come out, I think we
22 certainly have to -- I have to still consider a level
23 1. So if I look at level 1, 2, and 3, and I look at
24 what the General Counsel has provided of what Part 52
25 requires on level of detail, do we know that level 1,

1 2, and 3 would provide that level of detail? And if
2 you don't remember, the 1s were that it would be at
3 least FSAR, perhaps final FSAR level. Would all three
4 levels provide that type of detail?

5 MR. VIRGILIO: Yes, and 2 and 1 more.

6 COMMISSIONER REMICK: Allow final safety
7 resolution of all safety issues? I think you've
8 answered that already in the positive. Is that
9 correct?

10 MR. VIRGILIO: Yes. In all three cases,
11 you're going to have sufficient information to make
12 your safety judgments.

13 COMMISSIONER REMICK: Permit judgement on
14 whether the proposed ITAAC will work?

15 MR. VIRGILIO: In levels 1, 2, and 3, yes,
16 you will.

17 COMMISSIONER REMICK: Permit a design
18 specific PRA?

19 MR. VIRGILIO: Yes.

20 COMMISSIONER REMICK: Permit the drafting
21 of procurement and construction specs?

22 MR. VIRGILIO: Yes. And what we talked
23 about earlier today was without recourse to
24 significant additional engineering on the part of the
25 applicant.

1 COMMISSIONER REMICK: Okay. And then
2 there was another. It says the detail on the
3 certifying rule should permit replacement of old
4 equipment with the latest advances without the need
5 for NRC approval.

6 MR. VIRGILIO: It becomes a problem in
7 level 1.

8 COMMISSIONER REMICK: Level 1.

9 MR. VIRGILIO: Where your recourse is
10 50.12 for making changes to the design. You've
11 certified that level of detail.

12 COMMISSIONER REMICK: Okay. Now you've
13 answered the question on the ABWR and System 80+ where
14 you essentially -- you say that essentially those are
15 about level 2 submittals. Excuse me, I guess Bill
16 said that.

17 DOCTOR MURLEY: I think they actually
18 characterize it as somewhere between 2 and 3.

19 COMMISSIONER REMICK: Oh, okay. And some
20 exceptions like I&C you don't have, and so forth.

21 Okay. Now would you consider --

22 CHAIRMAN CARR: Let me step in for a --

23 COMMISSIONER REMICK: Yes, please. Go
24 ahead.

25 CHAIRMAN CARR: That's where you say they

1 currently are, right? What do you think they're
2 requesting to be certified? You heard them pitch what
3 they want certified. Where does that fit in your
4 levels?

5 MR. VIRGILIO: Depends on the system. For
6 some systems I believe that they'll have the detail
7 and would --

8 CHAIRMAN CARR: No, I don't mean --

9 MR. VIRGILIO: -- would accept
10 certification.

11 CHAIRMAN CARR: I don't mean where they
12 happen to be now. What did you think they want in --

13 MR. VIRGILIO: Approximately level 3.

14 CHAIRMAN CARR: Three.

15 DOCTOR MURLEY: First I should say,
16 though, that I at least have not had any discussions
17 with General Electric on the two-tiered approach.

18 CHAIRMAN CARR: Yes.

19 DOCTOR MURLEY: So we're --

20 CHAIRMAN CARR: And I gather that industry
21 hasn't had a long time to look at your papers.

22 DOCTOR MURLEY: That's right.

23 CHAIRMAN CARR: So I assume there's going
24 to be some iteration here.

25 DOCTOR MURLEY: Yes.

1 COMMISSIONER CURTISS: And when you peg
2 their certification at level 3, that's a combination
3 of tier 1 and tier 2?

4 MR. VIRGILIO: Yes. That's correct.

5 COMMISSIONER CURTISS: I gather tier 1
6 would be somewhere down a ways?

7 CHAIRMAN CARR: Well, I think we're back
8 to what you said. Thirty percent of a -- or half.

9 COMMISSIONER CURTISS: Standardization, I
10 guess in my view, is a two-sided coin. The first side
11 is provide all the information up front and get it
12 finalized. And the other side of the coin is and
13 don't change it, perhaps with the exceptions that have
14 been identified on obsolescence, developments in the
15 state of the art and interferences.

16 And I guess that's why I see the tier 2
17 distinction being so critical, because that moves you
18 away from standardization to the extent that you can
19 50.109 -- 50.59 issues, and unless the safeguards that
20 were cited Monday by Mr. Rowden prove to minimize the
21 extent of 50.59 even more than we've seen in the past.

22 CHAIRMAN CARR: The only thing that would
23 be certified would be tier 1.

24 MR. TAYLOR: That's true.

25 CHAIRMAN CARR: And therefore, the only

1 thing to be standardized would be tier 1, actually.

2 COMMISSIONER CURTISS: That's quite a ways
3 down, isn't it?

4 MR. VIRGILIO: What they envision for
5 certifying is what you typically see in chapter 1.2 of
6 an FSAR today, which may be about 100 pages of design
7 information and 20 pages of layout --

8 CHAIRMAN CARR: Yes, it's a basic plan
9 description is all it is.

10 MR. VIRGILIO: It's implemented by the
11 staff safety evaluation report.

12 COMMISSIONER CURTISS: That's one of the
13 questions I have. I don't mean to jump in here, but
14 while we're on it I asked the question on Monday about
15 what was meant in Mr. Rowden's statement that the
16 level of detail in tier 1 would be what's contained in
17 an SSAR 1.2 based upon an SER level of detail, which
18 is in 1.2 of the SER. I went back and pulled one of
19 those out since the meeting and got the Shoreham one.
20 The SER on 1.2 is a page and a half.

21 MR. VIRGILIO: Let me try to clarify that.
22 I read the transcript over and it is a little bit
23 confused. What the intent is is to go back to the
24 Shoreham FSAR and pull chapter 1.2 of that FSAR, then
25 supplement it with the staff's SER in total. And that

1 would be what the proposal is, as I understand it
2 right now.

3 COMMISSIONER CURTISS: 1.2 chapter level
4 of detail --

5 MR. VIRGILIO: 1.2 in your FSAR.

6 COMMISSIONER CURTISS: -- general
7 description --

8 CHAIRMAN CARR: FSAR.

9 MR. VIRGILIO: FSAR. Now that's a general
10 description of the facility.

11 CHAIRMAN CARR: It's a plant description.

12 MR. VIRGILIO: And it is a description of
13 the systems. It'll talk a little bit about the
14 batteries, for example. It'll tell you what IEEE
15 standards the batteries are designed to meet. It'll
16 tell you you've got four batteries and they're
17 separate and independent.

18 Now what they would propose to do in
19 addition to that would be go back and look at the
20 staff's SER with regard to the battery system and
21 supplement that section 1.2 of the FSAR with the
22 discussion from chapter 8 of the SER on batteries.

23 COMMISSIONER CURTISS: Everything that's
24 covered in the FSAR --

25 CHAIRMAN CARR: Description, only a little

1 more detailed.

2 MR. VIRGILIO: Yes. If you think about an
3 FSAR being 20 volumes, this may be about three-
4 quarters of one volume.

5 DOCTOR MURLEY: Commissioner, I don't know
6 if I understood you to say that the tier 2 material
7 would not be certified. That's true, but it would be
8 standardized, as I understand it. They -- the
9 applicant would view that as being approved as part of
10 the certification process.

11 CHAIRMAN CARR: But he has the option of
12 changing, as long as he doesn't change it --

13 COMMISSIONER CURTISS: It depends on
14 whether you view certification as a one-sided coin or
15 a two-sided coin.

16 DOCTOR MURLEY: They could change it
17 through 50.59 process, but they would not -- my
18 understanding is they would not envision doing that at
19 all between --

20 CHAIRMAN CARR: But I don't have any
21 control over it if they do do it.

22 COMMISSIONER CURTISS: We'd get notified,
23 but that's right.

24 CHAIRMAN CARR: Notified.

25 MR. PARLER: In any event, Mr. Chairman,

1 the tight controls over changes to what is in the
2 standardization rule which impose a very high
3 threshold for changes, that certainly, at least as I
4 understood the discussion Monday, would not apply to
5 whatever is in tier 2.

6 CHAIRMAN CARR: That's right.

7 DOCTOR MURLEY: The 50.59 process is, as
8 you know, employed by operating plants. We require
9 them to keep records of it. We sometimes go in and
10 audit it. And we feel that we have -- that it is not
11 abused, that we have control over the process.

12 CHAIRMAN CARR: But it doesn't necessarily
13 lead to standardization.

14 DOCTOR MURLEY: That's right.

15 MR. TAYLOR: That is correct.

16 CHAIRMAN CARR: They're not abusing it,
17 but--

18 DOCTOR MURLEY: Okay.

19 COMMISSIONER CURTISS: Let me put it
20 differently. If you look at Part 52 as constituting
21 sort of a quid pro quo where the quid was the
22 applicant, the vendor in this case, supplying
23 essentially complete design information up front, in
24 exchange for that and in exchange for an opportunity
25 for the public to participate early in the process,

1 two things flow from that: issue preclusion -- you
2 could not raise issues later in the process that
3 you've had an opportunity to raise at the front end,
4 vendor certification or the COL; and backfit
5 protection -- the Commission would not come in and
6 change the provisions of the certified, in this case,
7 design, same thing for the COL.

8 If you'll look at it that way, then -- I'm
9 not sure I've reached a final view on the two-tier
10 approach -- but what it seems to me to be saying is
11 that they are seeking -- I want to follow-up with the
12 General Counsel's question -- they seem to be seeking
13 issue preclusion for all tier 1 and all tier 2 issues
14 but with backfit protection as we understood it on
15 Monday under 50.109, not the Part 52 procedures but
16 with the flexibility under 50.59 to change.

17 Question. Does that diminish the quid pro
18 quo in any respect? Do you say that our part of the
19 deal -- a prove it up front right for the public to
20 participate and protection against at least Part 52
21 backfit -- is met by an equal quo in this case, the
22 commitment not to change that part of the certified
23 design? It's important for tier 2 to be referenced in
24 some way so as to be certified in their view, as I
25 understand it, so they get those protections.

1 Now it's not clear to me. The question I
2 guess I had that I'd like to follow-up on is do you
3 get issue preclusion with their approach under 50.59?
4 What are the rights that would attach if an issue is
5 50.59 in tier 2 from the standpoint of opportunity for
6 a hearing either before or after that change has been
7 made? Either now or at some point I'd like it if Bill
8 could address that.

9 MR. PARLER: Well, the paper covers that
10 to some extent. To the extent that you have changes,
11 you could have challenges raised later on, either at
12 the CPOL stage or after the CPOL is issued prior to
13 the time of authorization for licensing which the
14 statement of considerations suggests -- and I've
15 already alluded to earlier in this meeting, was not
16 necessarily what the approach had in mind, that is to
17 defer the resolution of issues and defer possible
18 challenges to the time that the plant was ready to
19 operate -- but certainly to the extent that the
20 applicant or the vendor could have an agreement in the
21 certified design rulemaking proceeding that certain
22 things have been resolved a particular way in tier 2,
23 and therefore the issue should not be raised again.
24 It would seem to me to make it kind of difficult for
25 the issues to be successfully raised again, even

1 though the tier 2 resolution is not a part of the
2 rule. That's the sort of hybrid that is kind of
3 puzzling to me.

4 On the other hand, I said in this paper
5 that I had no legal objection to it. Mr. Virgilio at
6 the beginning pointed out that there were two policy
7 issues involved. I would agree with that. I've heard
8 some of the discussion here. I do not know how the
9 Commission would wish to come down.

10 All that I can say is that the effects of
11 the tier 2 approach, say in the level 3 context, that
12 are talked about in the middle of page 11 and that
13 were summarized to some extent on the slides are not
14 necessarily completely compatible with some of the
15 goals that the Commission expressed in its statement
16 of considerations to Part 52.

17 Having said that, there is a need I gather
18 from what I have heard for flexibility. Indeed, the
19 Part 52 rule and its statement of considerations
20 recognizes that. A question is whether you have to
21 have a two-tier approach as described in order to
22 provide the requisite flexibility for the several
23 reasons that have been mentioned. So it's not just
24 flexibility. It's also issue preclusion, which
25 perhaps I would question about whether the trade-offs

1 are equivalent or roughly in parity.

2 COMMISSIONER CURTISS: It's a difficult
3 question. There are some statements in the statements
4 of consideration that talk about -- as they were
5 described, suggest this tier 2 approach. At the same
6 time, as I think the industry acknowledged on Monday,
7 the so-called 52.97(b)(2) provision which simply says
8 if you make any change in your license, including a
9 change in the ITAAC, that shall be considered an
10 amendment and require a hearing before operation,
11 seems to me to reflect a sentiment as well about how
12 you strike the balance between flexibility on the one
13 hand and the 50.59 or some other approach and
14 stability or standardization as we've called it here.

15 DOCTOR MURLEY: It seems to me,
16 Commissioner, that there might be some additional--
17 if this flexibility under 50.59 were allowed, I felt
18 that we in the staff for operating reactors kept a
19 relatively close eye on it so that it didn't become
20 abused. And it could be that maybe there are some
21 procedural requirements on how 50.59 is implemented
22 that the Commission might want to consider.

23 For example, there is a three part test as
24 you know to decide whether an issue involves an
25 unreviewed safety question. I remember when I was a

1 regional administrator I would have my staff
2 periodically look at their 50.59 reviews, because the
3 rule does require them to keep records, and where we
4 were able to go in and look at those at any time and
5 decide ourselves if it -- and we were the ultimate
6 arbiter, I felt, on that three part test as to whether
7 an issue did involve an unreviewed safety issue. And
8 if we felt it did, then we said no you cannot do that
9 under 50.59.

10 COMMISSIONER CURTISS: One of the
11 observations I guess I've had about 50.59 is that,
12 while I don't have any disagreement with the way it's
13 been implemented in the past, it has been implemented
14 in the context of single plants, customized plants
15 where it didn't make a lot of difference if they went
16 in for a single plant and 50.59, let's say, a steam
17 generator replacement.

18 Question. Are there considerations that
19 have to do with standardization and the need to keep
20 those plants of a given vendor certification looking
21 alike in some respect that would suggest a criterion
22 under 50.59 that would focus on that aspect? As I
23 say, that's the -- when we take the 50.59 approach and
24 apply it to standardized design, I think there are
25 additional considerations that arise that may call --

1 DOCTOR MURLEY: Yes.

2 COMMISSIONER CURTISS: -- for some
3 modified approach if one was necessary.

4 CHAIRMAN CARR: I would think after the
5 plant started operation you're under a configuration
6 control problem rather than a standardization problem,
7 and there are going to be changes made that won't be
8 the same for all plants. Some guy will have a bad
9 component that somebody else didn't buy.

10 DOCTOR MURLEY: That's like we're seeing
11 in Callaway and Wolf Creek. They are slowly changing.

12 CHAIRMAN CARR: So you would have to look
13 at that, but I doubt that we'll maintain the same
14 degree of standardization throughout the life of the
15 plant that we have when we started.

16 COMMISSIONER CURTISS: For example, if we
17 say that it's important for us to know that this pump
18 or this valve in the aux. feedwater room has to be
19 reachable and has to be designed in a certain way so
20 that if that issue comes up we can go ahead and step
21 in and treat that issue the same for all plants. If
22 it's been 50.59, our ability to do that diminishes at
23 the plant, and if that's a consideration that we'd
24 like to see standardization so that we can treat that
25 valve or that pump the same way should it lead to a

1 problem, that's the kind of consideration that --

2 COMMISSIONER ROGERS: Excuse me.

3 COMMISSIONER CURTISS: Go ahead.

4 COMMISSIONER ROGERS: This point of
5 configuration control I think is a very interesting
6 one that I hadn't thought about in terms of the long-
7 term effects here on standardization. Do we
8 contemplate something in granting the construction
9 permit operating license to do anything beyond what
10 we've been talking about --

11 DOCTOR MURLEY: Yes.

12 COMMISSIONER ROGERS: -- with respect to
13 50.59, maintain standardization --

14 DOCTOR MURLEY: We have asked the
15 applicants for certification to submit their tech
16 specs, their maintenance program, their surveillance
17 program, and in general their overall reliability
18 assurance program that will assure us that the level
19 of safety we think is in the certified plant will be
20 maintained over the life of the plant. Now we haven't
21 got into a lot of detail in reviewing this, but that
22 is our means of --

23 COMMISSIONER ROGERS: It's safety, but not
24 standardization.

25 CHAIRMAN CARR: But if they make a change

1 to the certified portion of the plant they have to get
2 our permission.

3 DOCTOR MURLEY: That's correct, yes.

4 CHAIRMAN CARR: What we're getting
5 standardized is the certified portion of the plant.

6 COMMISSIONER ROGERS: Yes.

7 CHAIRMAN CARR: I mean, at least we've got
8 configuration control over that piece of it, other
9 than from a safety standpoint.

10 COMMISSIONER ROGERS: Well is that true?
11 Once the plant is built, everything in the standard
12 design could, if there is a tier 1, tier 2 approach
13 here, anything in tier 1 that was approved initially
14 and at the time that the operating license was granted
15 would not be subject to 50.59 later on in the life of
16 the plant?

17 CHAIRMAN CARR: That's what's been said.

18 DOCTOR MURLEY: After the OL, that's a
19 good question.

20 COMMISSIONER ROGERS: Suppose ten years
21 down the road they want to change something and--
22 like a 50.59, could they do it?

23 MR. PARLER: Well, we have a regulation,
24 52.97, that says any modification to, addition to, or
25 deletion from the terms of the combined license,

1 including any modification to or addition to from the
2 inspections, tests, criteria, et cetera, is a proposed
3 amendment to any such license. There shall be an
4 opportunity for a hearing.

5 But if something is not an amendment--
6 and you figure that out on a case by case basis -- but
7 is a change that's under 50.59, a change and not an
8 amendment, you can go the 50.59 route, no matter
9 whether something is in tier 1 or tier 2 or anyplace
10 else.

11 COMMISSIONER ROGERS: It's just a question
12 of whether we could start to drift apart and lose
13 standardization after having established it initially.

14 COMMISSIONER CURTISS: You can't -- if I
15 understand it correctly, you can't 50.59 anything in
16 your license.

17 MR. PARLER: You can't change something
18 that's in the license.

19 COMMISSIONER CURTISS: They are under
20 standardized designs, right?

21 CHAIRMAN CARR: My understanding was we
22 were going to make tier 1 part of the license.

23 MR. VIRGILIO: Yes.

24 COMMISSIONER ROGERS: Then the answer is
25 no, it could not happen. Okay.

1 CHAIRMAN CARR: That's what they said
2 yesterday, that they were going to make it part of the
3 license -- or Monday, I mean.

4 Commissioner Remick, it's your question
5 period.

6 COMMISSIONER REMICK: As I was saying, I
7 have several questions that relate to the GE and CE
8 submittal in reference to levels and implications. I
9 can get those outside this meeting, but I'd like to
10 pick up on the discussion because I was going to bring
11 up some similar questions.

12 I wondered if anybody has given thought to
13 the idea -- and I say this not facetiously, but to put
14 it in perspective -- of something called ASARA, as
15 standard as reasonably achievable. Has anybody
16 thought about a condition in the combined operating
17 license to the owner or industry owners group
18 commitment that in making something like 50.59 or
19 whatever it's tailored to be, if one goes with a two-
20 tier, which would assure that consideration to the
21 advantages and so forth of standardization be included
22 in the 50.59 type of reviews? I think you've alluded
23 to some things very close to that here in your
24 discussion.

25 MR. TAYLOR: Well, the opportunity for

1 hearing and challenge at the time of combined license
2 would help to --

3 COMMISSIONER REMICK: It certainly does.

4 MR. TAYLOR: -- what you will.

5 COMMISSIONER REMICK: It certainly does.

6 MR. TAYLOR: -- cause them to hesitate --

7 COMMISSIONER REMICK: The condition or
8 commitment might still assure it in those cases where
9 they wanted to take that risk anyhow.

10 Yes?

11 MR. PARLER: Mr. Chairman, keeping in mind
12 the goals of standardization is a point that is
13 emphasized in the Part 52 and the statement of
14 considerations now, even if the request is a granting
15 of exemptions or amendments I would assume that if
16 there is something like a tier 2 approach that would
17 permit the use of 50.59 in connection with that tier
18 that there would be a similar admonition from the
19 Commission or the staff, if not by clarification or
20 regulation in the approval that's issued by the rule.

21 COMMISSIONER REMICK: Okay. One other
22 question. Have you thought about if the Commission
23 opted for either level 1, level 2, or level 3, what
24 the implications on staff resources might be?

25 DOCTOR MURLEY: Not in detail, but I

1 alluded to them. The greater the amount of detail
2 that comes in, the greater the amount of effort by the
3 staff. And it's not linear. It's geometric, I think,
4 because --

5 CHAIRMAN CARR: The other side of that is
6 you don't have to go ask for more.

7 COMMISSIONER REMICK: Knowing the staff,
8 they'll ask for more.

9 DOCTOR MURLEY: No, no. We'll ask
10 questions. In fact, it's a matter of understanding
11 what we've got in front of us. And there will be two
12 aspects to it.

13 One is, my managers will have to -- and
14 I'll direct them to lay out some guidelines for the
15 scope and depth of this massive amount of material
16 that would come in under level 1. That's a complete
17 design. And we don't quite know how to quantify it,
18 but people talk in terms of roomfuls of information.
19 So we'd have to sort out what -- the scope and depth
20 that they review.

21 And then once -- even once that's done,
22 there will be a large amount remaining we believe that
23 will engender Qs and As because we don't understand
24 some detail of it. So I can't give you a firm answer,
25 but the more detail the more staff effort it will take

1 we feel.

2 COMMISSIONER REMICK: So you don't know
3 whether we have adequate resources if we went one way
4 or the other?

5 DOCTOR MURLEY: That was the important
6 caveat that I put in my answers to whether we had
7 enough staff.

8 COMMISSIONER REMICK: Okay.

9 DOCTOR MURLEY: It depends a little bit on
10 the decision that the Commission makes.

11 CHAIRMAN CARR: The schedule depends on
12 the decision we're going to make.

13 DOCTOR MURLEY: Yes.

14 COMMISSIONER REMICK: If you look at Table
15 1, my last question -- I'm sorry, I forgot I had this
16 one. If you look at Table 1 -- and I guess I'm coming
17 out somewhere between 2 and 3 personally at the
18 moment, 2.46 or 2.32, I don't know which -- but if you
19 look at level 2, starting with 7, component
20 descriptions and characteristics, and if where you see
21 the C there for certification, if that were changed to
22 flexibility and then one had some kind of a provision
23 as General Counselor says is already in Part 52 or we
24 had something which I say you might call ASARA which
25 would hopefully guarantee that people would very

1 seriously consider the importance of standardization,
2 if that wouldn't provide reasonable standardization
3 and yet, you know, provide the other benefits and what
4 we're trying to get here.

5 Is there anything that you see wrong with
6 something between 2 and 3 which would be basically
7 taking Table 2 -- whether I would put item 8 in or
8 not, I'm not quite clear at the moment, but changing
9 the Cs to Fs, if there would be some potential for
10 flexibility.

11 CHAIRMAN CARR: Where are you going to
12 start changing the Fs?

13 COMMISSIONER ROGERS: Seven on?

14 COMMISSIONER REMICK: It would be 7 on,
15 yes.

16 CHAIRMAN CARR: We don't do that today. I
17 mean, they review that.

18 COMMISSIONER CURTISS: There'd be less
19 information than we --

20 CHAIRMAN CARR: That's less information
21 than we're doing today when we license.

22 COMMISSIONER REMICK: No, it would be in
23 the application. It would not be in certification.
24 I'm sorry. I would eliminate the C and replace it
25 with an F.

1 CHAIRMAN CARR: Well, but that's what I
2 say. Today when we license the plant to operate we've
3 got that detail. And you're saying we're going to
4 give it a combined license without that?

5 COMMISSIONER REMICK: I'm saying it
6 basically would be in tier 2. Some of those items
7 would be in tier 2, so there'd be flexibility.

8 MR. VIRGILIO: As I said earlier, we could
9 pick any point, you know. We've just offered four
10 points on a spectrum of choices.

11 COMMISSIONER REMICK: I understand, but
12 I'd like to hear the advantages and disadvantages of
13 something like that.

14 MR. VIRGILIO: We specifically asked
15 industry with regard to the 50.59-type test whether
16 they had considered a factor into control
17 standardization, as you alluded to earlier. And they
18 went back and considered it for some period of time
19 and came back to us and said it would be very
20 complicated and we don't know how we could do it right
21 now. So we asked them to think about that and that
22 was their response, so I'll offer you that with regard
23 to flexibility and your proposal to maybe have another
24 factor in addition to the three factors for an
25 unreviewed safety question. I'm not saying it's out

1 of the question. That was just their response.

2 COMMISSIONER REMICK: Okay. Well,
3 basically what I'm trying to say here is suppose you
4 took level 3 and added in the items starting below the
5 line there that are in level 2 as A&C? It's a 2.3.
6 It's a 2.4. It's something like that. Are there
7 obvious advantages or disadvantages is the question
8 I'm asking. I realize it can be done, depending on
9 what the Commission decides, but what are the
10 implications?

11 MR. VIRGILIO: I think the implications
12 are you would probably get more engineering done for
13 those issues than you would have otherwise.

14 MR. TAYLOR: You have the engineering.

15 COMMISSIONER REMICK: Okay.

16 COMMISSIONER ROGERS: Could I just jump in
17 for a second?

18 COMMISSIONER REMICK: Sure.

19 COMMISSIONER ROGERS: I have to get
20 recharged in between my questions.

21 As you've pointed out, these levels 1, 2,
22 3, and 4 are just examples of some possibilities.
23 Have you thought of any more general principles for
24 establishing levels beyond just the cut-off here at
25 the traditional SRP? In other words, is there any way

1 that one could establish some kind of a general rule
2 that might guide essentially the kind of level
3 definition that you've established here?

4 MR. VIRGILIO: With regard to the
5 differences between 2 and 3, remember it's the risk-
6 significant physical attributes. That's a
7 characterization I like to fall back on when I think
8 about how do I describe the difference between 2 and
9 3. It's the lessons we've learned from operating
10 experience now incorporated in the certification,
11 focusing on those key attributes where we've known or
12 have discovered problems through operating experience.

13 COMMISSIONER ROGERS: And that's going to
14 be different for every kind of a system that you look
15 at, right?

16 MR. VIRGILIO: That's correct.

17 COMMISSIONER ROGERS: This just happens to
18 be the HVAC system, so this kind of a characterization
19 would be quite different for some other system.

20 MR. VIRGILIO: That's correct.

21 COMMISSIONER ROGERS: Well, it sounds to
22 me as if it's going to be very difficult to kind of
23 wrap that up in any kind of a general statement of
24 what would be in tier 1 and what would be in tier 2.
25 It would depend very much on the system and the

1 particular design overall, and it would have to be
2 negotiated individually it seems to me, decided
3 individually rather than as a Commission policy, a
4 generalized Commission policy. Am I right on that?

5 It sounds very difficult for me to say
6 that the Commission could decide through a policy
7 decision of some sort what would go into tier 1 and
8 what would go into tier 2 if we adopted a two-tier
9 approach, because it all depends on what system you're
10 talking about.

11 DOCTOR MURLEY: Quite frankly,
12 Commissioner, I think that we need to probably -- you
13 need to give us some guidance and then we need to come
14 back to you one more time with that guidance --

15 COMMISSIONER ROGERS: Well, we need help
16 on this, I think.

17 DOCTOR MURLEY: -- about how we would
18 implement it and how you -- how we would finally do
19 it. Because, I agree with you. I don't know how you
20 would formulate a general level type of
21 standardization right now based on what we've given
22 you.

23 COMMISSIONER REMICK: But you would need
24 the guidance if the Commission approved a two-tier or
25 whatever?

1 DOCTOR MURLEY: Yes.

2 COMMISSIONER REMICK: You would need that.

3 DOCTOR MURLEY: Yes.

4 COMMISSIONER REMICK: And some indication
5 about where you might draw the lines in general. But
6 we look to the staff and the industry to negotiate,
7 perhaps coming back to the Commission for approval,
8 presumably coming back.

9 MR. TAYLOR: Yes. You'd have to agree for
10 what's to be certified.

11 CHAIRMAN CARR: Well, we've agreed not to
12 vote until we get the ACRS comments.

13 COMMISSIONER REMICK: Oh, absolutely.
14 Absolutely.

15 MR. TAYLOR: You would ultimately be
16 there.

17 CHAIRMAN CARR: I'd hesitate, personally,
18 to get onto a tier 1, tier 2 approval until I got the
19 staff's input on just how they thought they could make
20 it work.

21 COMMISSIONER REMICK: Oh, sure.

22 COMMISSIONER ROGERS: Well, could you
23 comment on that? How do you see the tier 2 approach?
24 I mean, what's your feeling? Is it a nice little way
25 of looking at it?

1 CHAIRMAN CARR: I got the impression you
2 wanted to look at it a little.

3 DOCTOR MURLEY: Yes. I think we could--
4 I asked my staff that and I've thought a lot myself.
5 I think we could make it work. I do believe that tier
6 2 is going to take quite a few -- I mean -- tier 2 or
7 level 2?

8 CHAIRMAN CARR: Tier 2 --

9 COMMISSIONER ROGERS: Two-tier.

10 CHAIRMAN CARR: Two-tier approach that the
11 utilities --

12 COMMISSIONER ROGERS: Not level.

13 DOCTOR MURLEY: We feel quite comfortable
14 that we could make that work. We would put in tier 1
15 the things that we felt were absolutely necessary.

16 CHAIRMAN CARR: But would that not be
17 business as usual?

18 DOCTOR MURLEY: No, because the -- even
19 though there is this flexibility under 50.59 to change
20 the tier 2 stuff, there is an incentive for the
21 industry not to do that, not to make changes, because
22 there is -- it's always challengeable at some stage as
23 to whether they did follow the right -- made the right
24 decisions under 50.59. So I personally don't think
25 there's going to be a lot of changes, that they will--

1 and we, the staff, can keep a very close eye on it so
2 that they only use it when you run up against one of
3 these real problems like obsolescence or fit-out
4 problems. So I think we can make the tier 1, tier 2
5 system work.

6 CHAIRMAN CARR: Commissioner Curtiss?

7 COMMISSIONER CURTISS: Well, I guess I
8 don't have any questions. I just have a closing
9 observation.

10 Commissioner Rogers kind of touched on the
11 same point of confusion that I guess I have. It's
12 been a very helpful briefing and I think between
13 Monday and this briefing at least I personally have a
14 better feel of the entire range of issues here.

15 At the same time, and if we wait for the
16 ACRS views I guess what we've got before us is a SECY
17 paper that's a notation vote with four levels set out,
18 two of which probably aren't envisioned or
19 contemplated or maybe even permitted under Part 52.

20 I gather from what you're saying here, to
21 try to distill some of the key points that I see, the
22 level of information today that we get for a plant may
23 range from level 1 to level 3. There are certain
24 systems or components that we may actually be getting
25 level 1 information on today in the FSAR and the Qs

1 and As process. There may be other systems today that
2 we don't get that level of detail and in fact may get
3 down to level 3.

4 So I'm reluctant, I guess, to distill it
5 all down to a directive that you use level 2 or you
6 use level 1, but I'm intrigued by the thought that
7 there are certain principles that -- in fact, this has
8 been one of my frustrations as I've talked to my
9 staff. It's difficult to understand this without
10 resorting to examples, and then it seems to me it's
11 difficult to implement a policy that consists of a
12 series of Commission guidance on the heating coil type
13 for the HVAC system.

14 MR. TAYLOR: Yes, it is.

15 COMMISSIONER CURTISS: I want to think
16 about this, and I'll be anxious to see what the ACRS
17 recommends. But the key principles it seems to me
18 that emerge that may provide guideposts in my mind
19 are:

20 One, I don't think we ought to request any
21 less information than we do today. I don't think we
22 ought to bind the licensee -- in this case, the vendor
23 and the COL holder -- to any lesser extent than they
24 are today.

25 Two, I think we ought to -- whatever level

1 it is, I think we ought to in the context of
2 standardization be able to say that we are looking at
3 and responding to the risk-significant physical
4 attributes based upon the lessons that we have learned
5 from our key operating experience. And in large part
6 that's what standardization is all about, in my
7 judgement, taking advantage of the experience that's
8 been gained over the past and applying it to the
9 future reactors. And that's, I guess, a second
10 consideration.

11 Third, a point that's been touched upon in
12 the context of the 50.59 discussion. It does seem to
13 me that from the standpoint of changes -- and that
14 goes to the question of tier 1 versus tier 2, if we
15 use a two-tiered approach -- ought to be leavened -- I
16 don't know if ASARA is the right acronym or whatever
17 the concept is, but some consideration ought to be
18 given not only by the license holder but by the
19 Commission as well about the extent to which changes
20 on issues that are approved, whether in -- well, in
21 this case in tier 2, diminish the level of
22 standardization that we've sought to attain in
23 reviewing tier 2 information.

24 Now there may be other considerations and
25 it's fortunate that we've got some time to think about

1 this and get the views of the ACRS here when they meet
2 next month. I'll pursue my concerns individually as I
3 think about this, but this has been very helpful for
4 me.

5 CHAIRMAN CARR: I guess I need a little
6 explanation as to why you think the level 1 degree of
7 standardization would make the availability of
8 components more difficult to assure, which is a
9 comment in the paper there.

10 MR. VIRGILIO: I think over the life of
11 the certification you'll find vendors that would
12 supply these components going in and out of business.
13 And what you would probably force is custom design.
14 You would have the specifications laid out for a valve
15 or a pump and what you would force is somebody having
16 to custom-design or custom-build that valve or pump in
17 order to meet the certified specifications. That's
18 the intent of that statement.

19 CHAIRMAN CARR: Except there is -- you're
20 talking about the life -- you don't mean during the
21 construction period, then?

22 MR. VIRGILIO: No. I would mean over the
23 life of the certification.

24 CHAIRMAN CARR: Over the life of the
25 plant. And so you're talking about that becoming part

1 of the license, the certified portion of the plant.
2 But there is a method in there for him to apply for an
3 exemption to that.

4 MR. VIRGILIO: Certainly, 50.12.

5 CHAIRMAN CARR: One of the reasons,
6 obviously, for approving an exemption like that is
7 there's no other source.

8 And you said that you roughly figured it
9 would take about a year to revise the standard review
10 plan. Let's suppose we went to level 1 or 2. Do you
11 have to redo the standard review plan?

12 DOCTOR MURLEY: Yes, we would. We'd have
13 to do it mainly to give, as I said, the staff guidance
14 on scope and depth of review.

15 CHAIRMAN CARR: Are you going to have to
16 do it anyway?

17 DOCTOR MURLEY: Not for the evolutionary
18 plants.

19 CHAIRMAN CARR: No, no. I'm talking about
20 the evolutionary plants. If we go to level 1
21 evolutionary plant, do you have to revise the standard
22 review plan?

23 DOCTOR MURLEY: We would certainly -- if
24 not revising the standard review plan, I'd have to
25 prepare one that would give them guidance on what they

1 should look at and what they shouldn't look at. Now
2 whether we did it in the exact context of a standard
3 review plan, I think it would more likely be an
4 addendum.

5 CHAIRMAN CARR: A supplement.

6 DOCTOR MURLEY: A supplement to the
7 standard review plan.

8 CHAIRMAN CARR: Want to take a random
9 guess at how many FTE and delay we're talking about or
10 is that negligible in the overall picture?

11 DOCTOR MURLEY: Just a thought. My guess
12 is it would take us about six months to do it. And if
13 we look at what it's taking to prepare a standard
14 review plan for license renewal, it's taken our
15 section six months or something.

16 MR. TRAVERS: Yes. It's on the order of
17 six to eight months.

18 DOCTOR MURLEY: Yes. And how many people
19 are working?

20 MR. TRAVERS: That's to prepare it. And
21 then, of course, there's a process to getting it
22 approved, including the ACRS --

23 DOCTOR MURLEY: What I would probably do
24 is the same thing.

25 CHAIRMAN CARR: Well, do you have to do

1 that --

2 DOCTOR MURLEY: I'd have a separate
3 organization.

4 CHAIRMAN CARR: At level 3, would you have
5 to do that? I'm trying to find out where we depart
6 from business as usual.

7 DOCTOR MURLEY: I don't think so. No.
8 For the evolutionary plants, the amount of detail that
9 would come in under level 3 I think we are handling
10 now. I think we're kind of reviewing --

11 CHAIRMAN CARR: So level 3 is roughly
12 business as usual?

13 MR. VIRGILIO: Yes, it is. With the
14 addition of ITAACs, I would say it's business as
15 usual.

16 CHAIRMAN CARR: Well, to balance off
17 Commissioner Remick, I'm somewhere between 1 and 1.05,
18 I guess. But I'm flexible within that range.

19 Any other comments?

20 I'd like to thank the staff for the
21 briefing. The Commission has agreed to hold voting on
22 the staff's paper SECY-90-241 until we have received
23 the Advisory Committee on Reactor Safeguards' view.
24 ACRS views are expected shortly following their August
25 9 to 11 meeting. During this period, the Commission

1 will be considering the industry's views and the
2 staff's options in formulating a position to meet the
3 goals of preserving public health and safety and
4 achieving standardization for the next generation of
5 plants built in this country.

6 It would be helpful, I think, if you could
7 probably give us a paper that tells us how -- what
8 problems you see in implementing the tier 1, tier 2
9 industry approach so that we have some basis to factor
10 that into our decision. I'm still, I guess, a little
11 uneasy with the hazards in going to a level 1 or level
12 2 from our standpoint. So if you could, after you get
13 a few comments from the industry on our approach,
14 maybe you can give us a piece of paper to kind of
15 summarize how you see it at that point in time.

16 COMMISSIONER REMICK: Ken, you said level
17 1 and 2. Did you mean that or tier 1 and 2?

18 CHAIRMAN CARR: Both. I mean, I'd like
19 you to -- you're going to get comments from the
20 industry, no doubt, on this approach. And so I think
21 if you could wrap it all up in some kind of a "here's
22 how we see it and here's what we think the problems
23 are," it would be helpful to me anyway.

24 I personally favor submittal of
25 procurement specifications and construction and

1 installation specifications for all structure systems
2 and components in order to ensure standardization as
3 well as safety. However, I would consider the staff's
4 recommendations on those structures, systems, and
5 components for which it might not be feasible to
6 obtain this level of detail or it might not be
7 necessary to achieve standardization and therefore for
8 which only a level of detail which provides the key
9 physical attributes for components would be obtained
10 in these areas.

11 Any other comments?

12 We stand adjourned.

13 (Whereupon, at 4:24 p.m., the above-
14 entitled matter was concluded.)
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This is to certify that the attached events of a meeting
of the United States Nuclear Regulatory Commission entitled:

TITLE OF MEETING: BRIEFING ON ESSENTIALLY COMPLETE DESIGN ISSUE
FOR PART 52 SUBMITTALS

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: JULY 18, 1990

were transcribed by me. I further certify that said transcription
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ESSENTIALLY COMPLETE DESIGN FOR
PART 52 SUBMITTALS

JULY 18, 1990

Contact: M.Virgilio
Phone: 492-1257

Essentially Complete Design 1

TWO POLICY ISSUES

DESIGN DETAIL

FLEXIBILITY TO MAKE CHANGES

Essentially Complete Design 2

THREE VARIABLES

CONTENTS OF THE APPLICATION

MATERIAL AVAILABLE FOR AUDIT

MATERIAL IN CERTIFICATION

Essentially Complete Design 3

FOUR LEVELS

IDENTICAL PHYSICAL, FUNCTIONAL AND PERFORMANCE CHARACTERISTICS

PHYSICALLY SIMILAR/IDENTICAL FUNCTIONAL & PERFORMANCE CHARACTERISTICS

IDENTICAL FUNCTIONAL & PERFORMANCE CHARACTERISTICS

FUNCTIONALLY IDENTICAL/SIMILAR PRINCIPAL FEATURES

Essentially Complete Design 4

LEVEL 1

APPLICATION

ESSENTIALLY COMPLETE DESIGN

DESIGN CRITERIA & BASES

SYSTEM FUNCTIONAL DESCRIPTIONS

SYSTEM PERFORMANCE REQUIREMENTS

FAILURE MODE AND EFFECTS ANALYSES

SYSTEM P&IDs / FACILITY LAYOUT DRAWINGS

ELECTRICAL / I&C SCHEMATICS

COMPONENT PERFORMANCE CHARACTERISTICS

PHYSICAL ATTRIBUTES, ORIENTATION & LOCATION FOR COMPONENTS

GEOMETRIC ASPECTS FOR SUSPENDED COMPONENTS

COMPONENT SUPPORT / RESTRAINT SPECIFICATIONS

FINAL CONCLUSIONS ON SAFETY & STANDARDIZATION QUESTIONS

Essentially Complete Design 5

LEVEL 2

APPLICATION

ESSENTIALLY COMPLETE DESIGN

DESIGN CRITERIA & BASES

SYSTEM FUNCTIONAL DESCRIPTIONS

SYSTEM PERFORMANCE REQUIREMENTS

FAILURE MODE AND EFFECTS ANALYSES

SYSTEM P&IDs / FACILITY LAYOUT DRAWINGS

ELECTRICAL / I&C SCHEMATICS

COMPONENT PERFORMANCE CHARACTERISTICS

KEY PHYSICAL ATTRIBUTES FOR COMPONENTS

FINAL CONCLUSIONS ON SAFETY & KEY STANDARDIZATION QUESTIONS

Essentially Complete Design 6

LEVEL 3

APPLICATION

ESSENTIALLY COMPLETE DESIGN

DESIGN CRITERIA & BASES

SYSTEM FUNCTIONAL DESCRIPTIONS

SYSTEM PERFORMANCE REQUIREMENTS

FAILURE MODE AND EFFECTS ANALYSES

SYSTEM P&IDs / FACILITY LAYOUT DRAWINGS

ELECTRICAL / I&C SCHEMATICS

COMPONENT PERFORMANCE CHARACTERISTICS

FINAL CONCLUSIONS ON SAFETY QUESTIONS

Essentially Complete Design 7

LEVEL 4

APPLICATION

PRELIMINARY DESIGN

DESIGN CRITERIA & BASES

SYSTEM FUNCTIONAL DESCRIPTIONS

KEY COMPONENT PERFORMANCE CHARACTERISTICS

TRADITIONAL PSAR LEVEL OF DETAIL

FOR A TWO STEP LICENSING PROCESS

Essentially Complete Design 8

ALL LEVELS

AUDIT

AS NECESSARY TO SUPPORT SAFETY FINDINGS
TO A DEPTH THAT REVEALS:

PHYSICAL AND PERFORMANCE ATTRIBUTES FOR ALL STRUCTURES,
SYSTEMS AND COMPONENTS AFFECTING SAFETY

SPECIFICS OF INSTALLATION

Essentially Complete Design 9

LEVEL 1

CERTIFY

INFORMATION FROM APPLICATION, REVIEW
AND AUDIT NEEDED TO SUPPORT:

ACCEPTABILITY

CONFORMANCE

REASONABLE ASSURANCE

AND STANDARDIZATION

PHYSICAL ATTRIBUTES

GEOMETRIC ASPECTS

SUPPORT AND RESTRAINT DETAILS

Essentially Complete Design 10

LEVEL 2

CERTIFY

INFORMATION FROM APPLICATION, REVIEW
AND AUDIT NEEDED TO SUPPORT:

ACCEPTABILITY

CONFORMANCE

REASONABLE ASSURANCE

AND STANDARDIZATION

KEY PHYSICAL ATTRIBUTES AT COMPONENT LEVEL

Essentially Complete Design 11

LEVEL 3

CERTIFY

DESIGN CRITERIA AND BASES

SYSTEM FUNCTIONAL DESCRIPTIONS & PERFORMANCE REQUIREMENTS

FACILITY LAYOUT DRAWINGS

SYSTEM P&IDs

INCLUDE BY ASSOCIATION AND CONTROL VIA 50.59

ADDITIONAL INFORMATION FROM APPLICATION,
REVIEW, AND AUDIT NEEDED TO SUPPORT:

ACCEPTABILITY

CONFORMANCE

REASONABLE ASSURANCE

Essentially Complete Design 12

FLEXIBILITY TO ACCOMODATE CHANGE

CHANGE VIA SECTION 50.12

CHANGE VIA SECTION 50.59

Essentially Complete Design 13

LEVEL 4

CERTIFY

DESIGN CRITERIA AND BASES

SYSTEM FUNCTIONAL DESCRIPTIONS

KEY COMPONENT PERFORMANCE CHARACTERISTICS

ESSENTIALLY ENTIRE APPLICATION

ITAAC

VERIFY IMPLEMENTATION OF CERTIFICATION

SUPERIMPOSED ON EXISTING FRAMEWORK

DESIGN VERIFICATION

QA/QC

PRE-OP AND STARTUP TEST

DESIGN RECONCILIATION

NRC INSPECTION PROGRAM

ECD Backup 1

FACTORS INFLUENCING DESIGN DEVELOPMENT

ASSURANCE OF FEASIBILITY AND COST
CUSTOMER DESIRES
MANUFACTURER NEEDS
CRITICAL PATH
LICENSING REVIEW

FSAR - AN OUTPUT OF THE PROCESS

ENGINEERING COSTS

ECD Backup 2

STATUS OF EVOLUTIONARY DESIGNS

\$ INVESTED

% COMPLETE

PARTNERSHIPS

PASSIVE DESIGNS

ECD Backup 4

ITAACS

TWO TYPES

PERFORMANCE AND CONSTRUCTION ATTRIBUTES
FUNCTIONAL REQUIREMENTS

CONTENT AND LEVEL OF DETAIL

IMPLEMENTATION

HVAC SYSTEM AT VARIOUS LEVELS

	1	2	3	4
INFORMATION FOR ALL STRUCTURE/SYSTEMS AND COMPONENTS AFFECTING SAFETY (SCOPE)	A&C	A&C	N	N
INFORMATION FOR SAFETY RELATED AND RISK SIGNIFICANT STRUCTURES/SYSTEMS AND COMPONENTS ONLY (SCOPE)			A&C	A&C
1. DESIGN CRITERIA AND BASES	A&C	A&C	A&C	A&C
2. SYSTEM FUNCTIONAL DESCRIPTION	A&C	A&C	A&C	A&C
3. SYSTEM PERFORMANCE REQUIREMENTS	A&C	A&C	A&C	N
4. FAILURE MODE AND EFFECTS ANALYSES	A&C	A&C	A&C	N
5. SYSTEM P&IDs AND FACILITY LAYOUT DRAWINGS	A&C	A&C	A&C	N
6. ELECTRICAL & I&C SCHEMATICS	A&C	A&C	A&C	N
7. COMPONENT DESCRIPTIONS AND CHARACTERISTICS				
AIR INTAKES (RANGE FOR CAPACITY)	A&C	A&C	A&F	N
FILTERS (RANGE FOR EFFICIENCY/CAPACITY)	A&C	A&C	A&F	N
DUCTS (RANGE FOR SIZE)	A&C	A&C	A&F	N
FANS (RANGE FOR CAPACITY)	A&C	A&C	A&F	N
DAMPERS TYPE (RANGE FOR CLOSURE TIMES)	A&C	A&C	A&F	N
FLOW CONTROL DEVICES (TYPE)	A&C	A&C	A&F	N
AIR CONDITIONING UNITS (RANGE FOR CAPACITY)	A&C	A&C	A&F	N
COOLING COIL TYPE (e.g., CHILLED WATER)	A&C	A&C	N	N
HEATING COIL TYPE (e.g., ELECTRIC)	A&C	A&C	N	N
FAN TYPE (e.g., VANE AXIAL)	A&C	A&C	N	N
FAN DRIVE (e.g., DIRECT)	A&C	A&C	N	N
FILTER TYPE (e.g., CHARCOAL)	A&C	A&C	N	N
CHILLED WATER CIRC. PUMPS (RANGE FOR CAPACITY)	A&C	A&C	N	N
8. PHYSICAL ATTRIBUTES AND CONFIG. OF EACH COMPONENT	A&C	N	N	N
9. GEOMETRIC ASPECTS OF SUSPENDED COMPONENTS	A&C	N	N	N
10. COMPONENT AND STRUCTURAL SUPPORT DATA	A&C	N	N	N
11. AS-PROCURED COMPONENT PERFORMANCE DATA	N	N	N	N

TRADITIONAL REVIEW (SRP)

TRADITIONAL REVIEW (SRP)

TABLE 1

A=APPLICATION

C= CERTIFICATION

F=FLEXIBLE/CHANGE W/O 50.12

N=NOT EXPECTED IN APPLICATION